Enabling entrepreneurial ecosystems to create, develop and sustain high growth enterprises

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ABSTRACT

The South African government has emphasised the important role that entrepreneurship is expected to play in growing and sustaining the economy and have committed resources to develop, grow and support entrepreneurial activity in small businesses. However, the focus on small businesses to sustain economic growth does not align with the findings in entrepreneurial and economic academic studies, this is an indication of the disparity between academics and practitioner perspectives. This study presents an opportunity to bridge the divide between academic and practitioner perspectives, by formulating a theoretical conceptual framework on enabling entrepreneurial ecosystems to support high growth entrepreneurship, which has the highest probability of boosting economic growth.

The potential of enabling entrepreneurial environments, that foster social networks and support structures, in creating, developing and sustaining high growth firms has gained considerable attention by both academics and practitioners. This research will study; using ecology concepts, models and theories that have been successfully applied to social sciences studies; the characteristics and interrelationships of the dynamic interactions between the different elements and processes in an entrepreneurial ecosystem that contain high growth enterprises in South Africa.

This exploratory and qualitative study, by way of semi-structured interviews and archival data, involved 14 interviews which were conducted in Gauteng and the Western Province over a three-month period.

The results of this study indicated that entrepreneurial actors are driven by a need and an enabling culture, the alignment of which will result in the accumulation of valuable resources required to create, develop and sustain high growth enterprises in an ecosystem. The study revealed the difficulties experienced by entrepreneurial actors who were not aligned to the ecosystem culture in receiving the demanded resources, causing many actors to eventually leave the ecosystem. Additionally, the study indicated that strengthening of entrepreneurial ecosystems through high levels of cohesion and interconnectedness, may worsen income inequality and unemployment for those individuals located in the region but not participating in the entrepreneurial ecosystem. The findings of this study have led to the creation of a new model, that is meant to benefit all actors in the entrepreneurial ecosystem by providing a set of guidelines that will assist in creating, developing and sustaining high growth enterprises in South Africa.

KEYWORDS

Entrepreneurial ecosystems, high growth enterprise, entrepreneurship

DECLARATION

I declare that this research project is my own work.

It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University.

I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Trinelle Govender
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CHAPTER 1: INTRODUCTION TO RESEARCH PROBLEM

South Africa is in urgent need of stimulus that can boost economic growth, high growth entrepreneurship has been identified as the key stimulus, however the country has a poor-functioning entrepreneurial environment. Academic literature has been unable to provide a generalisable conceptual framework that could assist practitioners in strengthening the entrepreneurial ecosystem that could create, grow and develop high growth entrepreneurship that would boost economic growth.

South Africa's Gross Domestic Product (GDP) growth rate, prior to 2017, has been in constant decline from a level of 2.49% in 2013 to 0.57% in 2016, improving to 1.32% in 2017 and resulting in a 5-year average real GDP growth rate for the period ending 2017 of 1.50% (OECD, 2018), the lowest level since the birth of democracy. Entrepreneurship has long been positioned at the core of the economic growth process, whereby entrepreneurs act as economic actors making economic growth possible by risking their own resources with the expectation of making a profit (Minniti & Levesque, 2010).

South Africa has persistently low levels of entrepreneurial activity in comparison to other countries, participating in the Global Entrepreneurship Monitor (GEM), both in Africa and around the world (Herrington, Kew, & Mwanga, 2017). The GEM found that South Africa has an entrepreneurial intention score of 10%, at least four times lower than the average score for the rest of Africa. The most significant contributors, that have led to the low score, are the lack of access to funding, government policies and education and training. South African entrepreneurs are almost three times more likely to exit their ventures over financial constraints. The OECD has identified entrepreneurship as the key enabler in employment creation in South Africa, and have identified the government's inability in promoting entrepreneurship and the lack of a strong entrepreneurial environment as the key barrier to South Africa's low early-stage entrepreneurial activity (OECD, 2017). The GEM Entrepreneurial Spirit Index (GESI) measures the level of a country's entrepreneurial awareness, opportunity perception and self-efficacy. South Africa's SPI score of -0.20, ranks 42nd out of 54 economies. Africa has the highest established business rate of 11.9%, however the rate of established businesses in South Africa is 2.2% which is the lowest in the region (Herrington et al., 2017).

The President of the Republic of South Africa, Cyril Ramaphosa, during the 2018 State of the Nation Address, emphasised the importance of supporting small businesses and strengthening the entrepreneurial ecosystem in South Africa to support economic growth, by stating the following (Ramaphosa, 2018):

"Fellow South Africans, Ultimately, the growth of our economy will be sustained by small businesses, as is the case in many countries. It is our shared responsibility to grow this vital sector of the economy. We will work with our social partners to build a small business support ecosystem that assists, nourishes and promotes entrepreneurs. Government will honour its undertaking to set aside at least 30 percent of public procurement to SMMEs, cooperatives and township and rural enterprises. We will continue to invest in small business incubation. We encourage business to do the same…Government is finalising a small business and innovation fund targeted at start-ups. We will reduce the regulatory barriers for small businesses."

The above statement encapsulates the relevant and important role that entrepreneurship is expected to play in growing and sustaining the economy. It also shows the commitment that the government is taking to develop, grow and support entrepreneurial activity in South Africa. However, the focus on small businesses to sustain economic growth does not align with the findings in entrepreneurial and economic academic studies, this is an indication of the disparity between academics and practitioner perspectives.

Academic research on an enabling entrepreneurial environment (an entrepreneurial ecosystem), which informs policy practitioners actions, is under-theorised, under-developed and lacks a generalisable conceptual framework (Autio, Nambisan, Thomas, & Wright, 2018; Cunningham, Menter, & Wirsching, 2018) that could lead to the successful execution of entrepreneurial support initiatives. (Du, K. & O'Connor, 2018) has found that high rates of early-stage entrepreneurial firms may not be a driver of economic efficiency, and that innovation-driven entrepreneurship and improvement-driven entrepreneurship enhances economic efficiency. High growth entrepreneurship has shown the greatest of potential compared to the other forms of entrepreneurship, in contributing to economic growth (Bianchini, Bottazzi, & Tamagni, 2017; Du, J. & Temouri, 2015; Lee, 2014) and employment creation (Brown & Mawson, 2016a; Coad, Daunfeldt, Hölzl, Johansson, & Nightingale, 2014; Li, Goetz, Partridge, & Fleming, 2016). Hence it is critical for practitioners to be made aware of the importance of supporting entrepreneurial ecosystems in South Africa, as a policy initiative rather than focusing all of their resources on small businesses, which may not lead to economic growth.

1.1 Purpose of the Research

The purpose of this research is threefold. Firstly, to contribute to the current academic literature on the under-theorised and under- developed entrepreneurial ecosystem concept. Secondly, to understand the successes, failures and difficulties faced by entrepreneurial ecosystem actors in creating, developing and sustaining high growth enterprises. Thirdly, to formulate a new model, through the development of theory, for enabling entrepreneurial ecosystems in South Africa. This framework is meant to benefit all actors in the entrepreneurial ecosystem by providing a set of guidelines that will assist in creating, developing and sustaining high growth enterprises in South Africa.

The research problem presents an opportunity to bridge the divide between academic and practitioner perspectives, by formulating a theoretical conceptual framework on enabling entrepreneurial ecosystems to support high growth entrepreneurship, which has the highest probability of boosting economic growth.

A much needed conceptual model on enabling entrepreneurial ecosystems to support high growth enterprises is lacking in South Africa. Academic literature on entrepreneurial ecosystems have only recently started to emerge, an EBSCO© database search for the term "entrepreneurial ecosystem" on 01st May 2018, yielded 110 peer-reviewed academic journals. A second search done on 27th October 2018, yielded 136 peer-reviewed academic journals, 122 of which were published in the last five years. Academic research on the entrepreneurial ecosystem phenomenon is missing the critical understanding of the characteristics and interrelationships of the dynamic interactions between the different elements and processes in an entrepreneurial ecosystem that contain high growth enterprises (Acs, Stam, Audretsch, & O'Connor, 2017; Brown & Mason, 2017; Mack & Mayer, 2016). This has led to practitioners copying other regions ecosystems without success. Entrepreneurial ecosystems are a social phenomenon, which is shaped by culture, history and institutional settings (Mack & Mayer, 2016), hence copying and adopting a successful regions entrepreneurial ecosystem framework will be ineffective and may cause additional harm to the already fledgling entrepreneurial environment (Neumeyer & Corbett, 2017).

Academic scholars in the entrepreneurship field have made numerous calls for theoretical contributions in understanding the dynamics of entrepreneurial ecosystems. Most recently, The Entrepreneurship and Regional Development Journal has called for academic articles that provides insights into the dynamics of entrepreneurial ecosystems based on a theoretical

foundation rather than empirical findings which are static and applicable only to a particular geographical region. The journal has identified a key theme that is missing in academic literature and needs to be addressed, which will be the focus of this research project.

This theme is based on the understanding of the interactions in the entrepreneurial ecosystem, specifically how the different elements and processes dynamically interact within an entrepreneurial ecosystem (Audretsch, Mason, Miles, & O'Connor, 2018).

1.2 Scope of the research

The scope of this inductive, exploratory and qualitative research is threefold. Firstly, due to the lack of a theoretical foundation applied to entrepreneurial ecosystem studies (Audretsch et al., 2018) this research will study; using ecology concepts, models and theories that have been successfully applied to social sciences studies; the characteristics and interrelationships of the dynamic interactions between the different elements and processes in an entrepreneurial ecosystem that contain high growth enterprises in South Africa.

Secondly, since this research is intended to produce generalisable findings that could be applicable to any region, the scope of the research will adopt a case-study approach and involve the investigation of only two regional entrepreneurial ecosystems in South Africa. The two regions identified include Gauteng and Cape Town.

Thirdly, the research seeks to understand the roles and experiences of the different social actors acting individually or as a collective within an entrepreneurial ecosystem, the results of which will be used to create a conceptual framework to assist the actors in creating, developing and sustaining high growth enterprises. Hence the scope of the research will involve gathering data from at least one type of capacity development provider, direct finance provider, ecosystem support player and high growth entrepreneur in each region.

1.3 Report Structure

The remainder of this document is divided as follows: Chapter 2 presents the review of the literature that is related to the research problem and a description of the relevant theory, which are used to build an argument that allows the research problem to be restated as a research question and a set of hypotheses, which is presented in Chapter 3. Chapter 4 presents the proposed research methodology and design, by specifying and defending the choice of methodology, population, unit of analysis, sampling method and size, measurement instrument, data gathering process and analysis of approach to be adopted in the research

followed by the limitations of the proposed research methodology and design. Chapter 5 presents the results of the research followed by Chapter 6 which presents the discussion of the results in terms of the research question and propositions and in terms of the literature. Chapter 7 presents the main findings of the research, which includes a new model proposed to assist entrepreneurial actors in the entrepreneurial ecosystem, recommendations to entrepreneurial actors and practitioners, and finally recommendations for future research and the limitations of the research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The review of the literature will start by describing the entrepreneurship phenomenon and the role of entrepreneurship in contributing to economic growth. The current literature on entrepreneurial ecosystems will then be reviewed to identify what has already been studied and will identify which areas remain to be researched further. Thereafter, a detailed review will be conducted on the applicable ecology concepts, models and theories which have been applied to social sciences research; its applicability to the entrepreneurial ecosystems concept will be critically evaluated and those attributes that are applicable or non-applicable to entrepreneurial ecosystems will be identified. This will then allow for the reframing of the research problem in terms of the research question and propositions.

2.2 Entrepreneurship

Entrepreneurship is a multi-faceted phenomenon that has yielded many broad ranged definitions created from the different perspectives in academic literature. Different definitions of entrepreneurship are usually contradictory and flawed with disparities (Audretsch, Kuratko, & Link, 2015). In one the most cited articles on entrepreneurship, Shane & Venkataraman (2000) ,using an opportunity lens, defines entrepreneurship as the process of understanding the discovery, evaluation and exploitation of opportunities that create future goods and services. McMullen & Dimov (2013) using a process lens, defined entrepreneurship as a process of meeting a set of conditions such as a goal, motive and opportunity followed by a series of events which should include initiation, allies, breakthrough and celebration. Entrepreneurship is a process in which individuals and teams respond to opportunities in their environment with the goal of making a profit and creating value for society.

An entrepreneur is an individual who identifies an opportunity in the environment, and follows the necessary processes of acquiring resources, creating and growing a venture and setting out new approaches to satisfy a need with the aim of benefiting from the opportunity (Bull & Willard, 1993; Nieman & Nieuwenhuizen, 2014).

2.2.1 Small Business and Entrepreneurial Venture

While both are businesses that make vastly different contributions to the economy, there is a key difference between a small business and an entrepreneurial venture, which needs to be clearly distinguished to avoid misinterpretation by academics and mainly by practitioners. The main objective of small businesses is to satisfy the personal goals of providing autonomy and security to the business owner. The aspirations of small businesses are not necessarily to grow the business, and achieves growth mainly through inflation. In contrast entrepreneurial

ventures operate with the primary objective to make a profit and grow the business, whilst creating employment. The main characteristic that distinguishes a small business from an entrepreneurial venture is the adoption of innovative practice (Nieman & Nieuwenhuizen, 2014). Entrepreneurial ventures adopt innovation into their operations as a means of remaining competitive in the market and growing the business. Whereas small businesses focus on supplying an established product or service, and gains a competitive advantage through its locality and operation in a particular market.

2.2.2 Entrepreneurship and Economic Growth

Joseph Schumpeter defined the role that entrepreneurship plays in society as being a key enabler to economic growth through the fostering of innovation in market economies (Schumpeter & Backhaus, 2003). This had led to a widespread focus by academics and policy makers to support the growth of entrepreneurship in order to boost economic growth. Robert Solow's growth model had heightened the potential that entrepreneurship could provide in driving economic growth. Solow (1957) identified labour growth, capital accumulation and total factor productivity as the key elements that contribute to economic growth. Total Factor Productivity has been found to be strongly influenced by innovation which improves productivity by producing more output for a given input of resources. Bjørnskov & Foss (2013) had found that entrepreneurship influences total factor productivity (TFP) as a result of the ability of entrepreneurial firms and individuals to discover the optimum combination of productive factors that improve productivity/economic efficiency. It was also found that institutions play a crucial role on the level of effect that entrepreneurship has on TFP, by influencing the transaction costs and uncertainty experienced by entrepreneurs.

Academic literature has found that not all type of entrepreneurship contributes to economic growth. Du, K. & O'Connor (2018) has found that high rates of early-stage entrepreneurial firms may not be a driver of economic efficiency, and that new product entrepreneurship and improvement-driven entrepreneurship enhances economic efficiency.

2.2.3 High Growth Entrepreneurship

The OECD defines high growth enterprises as enterprises that achieve an average annualised growth, determined by turnover or the total number of employees, greater than 20% per annum, over a three-year period, with at least 10 employees at the beginning of the growth (OECD & Statistical Office of the European Communities, 2008). This definition has been widely adopted in academic literature mainly due to the benefit of comparing the findings amongst studies using the same definition, despite the consideration that enterprises may

perceive the determinant of growth as being different from turnover or employment (Brown, Mawson, & Mason, 2017).

High growth entrepreneurship has shown the most amount of potential from other forms of entrepreneurship, in contributing to economic growth (Bianchini et al., 2017; Du, J. & Temouri, 2015; Lee, 2014) and employment creation (Brown & Mawson, 2016a; Coad et al., 2014; Li et al., 2016). (Bos & Stam, 2014) in their study of the influence of young high growth firms, found that an increase in the emergence of high growth firms in an industry has a positive effect on the ensuing growth of that industry. Most high growth firms that are unable to maintain their growth rate, develop into stable medium-sized enterprises that contribute to the creation of employment and multipliers and spillovers in their local and regional economy (Coad, Frankish, Roberts, & Storey, 2013; Li et al., 2016)

Autio & Rannikko (2016) have found that policy initiatives that facilitate high growth entrepreneurship is characterised by active public-private sector collaboration, staged support dependent on milestone achievement and a high degree of selectiveness. Brown & Mawson (2016b) have found that there is a skewness in perception amongst support and policy practitioners who perceive and in turn support high growth firms that are only science and high-technology based, which has limited the support received by high growth firms in other sectors of the economy. High growth firms are primarily an economic rather than a technological phenomenon, and studies have shown that there is a higher prevalence of high growth firms in the services industry than in the high-technology industry (Coad et al., 2014). The study by Brown & Mawson (2016b) also found that in addition to financial support, which in isolation may hinder the firm's growth, high growth firms also need growth support mechanisms such as accelerator support which provides more "competency-based" support than resource based. High growth firms need to be strongly externally oriented, Van Cauwenberge, Bauwhede, & Schoonjans (2013) has shown that entrepreneurial network and training programs that focus on peer-peer interaction has led to the success of the program in attracting participation which had a statistically significant effect on labour productivity. A study on investigating the characteristics of high growth firms that could not sustain their growth rate, found that innovativeness, profitability and financial conditions were not determinants of sustaining high growth (Bianchini et al., 2017). The lack of network support has been identified as a key determinant in explaining why high growth firms are unable to maintain their growth rate over a period of time, particularly after 4-6 years (Daunfeldt & Halvarsson, 2015). Huggins & Thompson (2015) has found that the ability of an entrepreneurial firm to innovate is significantly related to the network capital investment made in inter-organisational relationships and interactions. In particular, entrepreneurial firms who have a stronger ability

to gather network capital will attain superior levels of innovation and enhance the permeability of the knowledge filter.

The potential of enabling entrepreneurial environments, that foster social networks and support structures, in creating, developing and sustaining high growth firms has gained considerable attention by both academics and practitioners. This has led to a significant amount of attention on the study and implementation of entrepreneurial ecosystems in regions that contain high growth firms. The next section discusses this phenomenon.

2.3 Entrepreneurial Ecosystems

Entrepreneurial Ecosystems is a relatively new phenomenon, used in the field of entrepreneurship, to describe the regional environment of high growth entrepreneurship. While there is no single definition of an entrepreneurial ecosystem (Brown & Mason, 2017), the concept refers to the systemic and symbiotic relationships in regions where actors, institutions and processes support new high growth enterprises (Neumeyer et al., 2017). Academic research on the entrepreneurial ecosystem phenomenon remains largely under-theorised and under-developed (Autio et al., 2018; Cunningham et al., 2018), with the concept being used as a conceptual umbrella which has been characterised by too few theoretical frameworks and a lack of consistent empirical evidence (Spigel & Harrison, 2018).

The recent emergence of the entrepreneurial ecosystem concept was largely attributed to the insights provided by Brad Feld which emphasised the importance of an entrepreneurial ecosystem in policy and practitioner communities. Feld showed in the book Startup Communities: Building an entrepreneurial ecosystem in your city, the dependence that economic growth of regions has on creating, developing and sustaining start-up communities. The book emphasised the importance of the role of investors, mentors, universities, government, service providers and past, present and future entrepreneurs in creating an enabling entrepreneurial network that fosters a philosophy of inclusiveness in supporting entrepreneurship (Feld, 2012). This has led organisations such as the OECD, the Kaufmann Foundation and the World Economic Forum to adapt the entrepreneurial ecosystem concept as a key enabler in economic development policy. Most of the academic literature to date has studied regions that have a successful entrepreneurial ecosystem, providing empirical findings that cannot be adapted to other regions due to the uniqueness that each region possesses in terms of cultural, social and material attributes (Spigel, 2017).

Academic studies published thus far on entrepreneurial ecosystems, have been focused mainly on identifying the underlying attributes of successful ecosystems. Evans & Bahrami (1995) in their study of the Silicon Valley ecosystem, identified six major components that act together in a continuous process referred to as “flexible re-cycling” which characterises the regions ability of creating a high technology cluster of unique scale and success. These major components included universities and research institutes, venture capital, support infrastructure, entrepreneurial spirit, lead users and a talent pool. These elements continuously support enterprises in the ecosystem which eventually leads to the evolution of existing enterprises and the creation of new enterprises in an on-going process characterised by enterprise creation, demise, and re-cycling. A key element that was missing in the study of Evans & Bahrami (1995) was the role of government and the influence of public policy on the ecosystem. Isenberg (2010) highlighted the important role that government plays in igniting enterprise creation and growth by fostering an entrepreneurial ecosystem that sustains entrepreneurs. In particular, governments are expected to collaborate with the private sector, harness an entrepreneurial culture, identify and remove regulatory obstacles negatively affecting the growth of enterprises, introducing favourable policies and encouraging the role and support of ecosystem support service providers such as incubators. Many other studies, (Kenney & Patton, 2005; Neck, Meyer, Cohen, & Corbett, 2004; Spigel, 2017; Spilling, 1996), have all incorporated the above attributes and elements needed in an entrepreneurial ecosystem to foster the growth of entrepreneurship in a region. All of these studies lack a theoretical foundation and is rather focused on the attributes of successful ecosystems and neglects the processes and interactions that take place between these attributes and elements in an entrepreneurial ecosystem. Each of the elements comprising an entrepreneurial ecosystem will be reviewed for its applicability and relevance to the South African context.

2.3.1 Policy

The policy element refers to the role public policy and the government play in supporting the entrepreneurial ecosystem in creating, developing and sustaining high growth enterprises. Effective government support could be in the form of providing tax incentives, enterprise friendly policies and legislation, access to physical infrastructure such as internet, transportation.

Armanios, Eesley, Li, & Eisenhardt (2017) has shown the influential role that government can play in promoting regional entrepreneurship, by using institutional intermediaries to align the requirements of enterprises and the availability of public resources such as financial capital. These institutional intermediaries are mandated to promote private-public sector partnerships

and ignite economic prosperity through supporting high growth enterprises rather than necessity-based entrepreneurs. In addition, these intermediaries significantly extend the market access of a region to talented individuals, and resources from other regions globally, which enhances the potential of entrepreneurial resource accumulation in emerging economies.

Academic research done on public policy and entrepreneurship has revealed that an entrepreneur-friendly policy environment promotes and incentivises entrepreneurs at the national level (Dai & Si, 2018; Figueroa-Armijos & Johnson, 2016; Kenzhegaranova, Kunanbayeva, Azimbekova, & Podmetina, 2016; McMullen, Wood, & Kier, 2016; Yoon, Kim, Buisson, & Phillips, 2018). At the regional level, Xing, Liu, & Cooper (2018) has demonstrated how local government collaborate with entrepreneurs and the private sector to promote regional entrepreneurship. The role of local government as an institutional entrepreneur is supported in regions with decentralised political groups and variances in regional conditions which promotes fierce competition among local governments. Certain enabling conditions are required to be met for local government to play an effective role in promoting regional entrepreneurship, which include; internal pressure and external demand for an institutional change that facilitates the engagement with former entrepreneurs and the private sector. This will allow for a collaborative partnership in which the local government is able to attract and access valuable public resources in line with the needs of entrepreneurs in the region. McMullen et al. (2016) showed that external demand and internal pressure for institutional change by local government, is influenced by the alignment of socio-political attributes between entrepreneurs, corporate executives and the local government. In particular, new enterprises determine the location of their enterprise based by their identification of political party identification, values and the roles it plays in increasing entrepreneurial support services and natural and cultural amnesties. Hence political parties that possess valuable natural and cultural amnesties and support services are encouraged to promote their values and resources, with the aim of attracting corporate executives, entrepreneurs and additional resources into the region. This finding has been extended by Lehmann, Schenkenhofer, & Wirsching (2018) who studied the emergence of ‘unicorn’ enterprises using the Silicon Valley model of high-tech entrepreneurship and the Main Street models of entrepreneurship, found that the emergence of ‘unicorn’ enterprises is influenced by the provision of human capital in the institutional context, and the role of public provision and individual investment plays in acquiring human capital to a specific region.

Kibler, Kautonen, & Fink (2014) highlighted the important role played by policy makers in facilitating a high level of social legitimacy of entrepreneurship by highlighting the shared social

benefits and value that supporting high growth entrepreneurship can have on the regional economy.

2.3.2 Culture

The cultural element refers to the societal norms, institutions and beliefs that influence the role of high growth entrepreneurship in regional entrepreneurial ecosystems. A regions perception of entrepreneurship and new enterprise founders, as well as the acceptance or lack thereof of enterprise failure or economic success and perceptions of the regional society regarding attitudes to risk (Stuetzer, Obschonka, Brixy, Sternberg, & Cantner, 2014), all influence the culture embedded in an entrepreneurial ecosystem. Entrepreneurial culture has a strong influence on individuals desire to become an entrepreneur, the motivation to launch a new enterprise and the level of support provided to entrepreneurs in a region. Stuetzer et al. (2014) state that while an enabling entrepreneurial culture does have an influence on entrepreneurial behaviour, the perceptions and beliefs of individuals vary and as a result may not influence all individuals to become entrepreneurs or too support entrepreneurs. Individuals that are aligned to the personal and social factors characterising the perception of the entrepreneurial environment are more likely to be positively influenced by the entrepreneurial culture. Kibler et al. (2014) showed that social legitimacy adopted by a region is influenced by the alignment of perceptions in a region on whether entrepreneurship is desirable, proper or appropriate. The alignment of perceptions determines level of support provided by a region in creating and sustaining an enabling environment for entrepreneurs to succeed. High levels of regional social legitimacy of entrepreneurship in turn results in a high level of community support and supply of resources, which could account for the lack of resources in the region due to economic restrictions. If however, a region that is wealthy in terms of the presence and contribution of large corporations to economic growth and employment, then young individuals will be conflicted by the high opportunity costs, in the form of high salaries offered by large corporations, in starting a new enterprise or deciding to be employed at a new enterprise.

Lounsbury & Glynn (2001) state that promoting and sharing entrepreneurial success stories helps create a new venture identity which serves as an enabler to which legitimacy can be derived by financial resource providers, suppliers and consumes, allowing access to new forms of capital and market opportunities. Entrepreneurial stories of high values resources and institutional capital and its contribution to the entrepreneurial success is used to acquire additional capital and wealth. The author addresses the importance of success stories from an entrepreneurial benefit perspective rather than an ecosystem perspective.

Whilst the positive effect that entrepreneurial success stories have on the attracting resources into an entrepreneurial ecosystem and changing the role of entrepreneurship in society, young entrepreneurs who are drawn into entrepreneurship as a result of this influence, these stories do not give much support to nascent entrepreneurs on basing their actions to becoming a high growth enterprise due to the cultural codes inherent in society (Aldrich & Yang, 2012). Aoyama (2009) showed in the study of the role of regional culture on entrepreneurship in Japan, that regional cultural norms transcend industrial boundaries and affects the economic activities and initiatives adopted by a region. It was also shown that dominant industries and corporations in a region largely influences the underlying characteristics of regional business practices, which are copied and adopted by new and existing entrepreneurs in the region, due to the social status attached to the industry or corporation over time.

A major characteristic of entrepreneurial culture is the tolerance to failure of an enterprise. Baù, Sieger, Eddleston, & Chirico (2017) mentions that enterprise failure can invoke feelings of worthlessness and may lead to depression of the entrepreneur, it further reduces the likelihood of entrepreneurs to launch a new enterprise due to the damage previously done on the entrepreneurs' reputation and social capital which will affect the ability of the entrepreneur to acquire resources for the new enterprise. However, many entrepreneurs that fail re-enter by launching a new enterprise or seek employment in a new enterprise. This is similar to the finding by Jaskiewicz, Combs, Ketchen, & Ireland (2016) which found that entrepreneurs that re-enter by launching a new enterprise, start with resources that are valuable in taking advantage of novel opportunities. These resources could be both tangible and intangible, where intangible resources could be in the form of past experiences and knowledge gained from the previous entrepreneurial cycle. However, this study neglected the influence of regional culture on the intention of an entrepreneur to re-enter after a failed enterprise. A study done by Kreiser, Marino, Dickson, & Weaver (2010) on the impact of culture of risk taking and proactiveness in enterprises, demonstrated that culture in terms of both values and institutions influences the ability of enterprises to display proactive behaviours and risk taking. In particular, cultures with a high uncertainty avoidance and power distance will have a significant negative impact on an enterprises risk-taking ability and intention of a failed entrepreneur to start a new enterprise. As a result, a culture characterised by a difficulty in dealing with ambiguity and possesses an unequal distribution of power will be risk averse and failed entrepreneurs are less likely to re-enter by launching a new enterprise.

2.3.3 Finance

The finance element refers to the financial capital provided to entrepreneurs in an entrepreneurial ecosystem. Financial capital is most commonly provided by an entrepreneurs' friends and family, angel investors, venture capital funds, private equity funds, family offices, financial institutions, financial support institutions or crowdfunding. During the early stages of a high growth enterprises development, creating relationships with venture capital funds are viewed as one of the most critical network ties for entrepreneurs. Since venture capitalists provide financial capital, management skills in the form of human capital to the high growth start-ups they fund, and social capital in the form of providing enterprises access to their networks (Alexy, Block, Sandner, & Ter Wal, 2012). The depth of a venture capitalist social capital derived from their social networks has been found to increase the value of resources provided to high growth enterprises, and as a result venture capitalists who have high amounts of social capital usually provide a reduced amount of funding to compensate for the value provided by the social capital of the venture capitalist. De Prijcker, Manigart, Collewaert, & Vanacker (2017) state that high growth enterprises that relocate to regions that contain a high amount of venture capital funds, will be more likely to receive initial venture capital than enterprises that remain in regions that have a low amount of venture capital funds. This is an indication that high growth enterprises are prepared to relocate from resource poor regions to regions with an abundance of resources, which are demanded by the entrepreneur and is essential for success of the enterprise.

Angel investors are also an important financial capital provider to high growth enterprises, particularly during the start-up phase of the enterprise. Cardon, Mitteness, & Sudek (2017) stated that 70% of the financial capital issued to new enterprises are from angel investors, and that angel investors are influenced by enthusiasm, preparedness and commitment of entrepreneurs rather than solely on their business idea. Similar to venture capitalists, angel investors also provide additional value-added resources beyond financial capital such as management and entrepreneurial skills, and social capital through their networks (Collewaert & Sapienza, 2016).

2.3.4 Support

The support element refers to the support services that facilitates the flow of resources within an entrepreneurial ecosystem. Organisations offering these services can include incubators, accelerators, professional entrepreneurial associations, clusters and networking organisations. Support organisations assist high growth start-ups with accessing resources that they do not have access to through their internal capabilities and in some cases provide

a co-working space for entrepreneurs, through network support. These organisations are also dependant on support from other entrepreneurial actors in the ecosystem including former entrepreneurs they had assisted by resources such as knowledge and experience, financial capital, access to market, human capital needed by the new cycle of high growth start-ups (Spigel, 2017).

2.3.5 Human Capital

The human capital element refers to the skilled persons that become entrepreneurs or that are employed by entrepreneurial ecosystem actors. Academic institutions are often associated with producing high quality human capital, with specialised skills that are in need by entrepreneurial actors in the entrepreneurial ecosystem. Human capital also develops through interactions in the ecosystem, by learning from knowledge and experiences. Skilled workers have been shown to be a key determinant to the success of high growth enterprises (Spigel, 2017).

Theodoraki, Messeghem, & Rice (2018) state the important role played by University Business Incubators (UBI) in entrepreneurial ecosystems in stimulating technology transfer by promoting the commercialisation of innovative ideas. When there is a lack of tangible and intangible resources accessible by UBI's, they are encouraged to compensate for these shortages by creating dense and strong relationships with other entrepreneurial actors in the ecosystem. Hayter (2016) emphasised this view by showing that university faculty and graduate student spinoff success depends on connecting academic entrepreneurs to other social networks outside of the university, due to the low probability of traditional university intermediaries to bridge the social chasm between academic and entrepreneurial networks. Traditional university intermediaries often don't share the same values, norms and objectives as the entrepreneurial ecosystem. Rather technology transfer offices (TTO's) have been shown to play an influential, facilitative role as an intermediary in commercialising innovative ideas (Clarysse, Wright, Bruneel, & Mahajan, 2014). Clarysse et al. (2014) further states the importance of transferring innovative ideas from universities into the entrepreneurial ecosystem, in attracting corporate organisations and entrepreneurs to capture the value by commercialising these ideas. This relationship will in turn strengthen the ecosystem by promote the creation of more innovative ideas by universities, thereby creating a continuous cycle of co-creation and co-capturing between universities and the entrepreneurial ecosystem.

2.3.6 Markets

The markets element refers to the access to markets serving as customers to high growth enterprises. High growth enterprises during the start-up phase of their enterprise have difficulties accessing markets due to their inexperience's and are dependent on their social networks within the entrepreneurial ecosystem to provide access to the needed markets.

The above elements have been widely identified in successful ecosystems, however the characteristics and the interrelationships of the dynamic interactions between these elements and the processes that facilitates the flow of resources in an entrepreneurial ecosystem that supports high growth enterprises still needs to be determined.

Whilst the entrepreneurial ecosystem concept remains under-theorised, a few studies have been performed adopting theoretical perspectives in addressing the system and process issues of the concept. Thompson, Purdy, & Ventresca (2018) applied field theory, to determine how an entrepreneurial ecosystem for social impact businesses takes form through everyday interactions, by examining the cultural-cognitive and material micro-dynamics of activities taking place within the entrepreneurial ecosystem. The study found that ecosystems are endogenously created through social interactions, through a bottom-up approach and these interactions acts as a resource in catalysing ecosystem formation. This finding is aligned with the emergence of natural ecosystems which naturally evolves over time. Bottom-up ecosystems does not require policy interventions or any actor to manage or control the system, rather the ecosystem develops from path dependencies and a culture that coordinates the processes and motivates the actors of the entrepreneurial ecosystem Colombo, Dagnino, Lehmann, & Salmador (2017). Whilst the study provides a valuable contribution in understanding the importance of social interaction as a key resource in ecosystem formation, these empirical findings are specific to the Seattle ecosystem, and will not apply to regions which have different structural attributes.

Spigel & Harrison (2017) looked to determine how a process-based view of entrepreneurial ecosystems could provide a richer framework to understand their role in supporting new venture creation. The study highlighted the heterogenous nature of entrepreneurial ecosystems which differentiates the concept from industrial clusters and regional innovation systems (RIS). The processes and functioning of clusters and RIS involves both economies of scale and scope and knowledge spill overs. Whereas the functioning of an entrepreneurial ecosystem is derived from the social nature of the entrepreneurial process which involves the interaction of multiple actors in the entrepreneurial ecosystem. The heterogeneous nature of entrepreneurial ecosystems further negates the feasibility of a 'one size fits all' framework

used for adopting different types of ecosystems (Brown & Mason, 2017). The study identified entrepreneurial ecosystems as an ongoing process, with its structure changing over time due to the development of resources, stronger flow between entrepreneurial ecosystem actors and a strong localised culture that promotes learning, network development and risk taking. The findings of the study show that as new ventures grow, they strengthen the overall entrepreneurial ecosystem.

Goswami, Mitchell, & Bhagavatula (2018) using a social situated entrepreneurial cognition model, showed how accelerators affect commitment, venture validation and value creation in a regional entrepreneurial ecosystem. The study emphasised the importance of adopting an interactive mode of knowledge transfer and found that the frequency and intensity of interaction between entrepreneurs and accelerator actors assisted in developing the expertise of the entrepreneurs. The study only investigated the role of the accelerator in a particular entrepreneurial ecosystem. The effects that the interactions of the other actors and the associated processes, activities and relationships present in the ecosystem, will have a significant influence on the accelerators ability to successfully play the role of intermediary in the ecosystem.

Although the main elements of an entrepreneurial ecosystem have been identified and consensus has been reached on its applicability, academic literature to date has not applied ecological theory, or developed social sciences theory to study and explain the characteristics and interrelationships of the dynamic interactions between the different elements and processes in an entrepreneurial ecosystem; with the concept being represented as a mere metaphor (Brown & Mason, 2017; Neumeyer et al., 2017). The next section aims to fill this gap, by reviewing the relevant concepts and theories on biological ecosystems and how it can be applied to social sciences research.

2.4 Biological Ecosystems

The focus of this section is to understand the fundamental concept of a biological ecosystem and investigate the theories and models used to understand how the elements in an ecosystem are connected, to identify the dynamic interactions and influences of these elements, the relationships of the different processes that take place and the constraints on the behaviour of the ecosystem.

An Ecosystem is a complex multidimensional concept that was first defined in 1935 by Sir Arthur Tansley, Tansley's definition of an ecosystem represents the foundation of the meaning

and modelling used universally by a diverse population of academic scholars such as ecologists, economists and sociologists. This basic definition is used by academics and non-academics to refer to ecosystems from a multitude of perspectives. To fully understand what is meant by the concept of an 'ecosystem', it is crucial to analyse the original definition created by Tansley in 1935. Tansley defined an ecosystem as (Tansley, 1935):

"It is the systems so formed which, from the point of view of the ecologist, are the basic units of nature on the face of the earth. Our natural human prejudices force us to consider the organisms (in the sense of the biologist) as the most important parts of these systems, but certainly the inorganic " factors" are also parts-there could be no systems without them, and there is constant interchange of the most various kinds within each system, not only between the organisms but between the organic and the inorganic. These ecosystems, as we may call them, are of the most various kinds and sizes."

Tansley's definition highlights three key characteristics that encompasses the fundamental meaning of an ecosystem. Firstly, Tansley referred to systems as the "basic units of nature" which infers from the point of view of the ecologist that it should be viewed from a systems perspective as the basic unit of analysis, rather than isolating and then analysing individual parts such as the biotic and abiotic components. Tansley emphasises this point by stating that an ecosystem contains not only organisms but also the whole complex of physical factors which collectively form part of the environment of the ecosystem. The whole complex of physical factors also comprises of abiotic factors such as soil, rocks and air, all of which an ecosystem is dependent on for survival. This draws similarities to General System Theory, defined by Ludwig von Bertalanffy, suggesting that investigating parts of an organisation does not provide any information on the processes and co-ordination of the parts, rather studying the organisation as a system, referring to the interrelation between elements and the environment, provides a complete explanation of the phenomenon being studied (Von Bertalanffy, 1972). This makes clear the universal use of an 'ecosystem' to refer to systems in general.

Secondly, Tansley mentions the "constant interchange" not only between the biotic factors but also between the biotic and abiotic factors. This statement clearly indicates the importance of interaction between organisms and its environment within an ecosystem. Thirdly, the term "various kinds and sizes" presents the ecosystem as being scale dependent (Pickett & Cadenasso, 2002), being as small as a patch of soil or as large as the biosphere of the Earth, as long as it comprises of biotic and abiotic factors in a physical environment in which interaction can take place with constant interchange amongst these factors. This highlights

the importance of specifying the spatial environment with its boundaries, to clearly understand the system being investigated.

Tansley's definition of the ecosystem allows the concept to be used as a metaphor to describe various systems outside of ecology, due to the lack of definition of the boundaries on the size and the types of organic and inorganic factors in an ecosystem. The value that each factor within an ecosystem possesses is not defined, meaning all of these factors are equally important for the survival of an ecosystem, with no indication for the need of an equilibrium state.

It can be seen from the analysis of Tansley's definition that this complex concept of an ecosystem can be applied to a multitude of systems that satisfy criteria which is broad and open to various interpretations depending on the point of view being assessed. This presents the difficulty faced by academics to create frameworks, models and theories to analyse and understand the ecosystem and the interrelationships of the interactions and processes that take place in it. The next section looks at a widely used framework to understand these characteristics of ecosystem phenomena.

Ecosystem ecology theory has progressively advanced from the creation of the original ecosystem concept. Recent ecology theory taking a system view of an ecosystem, identifies four elements for assessing the force of an ecosystem. These include linkages, fluxes, pools and feedbacks (Higgins, 2017). Linkages refer to the network between the main elements (ie. the pools). Pools refer to the elements or nodes in an ecosystem, which could represent a single species or functional groups which are characterised by the function provided in the ecosystem. Fluxes refer to the exchange of material amongst pools. This represents a crucial process that helps maintain ecosystem functioning. Feedbacks represents the most complex process in ecosystem functioning that defies the cause-effect relationship, since they operate on different time scales to the other processes in the ecosystem. Feedbacks is the main determinant to ecosystem resilience. Resilience refers to the ability of an ecosystem to adapt to disturbances whilst sustaining the state of the system. Negative feedbacks exist which can inhibit resilience and could lead to the destruction of an ecosystem.

These fundamental features of an ecosystem are used in conjunction with ecology theory to investigate the dynamic interactions between the different elements and processes in an ecosystem. Using an ecosystem lens, these features will be applied to entrepreneurial ecosystems. The next section analyses the ecology theory and its applicability to entrepreneurial ecosystems.

2.5 Complexity Theory

Due to the complex nature of ecosystems, complexity theory and complex adaptive systems (CAS) has been widely used to investigate the ecosystem phenomena. CAS has been used as a lens to understand the interactions amongst ecosystem pools and feedbacks that lead to the emergence of ecosystems and when used with the Adaptive Cycle, allows for the investigation of resilience by analysing the structure of local interactions between pools and feedbacks and the processes of fluxes. One of the most recent applications of CAS has been on investigating marine ecosystems for emergent patterns, critical transitions and the associated interactions and relationships taking place in the ecosystem that leads to resilience (Hagstrom & Levin, 2017).

2.6 Entrepreneurial Ecosystems as Complex Adaptive Systems

Complexity theory has widely been adopted in social science research which has allowed for the investigation of social systems through a complex adaptive systems lens. In social sciences, CAS consists of a dynamic set of interdependent agents, whose interactions lead to the creation of systemwide patterns, to build a coherent whole. The patterns created, in turn influences the agents such that they can learn and adapt to disturbances and thereby improving the completeness of the integration of future patterns in cycles (Eoyang & Holladay, 2013; Jones & Corner, 2012). The key processes through which a CAS functions include self-organisation. emergence and bonding. The properties of CAS that lead to the key processes include non-linearity and the dynamic behaviours and structures of attractors (feedbacks in ecology theory), who are agents who either promote or inhibit new behaviours in the social system. A CAS exhibits complex behaviour only in the presence of heterogeneity through diversity, interdependence between agents through self-organisation and adaptive tension.

The entrepreneurial ecosystem concept has been widely referred to as a complex system (Audretsch & Link, 2018; Auerswald & Dani, 2017; Brown & Mason, 2017; Bruns, Bosma, Sanders, & Schramm, 2017; Cunningham et al., 2018; Ghio, Guerini, & Rossi-Lamastra, 2018; Kuratko, Fisher, Bloodgood, & Hornsby, 2017; Sussan & Acs, 2017; Theodoraki et al., 2018), however none of these academic studies have applied complexity theory in assessing the complexity and dynamic behaviour of entrepreneurial ecosystems. In order to adopt the Complex Adaptive System lens in the research, its applicability to the entrepreneurial ecosystem concept must first be determined.

2.6.1 Self-Organisation, Emergence and Bonding

Thompson et al. (2018) in their study of how entrepreneurial ecosystems take form, showed how the ecosystem self-organises through actors collectively working together by bonding through social interaction which leads to the emergence and contribution to the inherent features and dynamics of the entrepreneurial ecosystem. This finding is aligned with the emergence of natural ecosystems which naturally evolves over time. Bottom-up ecosystems, such as Silicon Valley, does not require policy interventions or any actor to manage or control the system, rather the ecosystem self-organises from path dependencies and a culture that coordinates the processes and motivates the actors of the entrepreneurial ecosystem (Colombo et al., 2017). The self-organising, emergent and bonding nature of an entrepreneurial ecosystem is a key characteristic that differentiates the concept from industrial clusters and regional innovation systems. Both clusters and regional innovation systems complies to the traditional theoretical view of a top-down, hierarchal structural view, where public institutions play a leading role in creating and managing the system, and larger firms are perceived as the most important actors due to their possession of resources and market knowledge (Spigel & Harrison, 2018).

2.6.2 Heterogeneity

Entrepreneurial ecosystems are a social phenomenon, which is shaped by culture, history and institutional settings (Mack & Mayer, 2016), it is highly heterogenous since each region has a diverse and unique set of social, cultural and material attributes (Spigel, 2017). This heterogeneity through diversity in regional entrepreneurship enables the entrepreneurial ecosystem to adapt to shocks in the environment whilst gaining knowledge, leading to spill overs in other areas of the entrepreneurial ecosystem (Bhawe & Zahra, 2018). The heterogenous nature of entrepreneurial ecosystems has led to unsuccessful attempts, by policy practitioners in a particular region, to copy and adopt a successful regions entrepreneurial ecosystem framework taking a “one size fits all” policy approach (Brown & Mason, 2017; Neumeyer & Corbett, 2017).

2.6.3 Non-linearity

Goswami et al. (2018) highlighted the non-linearity nature of an entrepreneurial ecosystem by showing that the role that accelerators play in developing the Bangalore entrepreneurial ecosystem go beyond assisting ventures and its founders, but also influences stakeholder cooperation and founder knowledge, thereby creating ecosystem additionality even when the ventures they are supporting have failed. Accelerators will lose the direct material benefits from the failed venture but will gain knowledge by learning from failure and could encourage

failing ventures to “fail fast” to contribute their expertise in supporting other high growth enterprises. This study also highlights the importance of feedbacks in developing an entrepreneurial ecosystem, accelerators are able to develop their expertise through engaging in the ecosystem as intermediaries and will eventually increase their benefits as the ecosystem develops to create macro-level expertise that will further develop the accelerators ability to support the entrepreneurial ecosystem. The nonlinear dynamics of entrepreneurial ecosystems are also evident by the type of entrepreneurship that determines the success of the system. The focus of an entrepreneurial ecosystem is to create, develop and sustain high growth enterprises and not to increase the start-up rate of new ventures (Acs et al., 2017; Brown & Mason, 2017; Spigel & Harrison, 2018). Academic literature has found that not all type of entrepreneurship contributes to economic growth. Du, K. & O'Connor (2018) has found that high rates of early-stage entrepreneurial firms may not be a driver of economic efficiency, and that new product entrepreneurship and improvement-driven entrepreneurship enhances economic efficiency. Bruns et al. (2017) used a regional cross-section growth regression model to show that only high growth entrepreneurship produced a significant correlation with long run economic growth.

It has been shown that entrepreneurial ecosystem’s exhibits all the key processes, associated properties and the enabling conditions to be classified as exhibiting complex behaviour. The use of a CAS lens to evaluate the **characteristics and interrelationships of the dynamic interactions between the different elements and processes in an entrepreneurial ecosystem that contain high growth enterprises** has thus been justified.

2.7 The Adaptive cycle

In order to understand the dynamic interactions between the elements and processes in a CAS within a single domain of scale, an adaptive cycle is used (Allen, Angeler, Garmestani, Gunderson, & Holling, 2014). A system in an adaptive cycle, shown in Figure 1, transitions through four phases, namely the growth phase (r), conservation phase (k), release phase (Ω) and the reorganisation phase (α). The adaptive cycle has been successfully adopted in social sciences research to investigate the resilience of social systems (Fath, Dean, & Katzmair, 2015). To add credibility to the use of this ecological model to study entrepreneurial ecosystems, a social phenomenon, key adoptions applied by social sciences research will be incorporated into the study.

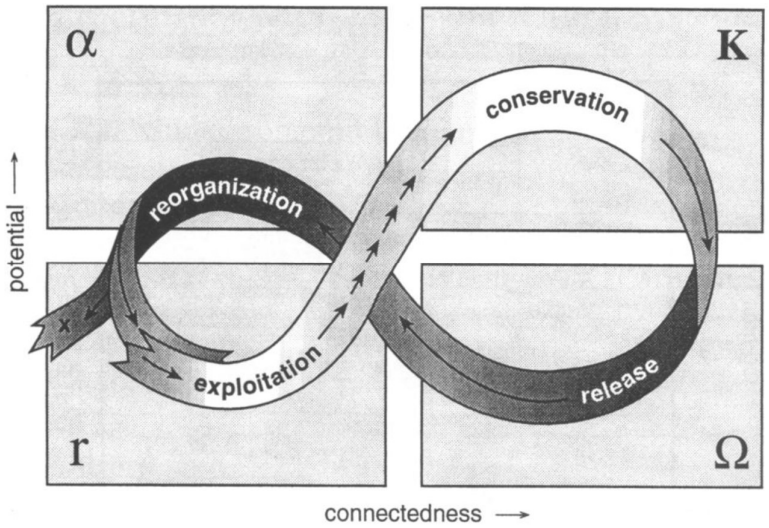

Figure 1. Graphical representation of the four system functions and the flow of events of an adaptive cycle (Holling, 2001)

Each of the four phases of the adaptation cycle is characterised by the occurrence of three key dimensions. Firstly, each phase will have the potential to contain different amounts of resources that will be accessible to the ecosystem. From an entrepreneurial ecosystem point of view, resources would refer to the human capital, financial capital, knowledge and experience, and market leads (Spigel & Harrison, 2018). Secondly, each phase will have different levels of connectedness amongst the elements and processes in the ecosystem. From an entrepreneurial ecosystem point of view, connectedness would refer to the level of interactions and strength of relationships amongst the different elements; of policy, culture, support, finance, human capital, and markets; in the ecosystem. Thirdly, each phase will have different levels of resilience, meaning that the ecosystems ability to adapt to changing environmental conditions will vary amongst the different phases of the adaptive cycle. From an entrepreneurial ecosystem point of view, resilience will refer to the ability of the ecosystem to adapt and either retain or grow its structure in the presence of endogenous or exogenous demand shocks.

The exploitation, or growth phase, (*r*) involves the acquisition of resources for rapid growth and development. The system uses these resources to create structures, pools and flows. As the acquisition of resources increases, the connectedness amongst the elements and processes in the ecosystem also increases. The exploitation phase, is also where the ecosystem emerges, hence the resilience of the ecosystem is high since the resources are being acquired and the ecosystem continues to develop its structure and processes. The transition from the exploitation to the conservation phase is characterised by long periods of slow accumulation of resources. Holling (2001) mentioned for social systems, the potential of

accumulating resources is influenced by the social networks, human capital, and mutual trust which are developed over time and integrated during the transition from the exploitation to the conservation phase. An entrepreneurial ecosystem in this phase could be characterised by the ease of access to financial resources, a high level of new venture creation and a low level of venture failures, availability of support institutions, with stronger support from the private sector in the form incubators and accelerators.

The conservation phase (*k*) involves the accumulation of resources, over a longer period of time than the growth stage, which may enhance the rigidity of the system as negative feedbacks exceed positive feedbacks with the connectedness amongst the elements and processes in the ecosystem may become overconnected, which will lead to the loss of resilience and eventual collapse of the system. This stage promotes innovation amongst the elements in the system, collectively creating networks and maintaining information flows due to the lack of resources. The collapse of the system could be as a result of an endogenous or exogenous shock, which the ecosystem is unable to adapt too due to its rigidity An entrepreneurial ecosystem in this phase could be characterised by the lower availability of financial resources due to lower levels of supply and risk aversion by finance providers, a growing amount of venture failures but a larger amount of new venture creation, availability of support institutions in the public sector and the private sector.

The release phase (Ω) involves the rapid release of the accumulated resources during the conservation phase. During this phase the self-organising and emergent behaviour of the system determines its ability to successfully transition to the reorganisation phase through learning, adaptive capacity and reorientation of the system. The transition from the release to the reorganisation phase is characterised by the rapid period which allows for innovation through opportunity creation. All of the accumulated resources are released and the connectedness amongst the elements and processes in the ecosystem dissolves and becomes low. An entrepreneurial ecosystem in this phase could be characterised by difficulties in receiving financial support, larger amount of venture failures mainly due to reduced levels of new venture creation, declining level of support from social institutions particularly from the private sector, due to their involvement in other roles in the entrepreneurial ecosystem.

The reorganisation phase (*α*) involves a rapid reorganisation of system elements. This phase allows for novel recombination which could lead to a new set of characteristics of the processes and structures, or the system could reorganise to its initial state, however it will not be able to retain its exact original structure. The success of the system to avoid collapse is

characterised by its ability to transition from the reorganisation to the exploitation phase. An entrepreneurial ecosystem in this phase could be characterised by the scarcity of financial resources, larger amount of venture failures mainly due to low levels of new venture creation and lack of support from social institutions particularly from the private sector.

2.7.1 Potential for resources

Ozdemir, Moran, Zhong, & Bliemel (2016) mention that certain conditions must be met for entrepreneurs to pursue the acquisition of resources. Firstly, the resource required must a demand of the entrepreneurs, absence of which nullifies the need for the entrepreneur to interact in the ecosystem. Secondly, the resource needs to be accessible, meaning the resource needs to be realistically attainable by the entrepreneur by identifying an entrepreneurial actor or process which may allow the acquisition of the resource. Thirdly, the entrepreneurial actor, must be willing and able to exchange the resource with the entrepreneur. If these three conditions are not met, then the entrepreneur will not interact with the entrepreneurial ecosystem.

Sullivan & Ford (2014) showed that entrepreneurs in the start-up phase of their enterprise are determined to gain access to large social network with a diverse set of resources, this is in anticipation of their varying needs of resources as their enterprise develops into other stages of development such as the growth, maturity and decline phase. Connecting to larger social networks with a diverse set of resources also reduces the vulnerability of the entrepreneur due the dependency on a small amount of limited resources. In addition, entrepreneurs in the star-up phase of their enterprise gain access to large social networks with diverse resources by developing weak ties with resource providers. They then leverage of these weak ties by gaining access to new weak ties which could provide access to a new set of resources that is needed. These network ties are then strengthened as the entrepreneur reaches the scale-up phase of the enterprise and need for resources becomes more focused.

Newbert & Tornikoski (2013) has shown the importance of creating strong network ties rather than weak ties, and that early-stage entrepreneurs can successfully acquire resources at below-market cost and avoid exploitation by resource providers who scarce resources of need by the entrepreneur, by harnessing relational or structural ties with gatekeepers of the needed resources. The findings indicate that rather than interacting with large networks with a diverse set of resources, entrepreneurs should focus on resource providers who they have frequent contact with, have past experiences of resource exchange, and/or have an aligned set of values, beliefs and behaviours. Relational embedded ties with such resource providers will

ensure that the exchange of resources is governed by trust rather than contracts, and structural embedded ties will ensure that the exchange of resources will be characterised by reciprocal rather than profit maximising behaviour.

The researcher believes that the strategy taken by entrepreneurs to acquire resources from a social network, will be dependent on the amount of resources available in the entrepreneurial ecosystem. In ecosystems, where there is an abundant potential of resource potential, entrepreneurs are able to form weak network ties within a large social network to benefit from diverse set of resources. However, in ecosystems, where the potential of accumulated resources is low, then entrepreneurs should focus on building strong network ties with resource providers that they have prior experience interacting with and/or share common personal attributes.

Hanlon & Saunders (2007) has shown that entrepreneurs require both tangible and intangible resources to remain sustainable, and both these types of resources require different levels of interaction to acquire. Most of the support needed by entrepreneurs is in the form of intangible support such as emotional support, and these interactions occur more frequently than acquiring tangible resources such as financial capital. The main reason for the high frequency of interaction to acquire intangible resources, is due to the larger amount of resource providers that can provide resources such as emotional support when compared to tangible resource providers. Intangible support is valuable for entrepreneurs particularly during the start-up phase of the enterprise, since the transactional costs of attaining intangible support is low when compared to tangible support such as financial capital.

However, entrepreneurs decision to acquire intangible support is not solely due to the lower costs of acquisition, entrepreneurs are focused on receiving intangible support of high quality, hence not all interactions will provide value to an entrepreneur.

2.7.2 Connectedness

Rauch, Rosenbusch, Unger, & Frese (2016) state that enterprises change the cohesiveness of their networks according to the stage of their business cycle, during the start-up phase, enterprises are dependent on small and cohesive networks. However, (Semrau & Werner, 2014) adds an additional variable, of time and energy, that influences the researcher's view by mentioning that while nascent entrepreneurs invest time and energy in growing their networks and improving the quality of their relationships with network actors to access required resources, this investment in time and energy will eventually lead to diminishing resource returns as the enterprise develops.

When entrepreneurs successfully scale their enterprise, enterprises are dependant on larger, more diversified networks, and reallocate their resources to these networks. From this we can infer that depending on the availability and accessibility of resources, firms will align to network structures based on their resource and information requirements.

Watson (2007) showed that network intensity, measured by the frequency of interaction, is more important for ensuring enterprise survival rather network diversity. Enterprise survival was also associated with both formal and informal networks, where enterprise growth was associated only with formal networks. Mason & Harrison (2006) state the high growth enterprises who have exited their enterprise through a successful merger or acquisition, makes use of their newly acquired wealth in combination with the knowledge and experience accumulated, to form a new enterprise or to support new enterprises as angel investors or venture capitalists. However, their experiences and perceptions gained in the region will affect their decision on whether they will re-invest their wealth in the region.

Kuhn & Galloway (2015) has shown the positive effect that peer-to-peer 'soft' support has on the success of enterprises. Entrepreneurs who joined peer networks had more peer assistance than those not part of peer networks, which was found to be a predictor of enterprise performance, with entrepreneur's part of peer networks performing more successfully, where success was measured by the level of organic growth sustained by the enterprise. Peer networks are found to harness the development of trust and plays an effective role in fostering mutual support and cooperation in a competitive environment. It was also found that entrepreneurs join different peer networks to satisfy different needs.

The importance of using social networks has also shown to influence decisions made by venture capitalists when deciding on the enterprises to provide venture capital. Wuebker, Hampl, & Wuestenhagen (2015) examined the role that social ties and status hierarchies play in the decision making of venture capitalists. It was found that venture capitalists decision making is more strongly influenced by personal ties rather than the relative status of other venture capital funds supporting the same enterprise. However, the over-reliance on strong personal network ties has shown to inhibit the access to new information and venture capitalists are faced with a trade-off between accessing new information and mitigating risk and uncertainty achieved through credible and accessible relationships.

2.8 Conclusion

The literature review started by defining the role of high growth entrepreneurs in contributing to economic growth, and the requirements needed to be taken to create, develop and sustain high growth enterprises through enabling entrepreneurial ecosystems. The concept of entrepreneurial ecosystems was also reviewed and the role of how each element supports high growth enterprises has been defined. It was found that academic research on entrepreneurial ecosystems remains under-theorised, and in particular there is a lack of understanding of the characteristics and interrelationships of the dynamic interactions in an entrepreneurial ecosystem that contains high growth enterprises. Due to the lack of a theory base, ecological concepts and theories were reviewed to assess its applicability to understanding the dynamic behaviour of entrepreneurial ecosystems. It was found that entrepreneurial ecosystems display the characteristics of complex adaptive systems (CAS) and thus the adaptive cycle can be used to understand the characteristics and interrelationships of the dynamic interactions between the elements and processes in an entrepreneurial ecosystem that contains high growth enterprises. These elements include policy, finance, support, human capital, culture and markets. The processes involve the flow and exchange of resources entering, exiting and flowing within the entrepreneurial ecosystem. During each stage of the adaptive cycle, the level of resources, connectedness of the elements and the adaptability of the ecosystem varies, the characteristics and interrelationships of these dynamic interactions needs to be determined.

CHAPTER 3: RESEARCH QUESTIONS AND PROPOSITIONS

The literature review on entrepreneurial ecosystems identified a broad consensus amongst academic scholars on the lack of theoretical development in explaining the phenomena. Academic scholars in the entrepreneurship field have made numerous calls for theoretical contributions in understanding the dynamics of the interactions amongst the elements and processes in an entrepreneurial ecosystem (Acs et al., 2017; Brown & Mason, 2017; Mack & Mayer, 2016). The Entrepreneurship and Regional Development Journal has recently called for academic articles that provides insights into the dynamics of entrepreneurial ecosystems based on a solid theoretical foundation rather than empirical findings which are static and applicable only to a particular geographic region. The journal has identified a key theme that is missing in academic literature and needs to be addressed, which will be the focus of this research project. This theme is based on the understanding of the interactions in the entrepreneurial ecosystem, specifically how the different elements and processes dynamically interact within an entrepreneurial ecosystem (Audretsch et al., 2018).

The unanswered questions in academic literature have been identified in line with the above requests, which has presented an opportunity for contributing to the academic research on entrepreneurial ecosystems. This research seeks to fill the entrepreneurial knowledge gap and contribute to practitioners understanding the of the entrepreneurial concept by answering the following research question:

What are the characteristics and interrelationships of the dynamic interactions between the different elements and processes in an entrepreneurial ecosystem that contain high growth enterprises?

The research propositions posited in the research are:

Research Proposition 1: The commitment of financial and support service providers in creating opportunities for high growth enterprises to come together will be indicated in the level of development of an entrepreneurial ecosystem.

Research Proposition 2: Social networks strengthen the entrepreneurial ecosystem by connecting the different actors and improving the exchange of resources (“feedbacks”).

Research Proposition 3: Positive feedbacks of entrepreneurial resources will improve the success of high growth enterprises by benefiting from the human capital provided by past and present entrepreneurial ventures.

Research Proposition 4: Considering endogenous demand side shocks, more of the material attributes (Institutional and technological infrastructure, financial and capacity development providers) accumulated by well-functioning ecosystems will remain as opposed to the case for poorly-functioning ecosystems during the 'release' phase of the adaptive cycle.

CHAPTER 4: RESARCH METHODOLOGY

4.1 Research method and design

Philosophy

An interpretivist research philosophy was adopted for this study. Defined as a philosophy to study the social phenomenon between actors in their natural environment (Saunders, Lewis, & Thornhill, 2016), this philosophical view is well suited in the study of entrepreneurial ecosystems. The research seeked to understand the roles and experiences of the different social actors acting individually or as a collective within an entrepreneurial ecosystem, the results of which was used to create a conceptual framework to assist the actors in creating, developing and sustaining high growth enterprises. Entrepreneurial ecosystems are a social phenomenon (Colombelli, Paolucci, & Ughetto, 2017; Goswami et al., 2018; Spigel & Harrison, 2017), which is not governed by scientific laws, which requires the study of human beings as opposed to material objects that don't possess measurable feelings and attitudes (Saunders et al., 2016). Hence adopting a positivist or realist philosophy would not have been as beneficial to achieving the objective of the study in comparison to an interpretivist philosophy.

Approach

A combination of both a deductive and inductive approach was employed for this research, referred to as a hybrid approach, by using an established theoretical construct based on biological ecosystems to assist in making sense of the findings which was used to develop theory and a conceptual framework on entrepreneurial ecosystems. (Saunders, M. N. K., Lewis, & Thornhill, 2016) explain the advantages of using a hybrid approach, particularly the addition of a deductive component which avoids making logic leaps and false assumptions when interpreting the data completely inductively, which may not lead to the emergence of relevant theory on the dynamic interactions of entrepreneurial ecosystems. (Yin, 2016) mentions the attractiveness of interweaving the use of both concepts and theories in qualitative studies where the concepts being used may not necessarily be a representation of grand theory, and highlights the benefit of using the inductive approach by allowing particular processes or events occurring in the entrepreneurial ecosystem to drive the creation of broader concepts that may have not been eluded to by the original hypotheses. (Autio et al., 2017; Brown & Mason, 2017) show that entrepreneurial ecosystems lack a rigid theoretical foundation that explains how the characteristics and interrelationships of the processes enable an entrepreneurial ecosystem by creating and supporting high growth enterprises. Spigel (2017) state that entrepreneurial ecosystems act as a conceptual umbrella that encompasses various theories on the geography of entrepreneurship rather than theory that explain the creation and growth of entrepreneurs in general. From this it can be inferred that context does

matter in the study of entrepreneurial ecosystems, and that adopting both a deductive and inductive approach is valuable in studying ecosystems in South Africa, rather than using existing entrepreneurial ecosystem theory from academic literature which suited a particular region of study and presented the results as generalisable findings. These relationships were guided by the ecological phenomena discussed during the literature review which helped define the research propositions.

South Africa has a diverse culture; hence it is important to understand why ecosystem actors make the decisions they do, in order to produce a valuable framework from which they could benefit.

Methodological choices

A multi-method qualitative study was performed. A qualitative approach was taken since the research seeked to understand, through interviews and archival data, the roles and experiences of the different social actors acting individually or as a collective, primarily from their perspective. This represents non-numeric data where words, pictures and videos represented data (Saunders et al., 2016). A multi-method approach was taken since two data collection techniques were used. In addition to performing semi-structured interviews, archival data was gathered to triangulate the findings and add credibility to the research (Goswami et al., 2018). A single data analysis technique was sufficient; hence a mixed-method approach was not needed.

Purpose of research design

An exploratory study was conducted in this research. This approach was well suited for studying new phenomena, where the initial research focus is broad and gets narrower as the research progresses (Saunders, Mark & Lewis, 2012). Since the entrepreneurial ecosystem concept is relatively new, under-theorised and widely flexible in definition, interviewing the relevant actors was the primary method for gathering information about the entrepreneurial ecosystem (Goswami et al., 2018; Theodoraki, Messeghem, & Rice, 2017). Hence a descriptive, explanatory or a combination of studies was discarded due to the lack of academic information to describe and explain causal relationships.

Strategy

The research employed the multiple case study strategy, which is most appropriate for getting answers from social actors on the question of ‘why’ they make certain decisions and exhibit behaviours that influence the entrepreneurial ecosystem. Theodoraki et al. (2017) state that

the outcome of using a multiple case study approach is to identify and build on general, well-adapted theories that describe the concept of ecosystems. Saunders et al. (2009) state that a well-constructed case study strategy could lead to challenging an existing theory and provide a new avenue of research questions. As stated by Saunders & Lewis (2012), in order to generalise the findings of the research and limiting case biases, a multiple case study strategy should be adopted. The multi-case study approach involved two regional entrepreneurial ecosystems that were associated with high growth enterprises in South Africa.

Time horizon

A combination of both cross-sectional and longitudinal research was done. Cross-sectional research gives a snapshot view, involving the study of a certain phenomenon at a particular point in time (Saunders et al., 2016). Longitudinal research offers the advantage of studying the development of phenomenon over a period. Entrepreneurial ecosystems are known to evolve over time, changing with it are the characteristics and interrelationships of different elements and processes in the ecosystem (Autio et al., 2017; Brown & Mason, 2017; Mack & Mayer, 2016; Spigel & Harrison, 2017). Due to the limited time available to complete the research, interviews of actors in the ecosystem could only be taken over a three-month period, giving a snapshot view of the entrepreneurial ecosystem at a particular time. However, to obtain a longitudinal view of the research, archival data was used to study the ecosystem over an 18-year period to track threads of activity and their intersection (Thompson et al., 2018).

Techniques and procedures

Data was collected by using a combination of interviews and archival data. Semi-structured interviews provided both a retrospective and real time account by the actors experiencing the entrepreneurial ecosystem phenomenon. It also acts as an engaging form of research for participants. The open-ended interview questions allowed the participants to openly share their experiences in their own view, and allows the interviewer to probe these views which will enrich the quality of the data obtained (Saunders et al., 2016). The semi-structured interviews was also guided into areas not previously considered by the interviewer but was beneficial in achieving the research objective. Semi-structured interviews allow for the preparation of a list of themes and questions, all of which was not used in all interviews conducted in the sample depending on the actor's role within the entrepreneurial ecosystem. This feature enhanced the benefits of using this instrument in the study since the various actors within the entrepreneurial ecosystem play different roles in their involvement with high growth enterprises, and were asked questions covering a range of topics with some of the questions only applicable to certain actors, such as entrepreneurs (Saunders, Mark & Lewis, 2012).

Archival data which makes use of administrative records and documents which focuses on past events was used to supplement the primary data collection method of conducting interviews (Saunders, Mark & Lewis, 2012). The collection of archival data, from credible sources, enabled the development of an expanded and longitudinal view of the relevant actors and processes within the ecosystem over an 18-year period in South Africa.

This method also allowed for the triangulation of the data collected, which is imperative when conducting a multiple-case study strategy with the objective of generalising the findings of the research.

4.2 Population

The population is the complete set of cases from which a sample is taken (Saunders et al., 2016), which includes all entrepreneurial ecosystems in South Africa that contain high growth enterprises. Actors involved in the entrepreneurial ecosystem include entrepreneurs, high growth enterprise workers, mentors, advisors, dealmakers, educators/university representatives, financial and capacity development providers and existing firms. These actors can draw on ecosystem resources to catalyse entrepreneurial growth in creating, supporting and developing high growth entrepreneurial ventures in South Africa. However, these actors represent individual elements in an ecosystem. To understand the characteristics and interrelationships between these elements, the ecosystem needs to be viewed as a system within which these interrelations take form.

4.3 Unit of analysis

The unit of analysis comprised of two levels, falling within a nested arrangement. On a broader level, the unit of analysis is the entrepreneurial ecosystem. On a narrower level, the unit of analysis are actors involved in high growth enterprises. Auerswald & Dani (2017) state that entrepreneurial ecosystems should be viewed as a higher-level infrastructure that enables interactions between the entrepreneurial actors and institutions. In order to understand the interrelationships within an ecosystem, this higher-level infrastructure had to be analysed. To understand the characteristics between the different elements, the narrower level entrepreneurial actors and institutions needed to be analysed. The two levels of analysis, strengthened the relationship between the level of data collection units and the topic of study which is ‘Enabling entrepreneurial ecosystems to create, develop and sustain high growth enterprises’ (Yin, 2016).

4.4 Sampling method and size

Non-probability, purposive sampling was used to select entrepreneurial ecosystems and its associated actors for the study. Non-probability sampling was chosen due to the absence of a complete list of all entrepreneurial ecosystems and associated actors in South Africa and the adoption of a multiple case study approach.

Information rich case studies needed to be formulated to answer the research question and build the theoretical framework, statistically choosing a random sample would not have provided as relevant data as compared to using non-random sampling.

Purposive sampling allowed for the selection of the most relevant samples with plentiful data (Yin, 2016), similar to the approach taken by Goswami et al. (2018) that looked to involve a broad set of entrepreneurial actors in the Bangalore ecosystem. In particular, a maximum variation sampling was beneficial in describing and explaining the key themes within the entrepreneurial ecosystem (Saunders et al., 2016), as they are known to represent multiple overlapping sets of attributes and institutions that support entrepreneurial activity (Spigel, 2017). Choosing samples based on their ease of accessibility, particularly in entrepreneurial ecosystems which contain a limited amount of data, could contribute to an unknown degree of incompleteness due to the likeliness of containing a lesser amount of informative sources when compared to purposive sampling (Yin, 2016). Snowball sampling was also used, where initial contacts helped identify other actors whom they knew to be engaged in high growth enterprises, these actors had to meet the criteria of living or working in South Africa and been engaged in entrepreneurial ecosystems that created or supported high growth enterprises (Thompson et al., 2018).

The sample size for non-probability sampling is ambiguous and was dependent on the amount of useful, credible data gathered within a limited timeframe of three months, that can satisfy the research objectives (Saunders et al., 2016). The article by Thompson et al. (2018) on regional entrepreneurial ecosystems conducted 40 interviews before reaching saturation across 3 regions in Canada over a two year period, The article by Goswami et al. (2018) on the affect that accelerators have on entrepreneurial ecosystems conducted 51 interviews before reaching saturation across Bangalore over a two period and the article by Spigel et al. (2017) on the relational organisation of entrepreneurial ecosystems conducted 71 interviews before reaching saturation across Seattle over a two year period. Taking the average amount of interviews conducted over the timeframe and considering the time limitations in this study, 14 interviews were conducted in Gauteng and the Western Province over a three month period.

Based on the uniqueness of the social, material and cultural attributes present in different geographic regions and the various roles likely to be played by actors in an entrepreneurial ecosystem, in each region 7 interviews were conducted comprising of participants involved in the following roles in the ecosystem:

- Three high growth enterprises
- One support service provider that support high growth enterprises
- One financial development provider that support high growth enterprises
- One entrepreneurial mentor that support high growth enterprises
- One academic institution that support high growth enterprises

Data saturation was successfully achieved with the 14 interviews done across two regions. Table 1 shows a summary of the respondents and their associated codes, to ensure maintain the confidentiality of the respondents.

Table 1 – Case summary and respondent information

Role of entrepreneurial actor	**Location**	**Code**	**Number of years active in the ecosystem**	**Industry**
High growth enterprise	Johannesburg	EGP1	18	Skills Development
High growth enterprise	Johannesburg	EGP2	7	Education
High growth enterprise	Johannesburg	EGP3	9	Technology
Support service provider	Johannesburg	SGP1	15	Various
Finance provider	Johannesburg	FGP1	18	Various
Former high growth enterprise	Johannesburg	FEGP1	17	Technology
Academic institution	Johannesburg	PGP	16	Various
High growth enterprise	Cape Town	ECPT1	6	Financial Technology
High growth enterprise	Cape Town	ECPT2	5	Technology
High growth enterprise	Cape Town	ECPT3	8	Technology
Support service provider	Cape Town	SCPT1	6	Various
Finance provider	Cape Town	FCPT1	9	Various
Former high growth enterprise	Cape Town	FECPT1	15	Agriculture
Academic institution	Cape Town	PCPT	5	Various

4.5 Measurement instrument

Semi-structured interviews allow for the preparation of a list of themes and questions, all of which may not be used in all interviews conducted in the sample depending on the actor's role within the entrepreneurial ecosystem (Saunders et al., 2016).

A semi-structured interview guide was created, which is presented in Appendix 1, containing open-ended interview questions based on prior research on entrepreneurial ecosystems whilst adding an ecological perspective to the nature of the questions. The interview guide was arranged into six themes, which were flexible and allowed participants to contribute additional dimensions to the interview not previously considered by the researcher. Firstly, participants were asked about their backgrounds, only if this data was not already accessible using archival data, which included their past and present experiences on an individual and organisational level (Thompson et al., 2018). This theme allowed for the creation of relational comparisons between different actors in the ecosystem (Neumeyer et al., 2017). Secondly, participants were questioned about their views on the entrepreneurial ecosystem and how it affects the performance of high growth enterprises (Spigel, 2017). This allowed for a cognitive assessment of the actors within the ecosystem. Thirdly, participants were required to mention the conditions for creating, developing and sustaining high growth enterprises in the ecosystem. This theme allowed for the identification of the formal and informal constitutive norms that influence the ecosystem. Fourthly, participants were asked to explain their interactions with other actors in the ecosystem and their view on whether it hinders or strengthens the ecosystem. This theme identified the social interactions and its underlying characteristics within the ecosystem. Fifthly, participants were asked about the present role played by previous successful and failed high growth enterprises in the ecosystem. This theme assessed the strength of the feedback element that characterises biological ecosystems and how it influences the entrepreneurial ecosystem. Lastly, participants were asked counterfactual questions on what they think should change within the ecosystem. This is an open-ended theme which allowed participants to identify elements or processes within the ecosystem which was not considered by the researcher.

The major concerns of data quality reliability of semi-structured interviews involve interviewer, interviewee bias and generalisation. The main concern of data quality validity is the extent to which the researcher is able to interpret a meaning that the participant intended through communication of the participants knowledge and experience (Saunders et al., 2016). Data reliability was increased by using the triangulation method (Colombelli et al., 2017; Hunt & Kiefer, 2017; Theodoraki et al., 2017) which involved combining different data sources and techniques to increase the validity of the results. The semi-structured interview data was

complemented by secondary archival data on the entrepreneurial ecosystem and its associated actors. Since data was collected from multiple actors in the same roles within the ecosystem, multiple-perspective triangulation was achieved which reduces the bias of the interviewee and strengthens the validity of the findings.

Interviewees were also given a consent letter which was completed before the start of the interview, which further reduced the bias of the interviewee since there was assurance that information provided will not be disclosed to unintended groups or individuals. In addition, supervisor meetings were conducted during which the data analysis process and results interpretation was discussed to minimise researcher bias (Theodoraki et al., 2017). Since a multi-case study approach with at least two cases was adopted, the generalisation of findings from a South African perspective was less of a concern.

4.6 Data gathering process

Gaining access and securing participants for qualitative research is seen as a pre-requisite for gathering and analysing the data (Peticca-Harris, deGama, & Elias, 2016). A dynamic, non-linear process model of gaining access to data, developed by Peticca-Harris et al. (2016) was used in the study. Firstly, buy-in and support was received from key stakeholders such as the MBA Research Ethics Committee of GIBS who provided ethical clearance on the research project. The research supervisor also assisted in making decisions on the scope of the research project to enhance its theoretical contribution. This element could show clearly if the current research plan was not achievable and the process of attaining access to data could be stopped. Secondly, using non-probability, purposive sampling gives direction on the selection criteria of participants. These criteria was used to help identify the potential participants who could provide data to assist in answering the research question. The Aspen Network of Development Entrepreneurs (ANDE) had been identified as one of the key resources, willing to assist, in identifying potential participants for the research. ANDE has identified and mapped entrepreneurial support organisations in the South African entrepreneurial ecosystem, and has access to 340 organisations that participate in the entrepreneurial ecosystem. Thirdly, informants were obtained and contacted through ANDE and other support service organisations, acting as an intermediary, by providing credible informants that meet the selection criteria of the research. Using an intermediary, posed an additional consideration of not tarnishing the intermediary's reputation should there be problems during the interactions with the participant. Fourthly, interacting with the participants during the data collection process. Meetings were arranged with the participants, where on average a 60-minute interview was conducted. The scheduling and logistics of the meeting posed a few problems, however flexibility and compromise were offered to participants to

accommodate their needs. This involved the researcher travelling, from Gauteng, to the Western Cape to perform face-to-face interviews with respondents, many of which had to cancel the interview due to unforeseen circumstances suddenly arising. Prior to the commencement of the interview, an informed consent letter was signed by the research supervisor, researcher and participant being interviewed. This gave participants the opportunity to withdraw from the interview once they were aware of the parameters of the study.

Once these criteria were met, the face-to-face interviews commenced where data was captured from the participants. All interviews were audio recorded, and the audio recording was uploaded to a secure web-based server, in addition to being copied onto an external memory device for backup. The main advantages of using an audio recorder as the preferred tool to capture the data, is that it focusses the attention of the interviewer on the questions being asked, and being able to re-listen to the interview (Saunders et al., 2016). The major disadvantage is the possibility of a technical problem occurring with the audio recording, especially if it is only found out when the audio files are being transcribed, as the interview would have already ended. To avoid the possibility of a technical problem, a cellular phone was used as a backup device to record the interviews.

Before the interviews were conducted on the sample, a pilot test was conducted to test the interview technique and check whether the questions were well understood, were not leading and will lead to the collection of satisfactory data. This ensured that the interviewee is presented with well suited questions and the timeframe of the interview could be realistically predicted and communicated to the interviewee (Saunders, Mark & Lewis, 2012).

Archival data was gathered using websites, online news sources, social media, policy documents and industry reports. The collection of data from these sources enabled the development of an expanded view of the relevant actors and processes within the ecosystem since the beginning of democracy in South Africa.

4.7 Analysis approach

Qualitative data analysis involves analysing non-numeric data, that has not been quantified and can result from all types of research strategies (Saunders et al., 2016). Interview transcripts and archival data such as policy documents meet these qualitative data requirements. The data was arranged into first and second order categories which led to a data structure at the end of the analysis (Gioia, Corley, & Hamilton, 2013). The data analysis process was conducted in four steps (Theodoraki et al., 2017). Firstly, the audio recordings

were transcribed verbatim and transferred onto Atlas.ti, a computer program used for qualitative analysis. Transcribing audio recordings are known for being extremely time consuming and can lead to transcription errors (Saunders et al., 2016). Due to the limited amount of time to conduct the research, the services of a professional audio transcriber were acquired to transcribe the 20 semi-structured interviews.

This may lead to the lack of familiarisation of the data, hence the audio transcripts were read, and the audio recordings were then listened to. This process ensured that the recordings had been transcribed correctly and allowed the researcher to gain familiarity with the data. The archival data was loaded electronically onto Atlas.ti, where the data was numbered, categorised and cleaned for any typographical errors that may have been caused.

Secondly, the data was open coded which involved the disaggregation of the data. This first order analysis (Gioia et al., 2013), creates concepts by separating data into raw data blocks and delineating a conceptual name to the data block (Corbin & Strauss, 2008). Thirdly, a second order analysis was done which involved taking a theoretical approach by identifying relationships between the concepts realised during open coding. These relationships were guided by the ecological phenomena discussed during the literature review which helped define the research propositions. This process resulted in themes which explained the characteristics and interrelationships of the dynamic interactions between the different elements and processes within an entrepreneurial ecosystem and why they occur. Concepts that had no association or relevance to the ecological concepts and those concepts that stood out due to their relevance to a new domain were identified. A deeper categorisation of the second order themes was performed to produce aggregate dimensions. This refinement and detailed categorisation of the data assisted in creating a well formulated data structure. Fourthly, once the first order concepts, second order themes and aggregate dimensions were identified, a data structure was then built. This data structure allowed for the creation of the exploratory theory, by comparing the data structure to the ecological concepts and models described in the literature review and identifying new relationships and concepts. This led to a deductive element of the research strategy where existing literature acted as a guide to develop theory, culminating in an hybrid (deductive and inductive) research analysis approach.

Biases were expected to occur particularly during the first order coding process, where the researcher may have had a different interpretation of the transcripts. To limit this bias, an independent coder was used to verify the interpretations by coding parts of the data and assessing the similarities (Gioia et al., 2013).

4.8 Limitations

Due to the time constraints of performing the research, conducting more than 20 interviews was not be possible hence there was a possibility that data saturation may not be reached, however after completing the interviews it was found that data saturation was reached. It was also preferable to conduct the multiple case study approach involving three regional ecosystems, however due to the scarcity of high growth enterprises and associated support service providers in other regions apart from Gauteng and Western Province in South Africa, analysis of a third regional ecosystem was not possible. Using an inductive, theory building strategy requires a rigorous analysis process involving the researcher which will be time consuming, and the results of the analysis maybe of little significance (Saunders et al., 2016). Ecosystems are seen as an evolutionary phenomenon, that develops and transforms over time.

A longitudinal study, achieved by interviewing actors over a period, would be beneficial in understanding the characteristics and interrelationships of entrepreneurial ecosystem over time rather than a snapshot view taken by implementing a cross-sectional study.

When using purposive sampling, the samples selected are not considered as statistically representative of the total population (Saunders et al., 2016). This brings into question the generalisability of the findings and theory. Snow ball sampling was also used, biases could have creeped in when the participants provided potential actors that have similar characteristics to themselves. This may have led to a homogeneous sample which further questions the generalisability of the findings. In addition, by making use of this sampling technique, the role of ASPEN as an intermediary was removed. The researcher had to determine the credibility of and make contact with the potential participants without the assistance of ASPEN. Snow-ball sampling was only used in cases where the list of potential participants recommended by ASPEN had been exhausted, and data saturation had not been reached.

The use of secondary data brings an element of uncertainty on the quality, reliability and validity of the data. The secondary data may have been compiled for a different purpose to that of the researcher, incorporating the authors biases, culture, predispositions and ideal (Saunders et al., 2016). This will further question the generalisability of the findings of the research. However, the benefits offered by using secondary data to provide a longitudinal view of actors within the entrepreneurial ecosystem outweighs its limitations. Initiatives were taken to ensure the validity and reliability of the data by using credible sources.

4.9 Ethical considerations

This research complied, in its entirety, to the ethical conduct requirements outlined by the MBA Research Ethics Committee of GIBS who provided ethical clearance on the research project. A copy of the ethical clearance certificate can be obtained from Appendix 3.

Respondents were obtained and contacted through ANDE and other support service organisations and platforms, acting as an intermediary, by providing credible informants that meet the selection criteria of the research. Using an intermediary, posed an additional consideration of not tarnishing the intermediary's reputation should there be problems during the interactions with the participant. Interacting with the participants during the data collection process, introduced additional ethical considerations. Prior to the commencement of the interview, an informed consent letter was signed by the research supervisor, researcher and participant being interviewed. This gave participants the opportunity to withdraw from the interview once they were aware of the parameters of the study. Meetings were arranged with the participants, where on average a 45-minute interview was conducted. The scheduling and logistics of the meeting posed a few problems; however flexibility and compromise were offered to participants to accommodate their needs. This involved the researcher travelling, from Gauteng, to the Western Cape to perform face-to-face interviews with respondents, many of which had to cancel the interview due to unforeseen circumstances suddenly arising.

CHAPTER 5: RESULTS

5.1 Introduction

This chapter contains the data analysis and relevant coding in the form of a cross-case analysis and synthesis of the data in relation to the research hypotheses for the study.

The chapter firstly positions the two cases in relation to each other, particularly in terms of the entrepreneurial culture and strengths of the entrepreneurial networks. This case-level data is also presented in a cross-case format, summarising the analysis across the cases, and showing where divergence and convergence was found.

5.2 Case Level Summaries

As mentioned in Chapter 4 on the execution of the study, two entrepreneurial regions were included as cases for the multiple-case study. The first region is Gauteng and the second in the Western Cape. Figure 2 shows the combination of entrepreneurial actors in the individual case studies. The numbers in the diagram are used to give the number of high growth enterprises interviewed (E=6), the number of financial development providers (F=4), the number of support service providers (S=4), the number of entrepreneurial mentors (M=4), and the number of academic institutions interviewed (A=2).

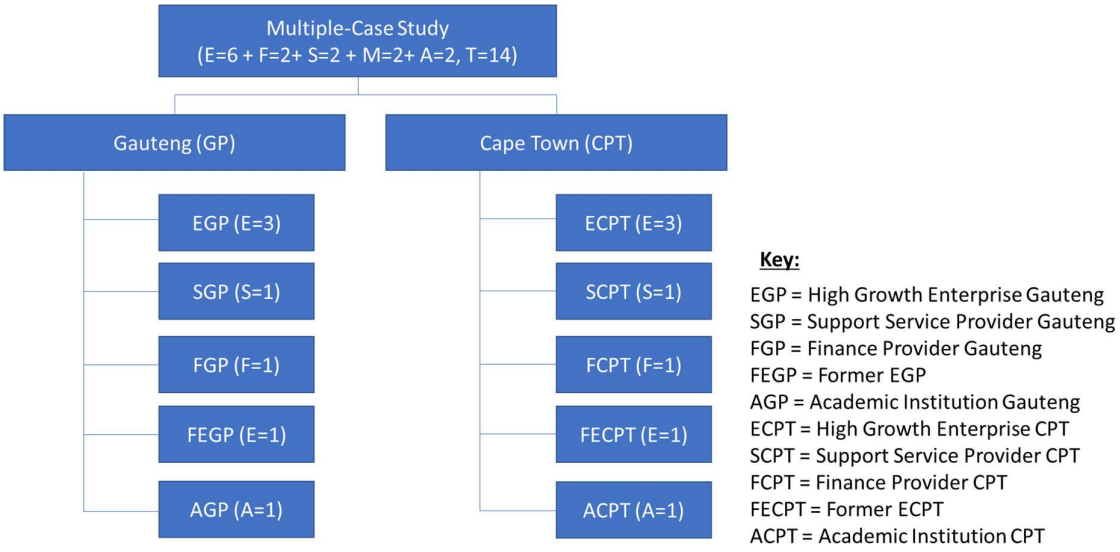

Figure 2. Entrepreneurial regions and corresponding respondents

Cape Town

Cape Town is the oldest city in South Africa, and has experienced multiple political transitions, more recent transitions were in 2000 when the seven former administrative regions were merged to form a single city. In 2006 another political transition led to the transfer of political power for the first time in South Africa's power, from the African National Congress to a coalition government led by the Democratic Alliance (DA). In 2011, the DA won the rights though a democratic election to solely manage the city.

Cape Town has fast becoming Africa's premium technology start-up hub. A study done by Endeavor Insights, indicates that in the past decade three percent of the companies founded in Cape Town reached 100 employees or more, whereas in other popular technology cities such as Lagos, Nairobi and Johannesburg; only one percent or less of the companies founded in the past ten years reached 100 employees or more. This is an indication of the rapid development of the city, which was recently voted as the 12th best place, out 15 places, to live in the world.

Three high growth enterprises and 4 other entrepreneurial actors who are involved in Cape Town's entrepreneurial ecosystem were interviewed for this research project. The high growth enterprises interviewed were technology-based enterprises and other entrepreneurial actors were from various industries.

Gauteng

Gauteng is the smallest yet most populated province in South Africa. Johannesburg, was once the city of gold, and today is represented as the financial capital as well as the wealthiest province in South Africa. The province comprises of many commercial, industrial and mining centres as well as a large manufacturing sector. Due to the already established economic centres in the province, educated individuals are drawn into employment by one of the economic centres, which affects the entrepreneurial social legitimacy in the region.

Three high growth enterprises and 4 other entrepreneurial actors who are involved in Gauteng's entrepreneurial ecosystem were interviewed for this research project. The high growth enterprises and other entrepreneurial actors interviewed were from various industries.

5.3 Results

5.3.1 Need for interaction in the entrepreneurial ecosystem (Policy, Finance, Human Capital and Culture)

Entrepreneurial actors in an ecosystem are driven by a need for interaction which is influenced by the value of the entrepreneurial resources that could be exchanged and the alignment to the goals, objectives and culture of initially the actors within the ecosystem which later developed into the culture of the ecosystem. The data structure for this aggregate dimension is shown in Figure 3.

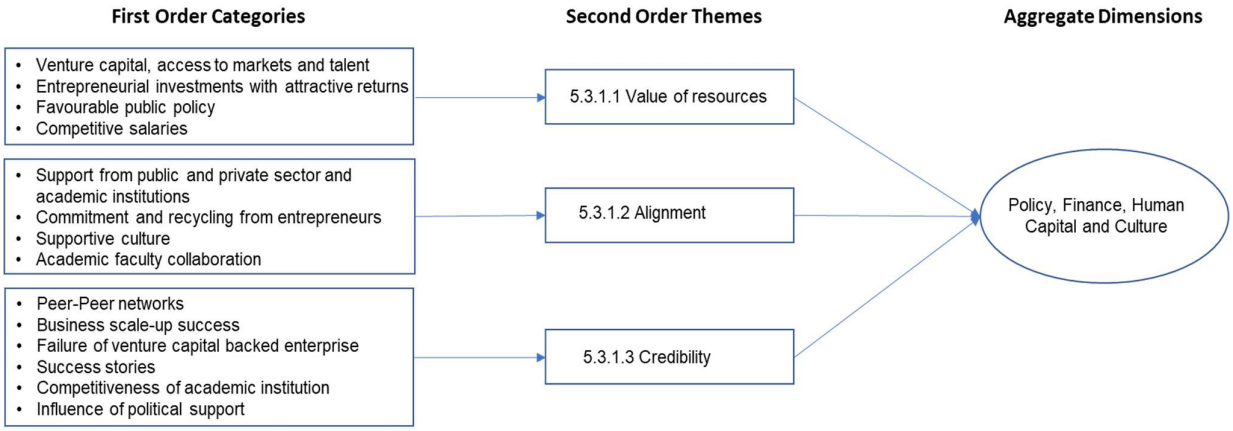

Figure 3. Data structure: Policy, Finance, Human Capital and Culture

5.3.1.1 Value of resources

One of the major themes that emerged from the data was what influenced entrepreneurial actors in an ecosystem to interact with other actors, facilitate the flow of resources and contribute to the development of the ecosystem. The high growth enterprises mentioned that during the start-up phase of their enterprise, they required support in the form of venture capital, and was one of the reasons they had decided to interact with other actors in the ecosystem. Gauteng based entrepreneurs mentioned the following challenges of receiving funding to start-up their business:

> "The only finance we had was unsophisticated finance. We pitched [pause] to get those guys we probably pitched to a 100 people. Mostly institutions. Mostly sophisticated institutions. And they all said no." [EPG1]
>
> "No one invests in start ups. The only one who invests in start ups in South Africa is high network angels that got like you know 10 bar. Like I know I'm not gonna get it back but good luck out there… So in 2012 the very first one was my business partner's brother. He gave us R20 000 which is very little Not dollars, rands. And a guy, like an angel that we met and he gave us in 2012, R270 000 something around there." [EPG2]

> "When we tried to raise money, ja. From jobs fund. A few different funds, they're not interested. They don't [pause] no one funds early stage stuff. Any institution will not fund anything in early stage." [EPG3]

Cape Town based entrepreneurs described their challenges of receiving funding during the scale-up stage of their business rather than the start-up phase:

> "We have series A. So these are the smaller VC's. But we don't have bigger VC companies that will now do series B funding. And then series C to grow the company to where it is. So the eco system is broken." [ECPT2]

> "So you'll get seed funders which is like even before launch. You get seed funders. Then you'll get VC guys, once you've got a little bit of traction you'll get VC guys putting in you know 2/5/10 million. Then you've got this huge gap and it takes you years to like growth phase and then you might run out of capital before you get to build a business that is sustainable and shows that it can grow with little risk. That's a big gap there. Huge gap." [ECPT3]

The second major reason, for entrepreneurs to interact with the ecosystem is to gain access to markets, and human capital. Entrepreneurs in Gauteng mentioned the difficulties in hiring talented employees and how they are unable to compete with large corporate organisations who pay competitive salaries to employees.

> "So really hard to find good talent. And that's lot of obviously based on personal relationships like you know somebody and; ja you trust me and I'm going to do something successful and this is what [pause] painting my vision for people. So in the beginning we struggled a lot more."
> "Why would you as a data scientist or a computer scientist or software engineer, why would you go and struggle to setup a business that's almost gonna be impossible for you to access a market when you can go and work for a large corporate and you know your starting salary is, I don't know 25/40/35 grand." [EGP1]

> "So we got connected to a network in the US and they gave us everything including human capital. Including the 2 key first staff. Employee number 1 and employee number 2." [EGP3]

Entrepreneurs in Cape Town also stressed the difficulties of sourcing human capital, however they believed that the culture in the region is shifting towards the attractiveness of working for successful start-ups rather than large corporates, this was mainly due to the success stories of former successful entrepreneurs in the region. Respondents also mentioned the importance of failed entrepreneurs, who remain in the ecosystem and become valuable first employees for new high growth start-ups.

> "That shift in mindset is happening in terms of the actual success and the actual success stories on entrepreneurs doing well that's still happening in progress. But yes, I think in the last two years, in terms of peoples mindsets and awareness has definitely improved and more and more people are seeking employment and wanting to get involved in this vibrant, innovative culture." [ECPT3]
>
> "A lot of the times, failed entrepreneurs become great first employees for new entrepreneurs, because obviously they feel they took the risk but now they want to be in the entrepreneurial environment without the huge risk, so they become great team members for young entrepreneurs…there is one company which has a team where the first employees were all failed entrepreneurs." [SCPT1]

Access to finance for high growth start-up and scale-up enterprises has been a strong influence on entrepreneur's decision to interact with the regional entrepreneurial ecosystem. However financial development providers in the form of angel investors and venture capital funds mentioned that the reason for their interaction in the ecosystem is to receive favourable returns on their investments in high growth enterprises, and the difficulty is finding good entrepreneurs rather than a lack of funding.

> "The investment has to make sense, I mean, how can you kind of go and put investments if the return of investment is cost? So how do you get patient capital?" [FGP1]
>
> "Our investors want the return of investment, so we need to also make sure that they get that they get the return of investment... We invest in the people not the ideas" [FCPT1]
>
> "So a lot of entrepreneurs will go; it's hard to get capital. I think it's the other way around. I think it's so hard to find good entrepreneurs with good ideas. And if you speak to any of the other VC guys, they're like; I'm sitting on this huge freaking fund and I can't deploy it. And there are so many funds that are out there that can't deploy their money because they can't find great entrepreneurs and great business ideas. It's a lack of innovation and quality entrepreneurs that's the problem. Not a lack of capital." [FEGP1]

Financial institutions and private equity funds mention the absence of government support in promoting the growth of venture capital funds, which is in contrast to other entrepreneurial regions where the public sector supports the innovation led entrepreneurship as indicated by the level of support provided to the private venture capital funds (SAVCA, 2015).

> "The South African situation contrasts with the huge and continued government support for venture capital in markets such as the USA, Canada, China, Saudi Arabia, Russia, Australia, India, Israel and Brazil. In these various jurisdictions, the public sector has set up and funded private-sector-managed venture capital programmes, as there is appreciation for the importance of facilitating innovation and the growth of new small businesses, which in turn enhance economic growth and provide employment."

Financial capital providers also mention the need for favourable public policy that promotes an investment friendly environment for venture capital, whilst positive initiatives have taken place such as the rollout of the 12J, financial development providers feel that public policy still remains a key influence of their intention not to interact with the ecosystem.

Most of the venture capital funds existing in South Africa to date, has been created by angel investors who were either former successful high growth entrepreneurs or corporate executives in the private sector, who are seeking the personal fulfilment of giving back to society by supporting enterprises in the ecosystem.

> "Some high net worth individuals decided that that's their way of giving back that that's the way to go. Because remember, even until today, most VC's are actually founded and that support us are super angels…even now its high net worth individuals, it's not institutions like in other places, it's not it's not the banks, it's not the pension funds, they don't support venture capital." [EGP3]
>
> "There were people who had made a lot of money, they wanted to give back and said, Well, if we support other entrepreneurs, well, that can address the fact that South Africa desperately needs we need motivation, we need more employment, and that they could kind of go put their money there and started these venture capital funds." [SCPT1]

5.3.1.2 Alignment

The second significant second order theme that emerged from the data findings was the influence on alignment of goals and objectives, particularly amongst support service providers, academic institutions and the public and private sector.

Financial development providers and support service providers such as networking organisations, accelerators, incubators and event organisers, were found to all be influenced by the goals and objectives of the ecosystem, which is created through the alignment of the entrepreneurial actors in the ecosystem. This alignment influences their decision on whether to interact with the ecosystem.

> "We get our purpose from the entrepreneurs and we have support from government I mean we have someone from the [local government] board that sits on the [entrepreneurial support initiative] council and wealth management team so I think they're always synchronising their efforts and have done a fantastic branding job of exposing entrepreneurs from the Cape to the world and vice-versa." [FECPT1]
>
> "The one common pattern is actually that these entrepreneurs understand that they need help, and that they're not shy to kind of go with this and therefore, kind of prepared to kind of go and go into a program like ours, and of course, well, they all want to kind of go and get close to us and wants to get funding from us." [FCPT1]

Networking organisations are expected to connect entrepreneurs to resources such as finance, human capital, mentorship. The commitment and level of recycling of entrepreneurial resources provided by past and present entrepreneurs influences the role of the networking organisation in the ecosystem.

> "Silicon Cape was founded by two entrepreneurs who understood the need for support for entrepreneurs, without the contributions from entrepreneurs of past we would not have such a strong support structure, and this in turn influences younger entrepreneurs in the Cape to give back." [SCPT1]

Silicon Cape was founded in 2009, and prior to this period the entrepreneurial ecosystem in Cape Town lacked the presence of support service providers. Respondents who were involved in the ecosystem mentioned the difficulties experienced by entrepreneurs.

> "In 2004 we had the Bandwith Barn, which was a tiny little co-working space. No events, no value add, all they had access to was bandwith. If you were trying to meet entrepreneurs there wasn't an obvious place to go, there wasn't someone who could connect you, to somehow potentially meet them. And there were actually not that many of them and everybody was actually far more thinking about how to go and get a job." [FCPT1]
>
> "There was no venture capital, entrepreneurs were on their own. There was no support structure, even if there was demand from entrepreneurs people didn't know what to do about us." [FECPT1]

Respondents also mentioned the surprise of the commitment shown by entrepreneurs when Silicon Cape was launched, while the organisers of the even were expecting a few people to attend the launch, much more attended and this resulted in much more interest by other ecosystem actors.

> "Silicon Cape announced the first event, so they could get together, and they had kind of thought that for that event about 200 people would come and there were 800, a 1000. It was absolutely incredible how all of a sudden there was this plague and of those entrepreneurs were there. It was just absolutely amazing." [FCPT1]
>
> "From the interest shown in Silicon Cape, we had to then go and find sponsorship, we were quite lucky because we had the likes of First National Bank and so on, to actually go and start doing more of these events. And everybody was screaming for community, everybody was speaking for how can we all get together? How can we go and kind of start getting to know who else is there and can we go and start sharing our experiences. I mean, that was definitely like a big, big change." [FECPT1]

These initiatives led to the growth of support service providers and venture capital funds in the region.

Gauteng still lacks a central platform for entrepreneurs to connect with other ecosystem actors in the region, successful high growth enterprises were also found to support other regional ecosystems due to the lack of commitment and respondents from Gauteng mentioned the disadvantages this poses.

> "So lots of the time we don't even know what we're supposed to be doing because we are acting in silos, and I think that's part of the problem." [FEGP1]
>
> "You'll notice that entrepreneurs are not organised as a body, so how do you make a submission on behalf of entrepreneurs to local government providing input to policy or get together to network, there isn't a way to do that. Its quite dispersed." [PGP]

Academic institutions in both Gauteng and Cape Town indicated the lack of support they received from the public sector, in supporting high growth entrepreneurship through incubation programmes and facilitating the exchange of human capital and intellectual property in the ecosystem. The Fees Must Fall protest was also mentioned as a key example in the lack of support received by government, and as a result has limited the institutions role in the ecosystem.

> "Many of my colleagues I work with who are big proponents of this idea of building an incubator but we just feel it's too much politics and with the fees must fall protest, the focus I mean was so much on you know costs we were almost fire fighting for the last three years that we don't even think of new initiatives. So instead of investing money students are saying fees must fall so I do understand that the limitations from that side." [PCPT]
>
> "There is a misalignment of policy between the government department which has actually manifested across the universities. Universities in South Africa lack the incentives to work on research that can lead to products that will help the community hence you may find that in most cases, universities do not have payout policies when they want to license out the technology, when they license out the technology it reduces the loyalty that comes to the university. So some university professors have seen the damages of pushing out their research products to market because there is nothing that is coming back." [PGP]

Both academic institutions who were interviewed, did operate an enterprise development programme that supports graduates and young entrepreneurs through providing a co-working space, access to support service skills such as accounting, legal and marketing; and entrepreneurial education. However both institutions mentioned the lack of buy-in and collaboration from the other faculties and the board of directors of the university. The respondents argued that the university is still rooted into the academic culture and has not adapted a pracademic philosophy of turning academic knowledge into practical innovations in

society. As a result innovative ideas that are created in different faculties of the university remain within the faculty without creating any value to society.

> "The think we deal with in universities in SA are untransformed mindsets where there is a big gap between academics and pracademics lie myself. The academic agenda is seen to be the generation of knowledge without an understanding of what the context means, so we have 6000 workers, I would say less than 1% of those are thinking like me. Academics have big egos, I think it's the mindset, I think it's the fees must fall where we are seen as an auxiliary, nice to have program. And so the money that comes through traditional means is not enough." [PGP]

Many respondents from both the regions mentioned the ecosystem culture and that the influence they have within the ecosystem is dependent on the individual and organisational alignment to the ecosystem culture. Cape Town was found to have a very different ecosystem culture to Gauteng, in terms of promoting the willingness to take risks, importance of collaboration and the exclusivity of the social networks which does not allow actors from outside the region to easily be accepted into the network.

> "Where as an unkown entrepreneur who is brilliant and who really wants to you know maybe have a very good idea and struggles to get an appointment with who ever. Because there are gate keepers and there are networks. And we're not as entrepreneurial as we'd like to think we are." [FECPT1]
>
> "There is no diversity in the networks. No, not at all. When you look at true top level decision makers the majority are male I mean in the Western Cape. And it's predominantly I'd say 45/50+ white male. There may be a director of transformation as a black woman. And this has an influence on the success of female entrepreneurs because I mean people [pause] you associate with what you can relate to." [ECPT3]
>
> "So there are entrepreneurs who constantly [pause] they always have an angle. Like I wanna meet with you and have a coffee because I have an angle and I wanna get something from you. Those oaks don't last. Like it's not [pause] it doesn't work out. I think the South African culture doesn't like me smooching you so that I can use you for something. It just doesn't go down well. Guys that are authentic and sure you help each other out but on a trust by trust basis, you know." [EGP2]

The findings revealed that entrepreneurs who were not aligned to the ecosystem culture usually exited the region and formed a start-up or played a supportive role in an ecosystem in which shared their goals, objectives and values. The misalignment in the ecosystem culture has been the key reason for the lack of recycling of entrepreneurial resources, which further affects other actors intent of participating in the ecosystem.

> "So I invested in 4 start ups. All in Cape Town. There's very little going on here. Like weirdly. I mean I've struggled to invest in stuff here. I don't think there's no one raising. There are more in the early stage raising in Cape Town. I think that there's a lot more hipsters…That is doing nothing with their lives except for raising money. So I think there are more of them. I'm not saying there are more good ones but there's just more." [EGP1]

5.3.1.3 Credibility

It was found that if ecosystem actors did not perceive an actor or process as credible then an interaction would not take place. High growth enterprise respondents mentioned the significant role that peer-peer networks played in the contribution to the success of their enterprise, with many respondents mentioning that these networks were the most important interaction that is needed to support high growth enterprises.

> "[The peer-to-peer network] is the most powerful support system in the whole country by far. The other stuff is all irrelevant. Out of [this network] I created all the support structures I really needed. Friends that actually understood because they were also going through it. Before I had no friendship support, no parent support because that's why I said out of [this network] all of that came. And my ability to understand what to do in the business all through [this network]." [EGP2]

> "As soon as I started reaching out and I started getting connected through Endevour and eventually Entrepreneur Organisation, I mean a whole world has opened up. If you're an entrepreneur and you're accepted in to the ecosystem because you have you know proved yourself that you've done this stuff. The world just opens up completely." [EGP3]

When asked why they valued peer-peer interactions so highly, most of the respondents mentioned the exchange of entrepreneurial knowledge and both personal and professional support they received from peers who been through and were currently go through the same experiences and events as the respondent. They further mention, that the exclusivity of the network also ensures that the entrepreneurs who are accepted into the network can be trusted and feel comfortable in exchanging resources within the network for all entrepreneurs to benefit from.

> "You have something called forum and in forum you meet once a month. And theirs 8 of your own businesses but it's not in the same industry. And you can't know each other, so no conflicts. And in a very structured way you present on issues on that business. And then people go around and they tell you when they were in the same situation, what they did. So if I say like I've got 2 weeks of cash flow left, then everyone will go around and say; well when I had 2 weeks of cash flow, these are the 3 things I did. And then you would hear about what

> they did. But if you had guys running one small spaza shop then it would much more difficult to gain lessons learnt." [EGP2]
>
> "But I only figured out I need psychology when I went to [peer-to-peer network]. Because I [pause] men don't like really talk about it and I didn't talk about my background. Men don't really talk about therapy. So it was always like very negative like a weird thing. And then when I started talking to some of the guys in my [peer-peer network], a lot of guys were like; ja I go there I'm like I'm messed up. Then it kind of normalised for me and I was like; oh it's not something I can be scared of." [EGP1]

High growth entrepreneur also mentioned the difficulties of receiving venture capital funding when they have had no prior success scaling up an enterprise. First time entrepreneurs believed that this was the key attribute to explain why venture capitalists were not interested in supporting the enterprise particularly during the start-up phase of the business life cycle.

Financial development providers reaffirmed this view stating that the process of supporting experienced high growth entrepreneurs is a lot less rigorous when the entrepreneur had experience of successfully scaling up a business. It helps reduce the risk of making a bad investment, and they also mention that the venture capital markets in Gauteng and Cape Town are so small, that if a venture capitalist had a positive interaction with a successful entrepreneur in a previous round, a potential venture capitalist will place a high priority in meeting with the entrepreneur to provide the required support.

> "We've all been in the industry for the last 12 years, therefore, we know a lot of people and other people know us. So we get so much deal flow simply because of the people that we know who see interesting entrepreneur consider entrepreneur good enough that they're happy to kind of go and put their reputation behind it, so then we get this introduction, so somebody sends us context, as have you seen this company, it fits in your within your investment mandate, and I really recommend that you go meet with them. So if we did it, so then we will meet with them." [FCPT1]
>
> "There's our website where people just go and do blind emails, but to be honest, we don't look at those. So I actually have no idea. I cannot tell you how many how many applications comes to the website. It will just take too much of time to review all of them." [FGP1]
>
> "South Africans have this filter that delegitimises everybody that doesn't work with brands that they legitimise. Your average like high powered South African, if you like give them a brand that they believe and respect in, let's say it's Billiton or RMB, it doesn't really matter what you say after that, they're in. But if you give them an unknown brand that's a small thing they delegitimise it immediately. It's the same reason no South Africans invested in us because they just, they can't clear the stuff like the fog from their eyes to make these investments." [FEGP1]

Whilst it was found that enterprise scale-up success was celebrated, many respondents mentioned that the failure of venture capital backed enterprises, usually result in the isolation of financial resource flow to the failed entrepreneur. The is turn causes the failed entrepreneur to either enter the corporate environment, participate as a support service provider in the ecosystem, or fund the growth of their next enterprise using personal funding that could also be provided by friends and family.

> "And then I suppose to some extend capital have been a restraint but by choice. I've been really quite reluctant to involve financiers. I wanna row my own boat. I'm not interested in [pause] I don't need to be [pause] I don't wanna manage investors. And so I suppose that there were times that we could've taken on funding that would've given us actually smarter people and smarter systems faster. But that doesn't suit my personal objective." [EGP1]

In addition to not receiving financial support, it was found that failed entrepreneurs are also discouraged from requesting finance to start a new enterprise due to their past failures, and rather avoid having the additional burden of satisfying the requirements of funders as well as sustaining their enterprise.

> "I mean I come out of a failed sort of .com tech world at a time 2001 where the sort of, I suppose you'd say the bubble burst and I was based in Boston at that time. So I returned here and I really wanted a business that very specifically didn't involve investors because I was exhausted from managing the complexities of that landscape. We've spend more time managing investors then what we did running the business. And in a way I was kind of you're yearning for something a little bit more concrete." [EGP2]

> "Also just I mean the dependency you know I just felt I understand investment is not a loan. But morally it was money that I took from other people and I really struggled with the burden of comprehending how that would never going to be able to be repaid at the quantity that I could never entertain repaying. So you know I mean if you put it in to rand terms it's like 1.3 billion rand, it was crazy." [FEGP1]

All of the financial development providers interviewed mentioned the need for success stories of entrepreneurs who had successfully and scaled their businesses and either continue to do so or have successful exited their enterprise for a lucrative exchange of funds.

The respondents mention that this creates a positive perception of the role of entrepreneurship particularly for young entrepreneurs who are conflicted by a choice of joining the corporate sector for a lucrative salary package or starting a business. In addition, respondents mention that success stories also help create awareness and interest from the financial sector to create more venture capital funds in attempt to gain a share of the potential rewards in the venture capital asset class.

Archival data gathered from the South African Venture Capital Association revealed the key findings as why financial development providers are perceived as risk adverse and lack trust in the regional ecosystems in South Africa. Venture capitalists agree that the industry is still relatively underdeveloped when compared to private equity in South Africa. One venture capitalist recalls (SAVCA, 2015):

> ”There were few local high-profile cases in the past that left investors badly hurt, an unsuccessful VC board on the JSE and tax legislation that generally was not investor friendly for venture capital, all of which tainted perceptions of, and support for, the industry…But cynicism is starting to dissipate…For instance, investors began taking note when Mark Shuttleworth sold his IT business at the start of the millennium with great financial success.”

Success stories have also found to have an ecosystem effect, in attracting resources from other ecosystems due to the credibility that the region possesses which is characterised by the amount and magnitude of its success stories.

> “We need to be celebrating black entrepreneurship not to single them out but I think that we need more role models because it is going to encourage the younger generation to become entrepreneurs rather than looking for because obviously it's a challenge you know starting your business is a huge big commitment when you spent a few years studying and then you looking to pay all of your loans etc. the corporate salary, is a huge attraction. That's why things like the Allan Gray Orbis Foundation, so, you know, that's why in my mind they haven't produced as many entrepreneurs as we were kind of hoping because they were also one of our partners most of the people that come out of the program usually end up working at Goldman Sachs to get the big fancy salaries, etc. As an entrepreneur. That's not going to happen for the first couple of years.” [SCPT1]

The reputation of academic institutions in developing innovative technologies, creating patents and transforming these resources into business opportunities has found to also play a significant role for high growth enterprises to interact with these institutions, as well as allow for support service providers to connect these institutions with financial development providers.

The role of local government in creating an enabling entrepreneurial environment has been a major finding of this research. The role played by local government in Gauteng and Cape Town in the entrepreneurial ecosystem are vastly different and dynamic. During the periods 1994 – 2005 the African National Congress (ANC) political party had the majority of political power both nationally and in the two regions. Hence public policy and support provided by national and local government was usually aligned. During this period the amount of venture capitalists situated in Cape Town was 25%, whilst Gauteng housed 70% of venture capital

funds. As a financial capital provider respondent mentioned, venture capitalists prefer to be close to their entrepreneurial investments:

A dynamic shift had taken place between the location of venture capitalists between the two regions. As of 2017, 70% of venture capitalists were situated in Cape Town whilst 30% were situated in Gauteng. A shift in the location of venture capital funds was noticed to take place from 2009. During this period there was a major change in the political landscape in Cape Town, when for the first time since the birth of democracy a political party other than the ANC had the majority of political power in the region. The Democratic Alliance (DA) through a coalition local government formed in 2006, had control over the management of the region. In 2011, the DA had outright control over the management of the region. WESGRO (The local government arm of the Western Cape) has since played an instrumental role in transforming the global attractiveness of the city as a tourist destination and technology hub of Africa. WESGRO acts on the mandate of local government, the financial statements of WESGRO indicates that there was approximately a 200% increase in foreign direct investment into the region compared to prior years when the ANC had control over the region. Cape Town was acknowledged as being one of the most attractive cities in Africa, which further improved its reputation as an enabling place to live and work. When respondents were asked why they preferred to launch their enterprises in Cape Town they mentioned:

The results show the powerful influence that local government can play in South Africa in creating its own mandate of harnessing an enabling environment for entrepreneurship different from other regions in the country which could transform the level of development of the entrepreneurial ecosystem through maintaining credibility as a collaborative actor in the ecosystem.

Most of the high growth respondents mentioned the difficulties in receiving crucial resources that were needed during the start-up and growth phase of their business. Respondents mentioned that they were often exploited by other actors in the ecosystem, such as financial development providers or talented employees, into exchanging resources that were needed by setting high costs of exchange that would not necessarily be so high had the entrepreneur had alternate means of acquiring the valued resources.

> "We boot strapped a lot. So we put in our own money. But then we also got funding from SPII. And it was also TIA, T I A which is the innovation. It's like an innovation fund. So this is I think its part of the DTI. We raised about 1 and a half million rand from them. It's so painfull I almost shot myself. It was a year long painfull process. They sent in consultants to come and analyse what we were doing, that didn't have a clue what was going on. Just it was crazy. It was very very hard to get." [FEGP1]

> I think in the beginning it's really hard to find quality people because if you're looking to employ people, they want to understand [pause]. They wanna join a company that has some sort of bright future. They wanna be part of something. And you have to really create a visionary story to get people to buy in to what you're doing. Because you're a bunch of aoks sitting around in a crappy office you know and people are gonna go; I don't wanna work for you. So really hard to find good talent. [ECPT1]

As high growth enterprises had successfully scaled their business, the costs of attaining resources were much lower when compared to earlier stages in their business. Talented employees were attracted to their success in the industry and showed a desire to be employed by the enterprise.

> "And then it gets easier. As your company grows. As your company gets a little bit of airtime as a [pause] as your offices you know, like a [pause]. As your offices become better and look cooler and you actually start building the culture that you can now talk to people about. Hey join us because we've got a cool culture. It becomes easier. It's really tough in the beginning." [EGP2]

Financial development providers also mentioned that processes followed, and the attention given to entrepreneurs who had received funding prior and successfully scaled their business, was a lot less cumbersome and time consuming. Support service providers like networking organisations also mentioned the occurrence of entrepreneurs starting, scaling and exiting multiple enterprises due to the ease of receiving resources after their first exit.

> "You know once we've gotten entrepreneurs through the entire process of vetting them all the way to the post investment management point of view, it's so much easier for us to support those entrepreneurs who start new businesses." [FGP2]

> "We have quite a few entrepreneurs who we support that sell their business and still remains a member of our network, and they usually start another business because you know now they know lots of people who can assist them and they give back by mentoring other entrepreneurs in our program and helping source new entrepreneurs." [FCPT1]

High growth enterprises also mentioned that there were actors who took advantage of the shortage of resources in the ecosystem by exchanging these resources at high costs, usually didn't sustain their position in the ecosystem, due to scarce resources becoming more widely available and reduced the dependency on the scarce resource provider. Actor also had no intention of interacting with these resource providers due to their prior experiences.

> "So you know there are entrepreneurs that always have an angle. Like I wanna meet with you and have a coffee because of my angle and I wanna get something from you. Those oaks don't

> last. Like it's not [pause] it doesn't work out. I think the South African culture doesn't like me smooching you so that I can use you for something. It just doesn't go down well." [EGP2]
>
> "Guys that are authentic and sure you help each other out but on a trust by trust basis, you know. Then they are guys who take advantage of the network, they know you desperate for funding or getting access to a market and may try to exploit that, but those guys never make it, it's not our culture and we can easily see who's in it for the short term." [ECPT3]
>
> "But I don't specifically say; you know please buy from me. You know that's not our style. And also the nature of our work, if they don't have strategic project that need the learning component, nobody's going to have the conversation. Because you know it's quite nish in that sense. But they know over time if they've learned what we do then they call us you know but they know where to call us. But I don't abuse my network and start selling today. You know I can network them and I build relationships with lots of people in my own way and then from time to time some of the deal is business." [FECPT1]

Entrepreneurs mentioned that during the start-up phase of their business they prioritise the survival of their business, and thus focus on achieving short term goals and often neglect the long term consequences this strategy has on the growth of their business in the future.

> "I mean the amount of debt I took on was stupid. Like I took out as much debt as I possibly could and I saved nothing. So when you're earning 20 000 and 10 000 and 30 000 you can't, I had no RA's. No savings. Nothing. I got as much credit as I possibly could and I just spent it." [EGP2]
>
> "I didn't actually default on anything but I went in to default. So I [pause] the only reason I didn't default is that I had a credit limit of like 20 000 and my runs just went on my credit limit. So if it would've gone 1 more month I would've defaulted on like stuff. So like and I didn't have much." [ECPT1]
>
> "My business partner was borrowing money from her dad. I was not borrowing from my dad yet but I was like; this close. It wasn't like, I would've have much rather have money to put in. It was hard. And that's the reason we had to let go of so much of equity in the beginning, we didn't really have a choice, and when you look at it now some of investors in the beginning made like 20 000x." [EGP3]

5.3.2 Resource Recycling

Another major theme that emerged from the findings, was the frequency of interactions between respondents and other actors in the ecosystem and the quality of resources exchanged amongst these actors, which helped explain the reason for their ongoing interactions with other actors and processes within the entrepreneurial ecosystem. The data structure for this aggregate dimension is shown in Figure 4.

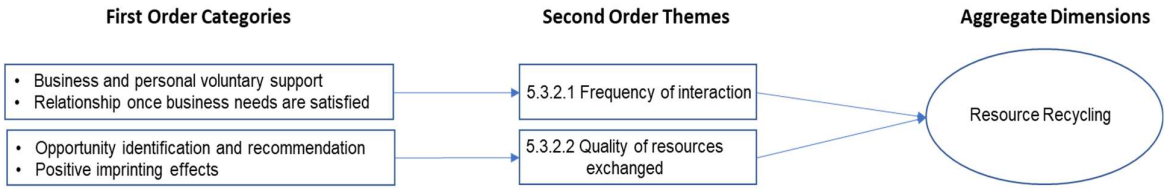

Figure 4. Data Structure: Resource Recycling

5.3.2.1 Frequency of interaction

Respondents most frequently responded with actors who were able to provide both business and personal support based on their personal desire to do so rather than being driven by an immediate expectation of a return. High growth entrepreneurs felt that emotional support during difficult times in their business was one of the most important resources they required from their social network and in particular from other high growth enterprises.

> "So it's a no advice organisation. You can't bring advice. It's a no solicitation. I can't sell my stuff. Because there's this struggle that you go through which is both a personal and a business struggle. You can't divide the two. Because as an entrepreneur your business is kind of in you the whole time. Whether you're at home with your wife and your kids or you're at work. Like you can't differentiate the two. So it's a lot about work life balance. How you manage your time. People sharing experiences on how they got through difficult periods of time. And then practical stuff as well. Like you know bringing in guys who come and talk about certain things. We do all sorts of events." [EGP1]
>
> "The network is really awesome. It's a really cool bunch of guys. So I think it's invaluable for any entrepreneur to have that sort of support in their system. You know I think it helps you stay focussed in what you do. I think if I haven't had them I might have you know lost focus earlier than I did. Because you meet on a regular basis and you kind of [pause]. They almost hold you accountable for what you're doing. And help you achieve you know your goals and that kind of stuff. So I guess there's definitely [pause]. I wouldn't do this without some kind of entrepreneurial support." [FEGP1]

It was found that entrepreneurs interacted with venture capitalists most often than any other actor in the ecosystem. Many entrepreneurs mentioned that these interactions can occur on a weekly basis, and none of the entrepreneurs had created a friendship with the venture capitalist one they exited their enterprise. However, many venture capitalists still interacted with the entrepreneurs they supported when a need arose.

Entrepreneurs, particularly in Gauteng mentioned the importance of having a mentor to provide business and personal support, a resource they felt they could not request from other actors who they interacted with more frequently in the ecosystem such as venture capitalists.

> "So like I mean yes you can listen to VC's, but they're shareholders. I mean I'm not gonna tell a shareholder the same stuff. I would say to my mentor; I'm struggling with culture and I'm not sure if I should fire everybody and restart. And then he would be like; look there's risk of doing that and there are pros of doing that and read this or whatever. So by the time I went to [my funder] I'd be like; look I've decided that I wanna fire an entire team and this is why I wanna do it, what are your thoughts." [EGP2]

> "My discussions with my mentor is more raw and more honest because you got nothing to lose from each other, my mentor doesn't own shares in my business. So you can talk through the fundamental basic stuff. Where with shareholders generally you are more structured. You kind of portraying something that's a lot more like thought through, like more professional. When you sit down in a board meeting you prepared it." [ECPT3]

> "I know that a lot of start ups in our community who do have mentors tend to fail fast and learn from those, much bigger then the one that they have. Because they are dealing with people who actually already build several businesses, so they're able to you know guide them in the right direction. But I also think that you know sort of a critical [pause] some space that the mentors fill is like the networking. Where the mentor is able to connect the start up to the right people. Where for instance you know if a start up wouldn't have necessarily be able to get hold of you know a CEO of a particular company then the mentor is able to sort of make that particular introduction. And some of them are even willing to sit in with them in those meetings. I know from conversation with some start ups. So I find that ja like the mentoring is actually quite valuable for most the start ups that actually use it properly." [SCPT1]

> "You know so and sometimes you create your own insights by helping someone else. You know I often found that a process of mentoring someone, even a pretty short spell when asked to do so, I get as much benefit out of it." [FECPT1]

It was found that entrepreneurs who had received valuable support from their mentors when required, had increased their interactions with their mentors even after they had exited their business. Many respondents mentioned, that they usually become close friends with their mentors once their business relationship has ended.

> "I mean we've now started going on holidays and stuff together, like 2018. But now we [pause] but it's as I needed him less in the business, I got to know him and he got to know me. And we kind of just still meet up every now and then." [FEGP1]

> "My relationship with my former mentor I'd say is more friendly professional, like half and half. It kind of just chaged over time but the mentorship dropped away. Look I'd still go to him and ask him stuff but it's the way I go and ask a friend stuff. The same way. Not like the way I'd ask a mentor something." [FECPT1]

Similarly, it was found that financial development providers most frequently interact with their peers in the finance industry, having both a personal and professional relationship built over period of time that usually started during their initial interactions working for the same organisation or being educated together. Many venture capitalists mentioned the close friendships they have with other finance providers in the ecosystem.

5.3.2.2 Quality of exchange of resources

Respondents also alluded to the quality of the resources exchanged amongst actors in the ecosystem as a key characteristic in defining the level of interaction and relationships in the ecosystem. Many actors who have exchanged resources that were of value with other actors, continued their interactions even after they had changed roles in the ecosystem.

High growth entrepreneurs who received funding from a financial development provider, and attributed their success to this resource, later assisted the same financial development provider in providing attractive entrepreneurial investment opportunities. These opportunities arise from the interactions between the successful entrepreneurs, acting as an angel investor, mentor, support service provider in the ecosystem, and the entrepreneurs in need of financial support. Since these successful entrepreneurs have experience in identifying the value in an enterprise, the recommendation they provide to the financial development provider is usually turned into a funding agreement between the entrepreneur and the funder.

> "We were put in contact with a Silicon valley who used to be an entrepreneur. So he came from entrepreneurial background, become a VC and he helped us with our pitch deck. So I mean it was invaluable. The first pitch deck we sent to him and we had a Skype call over it, he like basically tore it apart. He was like; this is the biggest load of crap I've ever seen, you guys are gonna get zero money with this. And we felt terrible but it was actually a very good learning lesson and he was part of it. It took us about 4/5 months back and forth with him to build like a really good pitch deck. That was invaluable." [EGP2]

> "We went to the UK for a speed pitching networking session. So in a day you get, it's like speed dating to get like 10 minutes or 12 minutes per pitch. And there's a hall full of venture capitalists and private equity guys and angel investors. And you have to go from one to the other. So you take your pitch deck, you've got 12 minutes to try and sell it to them. We pitched like 20 oaks in one day and then they give you feedback. We had a few that were interested and we collaborated a little bit with [pause]. and then we hit the road in South Africa. And within 2 months we found someone that was interested in giving us money." [FEGP1]

High growth entrepreneurs who had received valuable support from support service providers, also mentioned that they usually recommend other entrepreneurs they interact with to interact with the support service provider and is seen as a form of return for the valuable the high growth entrepreneur had support received.

> "So we started the accelerator 3 years ago in South Africa and that is amazing for those entrepreneurs. There's been about 60 that's gone through the program and there's lots of support from them. There's practical support as well. Bring about facilitators that come and teach them about how to scale up their businesses and you know all sorts of event where they meet people. Networking events. Forum like experiences. It's been really really cool for them. And those guys [pause] a lot of them say if it wasn't for exhilarator they wouldn't be where they were." [FEGP1]

5.3.3 Diversity

Another major theme that had emerged from the findings was the diversity in resources, skills and experiences of the entrepreneurial actors playing multiple roles in the ecosystem. This diversity was found to be influenced by the adaptability where entrepreneurial actors participated in various roles over a period of time, and the level of interdependence between the actors for the resources exchanged. The data structure for this aggregate dimension is shown in Figure 5.

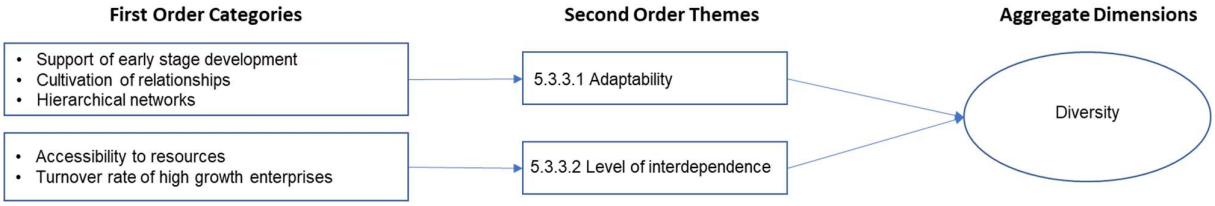

Figure 5. Data structure: Diversity

5.3.3.1 Adaptability

Support service organisations that were interviewed in both Gauteng and Cape Town are managed by former entrepreneurs, which presents an advantage to areas in which entrepreneurs require support and are able to identify high growth enterprises during the start-up phase and connect these entrepreneurs to potential venture capitalists.

All respondents in the ecosystem mentioned the importance of creating and building relationships with other actors in the ecosystem, and felt that actors who used the social network in the ecosystem purely to gain resources without any intention of supporting the ecosystem, usually got 'weeded out' over a period of time due to their inability to obtain support from the ecosystem to adapt to a changing business environment.

> "It's not a tit for tat where we're just about immediate kind of benefit for everybody. You know, there's so many of those relationships where we actually add value to certain people in the ecosystem for years and years and years without never receiving anything in return. But it's about building relationships, those things just come, they just happen at some stage. You know, you get the right introduction, they help you with an information that you that you

> require. So therefore, it really is it's about long term value and not about short, short term value adds." [ECPT1]

All of the financial development providers interviewed, mentioned the importance of maintaining the hierarchical structure present in both regional ecosystems, which are put in place such that venture capitalists are able to identify which opportunities are worth considering for investment.

The hierarchical structure helps the venture capitalists to adapt to a changing environment by being protected by avoiding direct interaction with and taking on risk from entrepreneurs. The high growth entrepreneurs who require funding interact with other actors in their social network, such as support service providers (mentors, lawyers, accountants etc.), who in turn refer attractive investments to venture capitalists.

> "It's our service providers is our lawyers, accountants, our old portfolio companies, our investor base, and then just all the entrepreneurs or everybody in the ecosystem that we know I mean, to answer this, we, we know a lot of people and when they see something good, well, they normally kind of send it to us. So that is already where the big chunk kind of comes from…it's because we nurture our ecosystem, and our network, to make sure that we are top of mind when they actually going to go and see it, see a good deal." [FCPT1]

Hierarchical networks were also found in academic institutions, and it was highlighted by both regions as the key inhibitor to lack of transformation of academic institutions to transform innovative research into business opportunities. At the top of academic institution hierarchy comprises of academic professionals, who have a fixed objective of promoting the amount of research that are published and the number of students graduating rather than on adapting to the changing business environment and supporting the entrepreneurial ecosystem by helping to transform innovative research into business opportunities.

> "The objectives of the university are misaligned with the needs of society, with the university the more students we get through the more subsidy we receive, the more research we get out the better we ranked. So it's a systemic problem." [PCPT]

5.3.3.2 Level of interdependence

A strong theme that emerged from the findings was the role and influence that the level of interdependence played in determining the value of the resources exchanged in the entrepreneurial ecosystem. Interdependence amongst actors and processes was influenced

by the accessibility of resources, the quantity of high growth enterprises exiting the ecosystem, and the diversity of resources, elements and processes in the entrepreneurial ecosystem.

Most entrepreneurs interviewed mentioned the difficulties they experienced receiving resources to start-up their business, since they were not connected to a social network within the ecosystem which allowed for the required resources to be accessed.

> "In the beginning was very tough. Because I wasn't plugged in to any networks. I did everything on my own and it was like a whole new thing. And my mates and my family helped me you know to get it up and going. But as soon as I started reaching out and I started getting connected through Endeavour and eventually Entrepreneur Organisation, I mean a whole world has opened up." [FEGP1]
>
> "No one connected us to a network and I wouldn't use those networks in joburg anyway because they are so sh*t. No I mean like I'm not a bottom feeder. So I would like, I mean they're absolute dog sh*t. Like you got to be desperate." [EGP1]
>
> "Often entrepreneurs think they need money but what they need is a network. So if you're going for an investment all you focus on is; I need a million rand to kick the life on and to pay my six developers or whatever to keep the shop going. But often you don't understand to what conditions you signing up to. What you can't google is the practical information or knowledge that some one has who has already gone through, has already run a business. Who's already understands the terms and conditions to understand why people will actually not be applicable to you or [pause]. That's the value of mentorship. It's really important." [FECPT1]

Networking organisations made a similar observation, that there were many entrepreneurs in need of resources but were not connected to the ecosystem and to each other to share and learn from their experiences. In Cape Town, two high growth entrepreneurs who had successfully scaled their business decided to support those early-stage entrepreneurs in need of support and resources, by creating a networking organisation called Silicon Cape. The objective of the Silicon Cape initiative was to create awareness of Cape Town's high technology ecosystem with the objective of attracting resources from other regions into Cape Town to assist entrepreneurs. The Silicon Cape initiative also allowed early stage entrepreneurs to come together and share resources, which increased the level of interdependence amongst the entrepreneurs. A co-working space was created in Cape Town in which entrepreneurs could rent out shared office space and were allocated desks and chairs. This created a high degree of collaboration from other entrepreneurs operating from the co-working space, and additional resources started to share such as software developers and legal, accounting, and marketing services.

Since there was a high level of interdependence amongst entrepreneurs due to their similar needs, entrepreneurs were not exploited and were able to build strong relationships with actors that supported them.

> "So we manage the entire process, we will do the introductions, we will sit on all of the calls, we will go to all of the meetings with them. And obviously if their in the same region and we will take notes , we help drive the conversation such the entrepreneur gets the best outcome. As well as making sure the mentor or partner who we having the interaction with gets value out of the interaction as well. So they want to feel they've added and contributed in some way." [SCPT1]
>
> "I definitely think that there is a support network. So I think that opportunity is shared with each other and it's a very small ecosystem. Very small industries. And it depends on if you considered being part of that you know that inner circle, if you're part of that or not. So there is access and opportunity for high growth businesses and access which is usually funding and access markets. Those are entrepreneur's biggest issues." [FECPT1]
>
> "For start-ups we're really getting them in to conversations that are critical for their industry. So we invite start-ups and those start-ups would've said yes because they understood the kind of you know value that they will get from that interaction. You know they're going to be asked and have them ask questions that are quite critical to the businesses that they're building. So you know in that space I've got yeses from most of the people that I invited to that session. And then also [pause] so it would be engagements. It would be broadcasting their resources. So that would be for the start ups like in a nutshell." [SGP1]

Support service providers and financial development providers mentioned the importance and high level of interdependence they have with each other and with entrepreneurs. They mention that when actors who received valuable support from the ecosystem decide to leave to another region, it significantly weakens the ecosystem from a resource and culture perspective.

> "So what you see is that some [pause] a lot of entrepreneurs will just start a new venture. Have a new idea which is not something bad because they've already seen [indistinct]. And the other thing is also that [pause] so they'll just end that venture and start with something new or improve another, improve their idea or maybe they'll get buy in. Others will go look for employment so they must go and work for a while until they find that they're in a better situation or they find the right players to help them move along with a new idea." [SGP1]
>
> "We support an high growth entrepreneur who been in operation in SA for 10 years, and she is a new zealender, she has been struggling to get her work permit, through home affairs, everytime she travels she has to get a new visa, and its a big mission to get her back into the country. She employs 200 people in South Africa, so if she leaves due to all of the red tape we lose 200 employees, we lose our resources we invested in her." [SCPT1]

When high growth enterprises leave the ecosystem, they usually take their intellectual property with them due to the unfavourable public policy laws that penalises them for keeping intellectual property in South Africa.

Many respondents mentioned that the ecosystem is strongly dependent on the role of government and public policy in reducing the turnover rate of entrepreneurial resources. They mentioned that currently government is not supporting the scale-up of high growth enterprises, and it is the main reason for their departure to stronger ecosystems.

> "It really breaks my heart when I have a conversation with some of my entrepreneurs, and they ask who can we contact to get some legal advice, so who in our network can we tap into the help take our IP offshore. We cant leave it in South Africa, we are going to start generating too much profit in South Africa, and we are going to start getting nailed by SARS. Fair enough they leave their staff here, but they take their IP outside SA, and it happens time and time again." [SCPT1]

> "So you have a government program running with criteria that is not relevant or applicable to elevation and high growth enterprises. You know there is so much red tape. It takes so long to get decisions made that it's easier to go and register you IP in Delaware where you've got a full support systems and within 24 hours, that's excoriated but lets say a week you can register a company and the IP which is way more attractive to foreign investors. Where as here you've got to go to two years of waiting for CIPC and you don't have money to [pause] even if you register your IP or you don't have money for that in South Africa and second of all it's not valid. It's only valid in South Africa. So government has a huge role play in being more maybe piloting actual collaboration with industry and the entrepreneurial sector." [FECPT1]

It was found in both regions that the lesser the diversity in the ecosystem the higher the level of interdependence. The presence of venture capitalist funds are scarce in Gauteng, which has resulted in a high level of interdependence between high growth entrepreneurs and venture capitalists in Gauteng, since venture capitalists needs to ensure the enterprise is successful in order to produce the required returns for investors and the entrepreneur needs to ensure that the enterprise is successful in order to receive future funding and support from financial development providers.

> "In the past three years we have become very hands on with our investments, I meet with my entrepreneurs every week, we help them solve day to day business problems and we mentor them and help provide them with the necessary to resources to succeed, it's the only we can succeed at the end of the day." [FGP1]

> "It is very difficult to get start-up funding and the investor circle is very small, so when I received the round of funding, I was definitely nervous for not messing up and growing the business, because I knew that the chances of me receiving funding if my past business failed would be slim to none." [EGP3]

In Cape Town, when high growth enterprises leave the ecosystem, the level of interdependence between the financial development providers and the support service organisations are increased, since financial development providers require high potential entrepreneurs that could successful scale their business, and support service providers require high growth entrepreneurs to provide exchange their skills, experiences, networks and finance with start-up entrepreneurs which improves the attractiveness of the support service organisations.

> "Many entrepreneurs will come and go but it's the relationships with our lawyers, accountants and ecosystem facilitators that we really rely on, you will find that many of them will want to give back, they'll either give back in terms of monetary contributions or in terms of their time where they will help mentor some of our entrepreneurs, they will help out with the selection process and they also advocate for program, they buy into our model and they do referrals, so they can say I met a fantastic business I think they can make a great entrepreneur." [FCPT1]
>
> "And then for the investors it's really about giving them a very curated access to the community. But mostly the start ups. Because what investors want, investors want to see who is doing what in the zoo, right. And also like what [pause] so for the investors really what we're doing, we're almost giving them a vetted list of start ups that they could potentially invest in. Hence we are enabling the start ups to have an online pitch deck that they then almost at different stages update you know, the information and then VC's and the angels have access to it. And it sort of makes those conversations quite simple from that sense." [SCPT1]

5.4 Summary of Findings and Results

The results from the data analysis and relevant coding, have revealed interesting findings that share similarities to the concepts and theories on biological ecosystems. Several new insights have emerged, which are summarised as follows.

Firstly, entrepreneurial actors including support service providers and academic institutions were motivated by a mutual need when deciding to interact within the entrepreneurial ecosystem. The lack of government support was also strongly mentioned during the interviews, however the influence of local government on facilitating an enabling entrepreneurial environment was instrumental to the development of Cape Town's entrepreneurial ecosystem.

Secondly, the 'fear of failure' culture in Gauteng's entrepreneurial ecosystem seems to be strongly related to the lack of success stories taking place in the region. The success stories emanating from Cape Town, were mentioned by respondents as having a positive influence on the gradual change of the entrepreneurial culture in the region.

Thirdly, the importance of diversity in ensuring the sustainability of an entrepreneurial ecosystem was a significant finding. The network structures of venture capitalists, allows for easier adaptability to a changing environment and it allows the VC's to limit the risk of their investments.

These results will be compared to the findings of the literature review in Chapter 2, which will allow for the assessment of the research question and propositions posited in Chapter 3.

CHAPTER 6: DISCUSSION OF RESULTS

The purpose of the study is to understand; using ecology concepts, models and theories that have been successfully applied to social sciences studies; the characteristics and interrelationships of the dynamic interactions between the different elements and processes in an entrepreneurial ecosystem that contain high growth enterprises in South Africa. The unanswered questions in academic literature have been identified, which has presented an opportunity for contributing to the academic research on entrepreneurial ecosystems. This research seeks to fill the entrepreneurial knowledge gap and contribute to practitioners understanding the of the entrepreneurial concept.

This chapter offers a detailed discussion of the findings and results obtained in Chapter 5 together with the findings obtained from the in-depth literature review in Chapter 2, the results of which will re-examine the posited research question and propositions presented in Chapter 3.

6.1 Research Proposition's 1 and 2

Research Proposition 1: The commitment of financial and support service providers in creating opportunities for high growth enterprises to come together will be indicated in the level of development of an entrepreneurial ecosystem.

Research Proposition 2: Social networks strengthen the entrepreneurial ecosystem by connecting the different actors and improving the exchange of resources ("feedbacks").

6.1.1 Need for interaction in the entrepreneurial ecosystem

Research proposition 1 aimed to determine the reasons for entrepreneurial actors to be committed to interacting with other actors and processes within the regional ecosystem, and how these reasons change over time as the ecosystem develops. The results shown in Chapter 5 indicated that entrepreneurial actors in an ecosystem are driven by a need for interaction which is influenced by the value of the entrepreneurial resources that could be exchanged and the alignment to the goals, objectives, credibility and culture of initially the actors within the ecosystem which later developed into the culture of the ecosystem.

Research proposition 2 aimed to determine under what conditions do social networks strengthen the entrepreneurial ecosystem. The results shown in Chapter 5 indicated for entrepreneurial actors to participate in social networks, there needs to be valuable resources accessible through credible actors and processes which are aligned to the goals, objectives,

credibility and culture of initially the actors within the ecosystem which later developed into the culture of the ecosystem.

6.1.1.1 Value of resources

The findings revealed that entrepreneurial actors will interact with other actors and processes if they require resources that are of value to them. This driver is supported by Ozdemir et al. (2016) who stated that entrepreneurial actors will pursue the acquisition of resources if it meets a demand of the actor. Whilst Ozdemir et al. (2016) also stated that the resource needs to realistically accessible, the findings revealed that entrepreneurs acquired valuable resources from outside their regional ecosystem that were not initially accessible to them, due to the lack of availability of the resource in their regional ecosystem and initially not forming part of a social network in the new regional ecosystem. These findings reveal that entrepreneurial actors are motivated by the value of resources and their level of demand to access this resource, and are willing to relocate to other regional ecosystems, regardless of their perceived accessibility of the resources, such that they are able to access these resources.

The findings revealed that the value placed on resources by entrepreneurial actors largely differed, and hence the reasons for entering a social network and interacting with other entrepreneurial actors also varied. Whilst entrepreneurs in Gauteng, valued financial capital as a resource of highest demand during the start-up phase of their enterprise which motivated these entrepreneurs to join social networks that had access to financial capital; entrepreneurs in Cape Town valued human capital as a resource of highest demand during the start-up phase of their business and joined social networks that had access to human capital. These findings are aligned to the study by Newbert & Tornikoski (2013), who mentioned that entrepreneurs will focus on creating strong network ties rather than weak ties, in order to successfully acquire resources at below market cost during the start-up phase of their enterprise. The main influence of this result, is the shortage of valuable resources in both the regional ecosystems. Cape Town entrepreneurs valued human capital, because there is a lack of talented employees to employ and a concentrated amount of venture capital funds in the region. Whereas in Gauteng, entrepreneurs value financial capital, because there is a shortage of financial capital providers in the region and a low amount of talented employees however more value is placed on the acquisition of financial capital. Therefore the view taken by the researcher in the literature review, which states that when there is an abundance of resources required by an entrepreneur, entrepreneurs will be able to form weak network ties which is line with the finding of Sullivan & Ford (2014), however when the potential for accumulated resources is low, then entrepreneurs should focus on building strong network ties with the resource providers. Spigel (2017) argues that each regional entrepreneurial ecosystem has a unique and diverse set of material attributes, this view supports the finding

the regional entrepreneurial ecosystem in Gauteng and Cape Town have vastly different material attributes which affects the needs of high growth enterprises and as a result the cause of interactions between different ecosystems will be different.

It was found in this research, that the needs of the entrepreneur alone will not be sufficient for exchanging valuable resources with other ecosystem actors. The needs of other entrepreneurial ecosystem actors also influences their decision on whether to interact in the ecosystem. De Prijcker et al. (2017) argues that high growth enterprises relocate to regions that contain a high amount of venture capital funds, which improves their chance of receiving initial venture capital than remaining in a region that has a low amount of venture capital. This view contradicts the finding that venture capital funds, rather than entrepreneurs, relocated from Gauteng to Cape Town with the aim of improving their probability of receiving favourable returns on their investments. Venture capitalists were influenced by the higher prevalence of high growth enterprises, and it made interactions from a post investment management point of view much easier if the venture capitalists were situated closer to the enterprise they support. From this we can infer that the scarcity of a resource influences the need of entrepreneurial actors to interact with the ecosystem, regardless of the role they play within the ecosystem.

The finding related the influence that government support had on the value of resources demanded by high growth enterprises and financial capital providers revealed that when public policy is not favourable, such that the entrepreneurial actors needs will not be satisfied due to unfriendly public policy and lack of support of government, and as a result negatively influence their intentions of interacting in the ecosystem. This view is line with the studies that showed that an unfavourable entrepreneurial policy environment inhibits and discourages entrepreneurs at the national level to participate in entrepreneurship (Dai & Si, 2018; Figueroa-Armijos & Johnson, 2016; Yoon et al., 2018). Notably this reveals that non-linear characteristics of entrepreneurial ecosystems demonstrated by Goswami et al. (2018), in that the role played by entrepreneurial actors have non-linear influences on the development of entrepreneurial ecosystems. Government plays a significant dis-proportionate larger role, compared to other entrepreneurial actors, in influencing the intention of entrepreneurs to become involved in an entrepreneurial ecosystem even in the presence of valuable resource that are demanded by a high growth enterprise.

6.1.1.2 Alignment

The importance of alignment of entrepreneurial actors to the regional culture, needs and level of support provided, is evident in the findings when observing the needs of venture capital funds and angel investors. These actors are required to produce a favourable return on entrepreneurial investment for their investors, and believe there is a scarcity of high growth entrepreneurs rather than financial capital in Gauteng, indicating a misalignment of needs between entrepreneurial actors. The findings revealed that venture capitalists invested in high growth enterprises who showed common attributes of commitment, determination and an understanding that they require support. Cardon et al. (2017) stated that angel investors and venture capitalists are influenced by enthusiasm, preparedness and commitment of entrepreneurs when making an investment decision, from this we can infer that when there is a misalignment between entrepreneurial culture, norms, values and beliefs that is expected from high growth entrepreneurs; then this may influence the decision on whether angel investors and venture capitalist will interact with an entrepreneur.

The importance of alignment of entrepreneurial actors to the regional culture, needs and level of support provided, is evident in the findings when observing the misalignment of needs between the public sector, academic institutions and the private sector which includes entrepreneurs. Armanios et al. (2017) demonstrated the positive influence of institutional intermediaries to promote private-public sector partnerships by aligning their needs to support high growth enterprises. Indeed, it was found in this research the dynamic transition of the level of collaboration between the private-public sector partnership in Cape Town in 2011. The institutional intermediary in the region Wesgro, the official Tourism, Trade and Investment promotion agency for Cape Town, has shown to have had a transformational role in the development of Cape Town's entrepreneurial ecosystem. The findings revealed that the change in political party in 2011 in Cape Town, brought about a new mandate and structure of Wesgro, who's board members comprises of individuals from the private sector. This finding is line with the observations made by Xing et al. (2018) who mentioned that internal pressure and external demand from a region for institutional change by local government, is influenced by the alignment of socio-political attributes between entrepreneurs, corporate executives and the local government. This alignment, which has been revealed in the finding to have occurred in Cape Town, provides enabling conditions for local government to play an effective role in promoting regional entrepreneurship. Further to this, literature finding have also revealed that new enterprises determine the location of their enterprise based on the identification of political party values and the roles the party plays in increasing entrepreneurial support services and natural and cultural amnesties. The research findings revealed that the mandate of Wesgro is to promote the values and resources of the region, which studies have shown to attract

corporate executives, entrepreneurs and additional resources to the region (Lehmann et al., 2018).

The findings revealed that academic institutions goals and objectives were not aligned to the needs of both the regional ecosystems, mainly due to the lack of support from the public sector in providing incentives and the necessary resources to effectively operate the institutions. As shown by Xing et al. (2018) if there is a lack of collaboration from the public sector, then the support from entrepreneurial actors in a region will be low.

6.1.1.3 Credibility

Kuhn & Galloway (2015) found that entrepreneurs who participated in peer to peer networks were more successful in terms of developing and sustaining the growth of their enterprise, than entrepreneurs who were not part of peer to peer networks. This view supports the finding that high growth enterprises identified peer to peer networks as the most important interaction that support their success during the growth stage of their enterprise. (Hanlon & Saunders, 2007) argues that that entrepreneurs have more frequent interactions to receive intangible support in the form of emotional support rather than tangible support in the form of financial capital, access to markets or human capital. The explanation given for this finding, is the presence of a larger amount of resource providers that can provide resources such as emotional when compared to tangible resource providers. Hence due to the accessibility and availability of emotional support that could be provided by friends and family, peers and other individuals; interactions between actors that provide emotional support occur more frequently. However the findings of the research contradicts this observation, since it was found that high growth enterprises valued the exchange of entrepreneurial knowledge and both personal and professional support they received from peers who been through and were currently going through the same experiences and events as the high growth enterprise. It was further found, that family and friends of high growth entrepreneurs were detractors in motivating and providing emotional support, as many of them did not understand the nature of the business and were culturally risk adverse. Hence the peer to peer network acted as a platform for like-minded entrepreneurs to interact and build trust amongst each other.

The findings revealed the strong relationship between entrepreneurial culture and the associated credibility of the entrepreneurial actors. High growth enterprises who had no prior success in scaling up an enterprise experienced greater difficulties in receiving venture capital funding than successful entrepreneurs in a former enterprise. Jaskiewicz et al. (2016) mentioned that former entrepreneurs possess and advantage over first time entrepreneurs, in that former entrepreneurs possess valuable resources in form of past experiences, knowledge and lessons learned as well as tangible resources; at the start of their enterprise. The findings

of the research show that venture capitalists reaffirmed this view by placing a higher priority in supporting former successful entrepreneurs, since it reduces the risk of making a bad investment. Hence this view supports the finding that new entrepreneurs experience greater difficulties in acquiring financial capital than successful entrepreneurs.

The findings also revealed a culture characterised by a fear of failure, since failed entrepreneurs were unable to receive financial capital to scale up their enterprise and either made use of personal funding, or exit their enterprise. This is similar to the finding by Baù et al. (2017) who showed that enterprise failures reduces the likelihood of entrepreneurs to launch a new enterprise due to the damage previously done on the entrepreneurs reputation and social capital which will affect the ability of the entrepreneur to acquire resources for the new enterprise. Whilst the findings and literature demonstrate the importance of success stories to promoting entrepreneurship in a region, the role of enterprise failures has been found to inhibit the growth of a risk averse culture. The findings revealed that former entrepreneurs who failed in their enterprise take up other entrepreneurial roles in the ecosystem, or exit the entrepreneurial ecosystem due to the negative stigma associated with failure in the region. This view is in line with the findings of Baù et al. (2017) who mentioned that enterprise failure can invoke feelings of worthlessness and may lead to depression of the entrepreneur, which is further extended by Kreiser et al. (2010) who showed that cultures with high uncertainty avoidance will have a significant negative impact on an enterprises risk-taking ability and intention of a failed entrepreneur to start a new enterprise.

The finding related to the lack of interaction between entrepreneurial actors and universities in both the regional ecosystems appears to be in line with study by Hayter (2016) who showed that in the absence of a technology transfer intermediary (TTO), collaboration between universities and entrepreneurial actors in commercialising innovative ideas will not take place, due to the misalignment to the values, norms and objectives of academic institutions and the entrepreneurial ecosystem. The findings in the research revealed that the objectives of the academic institutions is promoting the amount of research that are published and the number of students graduating rather than on adapting to the changing business environment. The effect of this misalignment is evident in the findings, that no entrepreneurial actor mentioned receiving support or collaborating with an academic institution in commercialising innovative ideas. Clarysse et al. (2014) has shown the importance of this collaborative relationship in attracting additional resources into the entrepreneurial ecosystem, from this we can infer that academic institutions have not had a positive influence in attracting corporate organisations and high growth entrepreneurs in the region.

It was found in this research, the significant influence that culture had on the intent of interaction by entrepreneurial actors in the ecosystem. The findings revealed that both regions lacked a strong entrepreneurial culture, with societal norms and beliefs being more aligned to risk aversion where the opportunity costs of starting or being employed by an enterprise outweighed the attractiveness of being employed by large corporate organisations and receiving high salaries. This is similar to the finding of Kibler et al. (2014) that entrepreneurial social legitimacy adopted by a region is influenced by the alignment of perceptions in the region of entrepreneurship, which in turn influences the availability of resources and support provided by the region. However the findings revealed a gradual shift in perceptions of entrepreneurship in Cape Town, this was largely influenced by the effect and volume of success stories showcasing the success of high growth enterprises in receiving the required resources and support from their region to scale their enterprise, and in some cases sell their enterprise for a substantial financial return which was being used to further develop the regional entrepreneurial ecosystem. The effects of these success stories on the regional entrepreneurial culture is in line with Lounsbury & Glynn (2001) who demonstrated that the importance of promoting and sharing entrepreneurial success stories has on harnessing a new venture identity which is used by other entrepreneurial actors and society to derive legitimacy of entrepreneurship, thereby allowing the creation and cultivation of new forms and improved forms of financial and social capital and market opportunities.

6.1.1.4 Conclusion

The detailed discussion of the findings and results obtained in Chapter 5 together with the findings obtained from the in-depth literature review in Chapter 2, the results have led to the refinement of research propositions 1 and 2 presented in Chapter 3.

Research Proposition 1: The commitment of private sector, public sector and academic institutions in creating opportunities for high growth enterprises to come together and providing access to valuable entrepreneurial resources will be indicated by the level of alignment of culture, values and norms amongst these three elements to the needs of high growth enterprises.

Research Proposition 2: Social networks that facilitate the exchange of valuable resources by connecting credible entrepreneurial actors, strengthen the entrepreneurial ecosystem.

6.2 Research Proposition 3

Research Proposition 3: Positive feedbacks of entrepreneurial resources will improve the success of high growth enterprises by benefiting from the human capital provided by past and present entrepreneurial ventures.

6.2.1 Resource Recycling

Another major theme that emerged from the findings, was the frequency of interactions between respondents and other actors in the ecosystem and the quality of resources exchanged amongst these actors, which helped explain the reason for their ongoing interactions with other actors and processes within the entrepreneurial ecosystem.

6.2.1.1 Frequency of interaction

Hanlon & Saunders (2007) mentioned that entrepreneurs have more frequent interactions to receive intangible support in the form of emotional support rather than tangible support in the form of financial capital, access to markets or human capital. The explanation given for this finding, is the presence of a larger amount of resource providers that can provide resources such as emotional when compared to tangible resource providers. However as shown in section 6.1.2, entrepreneurs viewed their interactions with their peers as more valuable than any other entrepreneurial resource accessible from ecosystem. The findings have revealed that entrepreneurs interacted most frequently with financial capital providers, and venture capitalists interacted most frequently with entrepreneurs than any other entrepreneurial actor in their social network. From this we can infer that the frequency of interaction between entrepreneurial actors in an ecosystem is not an accurate determinant of the strength of their relationship. This view is supported by Semrau & Werner (2014) who states that high growth entrepreneurs investment of time and energy in social networks outweighs value received from the resources they receive from their network, which is a result of their dependence on the network during earlier stages of their enterprise where there was a higher demand for the resources.

The findings revealed that entrepreneurs were more likely to continue their relationship with entrepreneurial mentors than any other actor in the entrepreneurial ecosystem. This view is in line with Watson (2007) who states that as entrepreneur's dependency on resources from their formal networks diminish, they reduce their interaction with the formal network however maintain their interaction with their informal network which is associated with enterprise survival.

Wuebker et al. (2015) argues that venture capitalists decision making is more strongly influenced by personal ties rather than the relative status of other venture capital funds

supporting an enterprise. This view supports the finding that financial development providers most frequently interact with their peers in the finance industry, having both a personal and professional relationship built over period of time. However, this relationship is seen as an inhibitor to the ability of venture capitalists to identify emerging trends in the ecosystem, not picked by their peers, due to the importance they place on their social networks when making investment decisions.

6.2.1.2 Quality of exchange of resources

The findings revealed that high growth enterprises were more likely to contribute and support the entrepreneurial ecosystem through their interactions and relationships that provided them with resources that contributed to the success of their enterprise. This relationship is in line with ecology theory, where positive feedbacks are created and acts as the main determinant to ecosystem resilience (Higgins, 2017). Similarly, from a social perspective, Mason & Harrison (2006) found that the experiences and perceptions gained from the interaction with the ecosystem, by enterprises who exit in the region, will affect their decision on whether they will re-invest their wealth in the region.

6.2.1.3 Conclusion

The detailed discussion of the findings and results obtained in Chapter 5 together with the findings obtained from the in-depth literature review in Chapter 2, the results have led to the refinement of research proposition 3 presented in Chapter 3.

Research Proposition 3: Recycling of entrepreneurial resources, provided by former successful high growth enterprises, will improve the success of high growth enterprises by benefiting from the high quality of resources exchanged.

6.3 Research Proposition 4

Research Proposition 4: Considering endogenous demand side shocks, more of the material attributes (Institutional and technological infrastructure, financial and capacity development providers) accumulated by well-functioning ecosystems will remain as opposed to the case for poorly-functioning ecosystems during the ‘release’ phase of the adaptive cycle.

6.3.1 Diversity

The findings revealed the important role of the diversity in resources, skills and experiences of the entrepreneurial actors in the ecosystem and was found to be influenced by the adaptability, where entrepreneurial actors participated in various roles over a period of time, and the level of interdependence between the actors for the resources exchanged.

6.3.1.1 Adaptability

Support service organisations that were interviewed in both Gauteng and Cape Town are managed by former entrepreneurs, which presents an advantage to areas in which entrepreneurs require support and are able to identify high growth enterprises during the start-up phase and connect these entrepreneurs to potential venture capitalists.

Brown and Mason (2016) stated that peer to peer networks, promotes adaptability by expanding the dynamic capabilities and that broadening the exposure of enterprises to the external business environment could be more effective than acquiring financial capital, in sustaining the growth of high growth enterprises. This view supports the findings relating to the importance of creating and building relationships with other actors in the ecosystem, entrepreneurial actors who used the social network in the ecosystem purely to gain resources without any intention of supporting the ecosystem, usually got 'weeded out' over a period of time due to their inability to adapt to the changing business environment due to the lack of support received from the ecosystem.

Wuebker et al. (2015) examined the role that status hierarchies play in the decision making of venture capitalists. It was found that venture capitalists decision making is more strongly influenced by personal ties rather than the relative status of other venture capital funds supporting the same enterprise. This view supports the finding that all financial capital providers in the study mentioned the presence of a hierarchical structure between themselves and the potential high growth enterprises who required support, which were put in place such that venture capitalists are able to identify which opportunities are worth considering for investment. The hierarchical structure helps the venture capitalists to adapt to a changing business environment by being protected and by avoiding direct interaction with and taking on risk from entrepreneurs. The high growth entrepreneurs who require funding interact with other actors in their social network, such as support service providers (mentors, lawyers, accountants etc.), who in turn refer attractive investments to venture capitalists. The findings also revealed the presence of a bias when entrepreneurial actors make recommendations to venture capitalists on which enterprise they should support, it was found that venture capitalists miss out on attractive investments due to their dependence on their network who may be specialised in a particular industry or is aligned to certain values, norms and objectives, such that high growth enterprises not aligned to these attributes are not recommended to venture capitalists for support. This view is in line with (Wuebker et al., 2015) the who mentioned that an over-reliance on strong personal network ties has shown to inhibit the access to new information and venture capitalists are faced with a trade-off between accessing new information and mitigating risk and uncertainty achieved through credible and accessible relationships.

6.3.1.2 Level of interdependence

Acs et al. (2017) argues that the entrepreneurial ecosystem approach is built on the emphasis on the interdependence among entrepreneurial actors, thereby having an aggregate value creation element in a particular region. The findings revealed this importance of interdependence since high growth enterprises experienced many difficulties in receiving resources to start-up their business, since they were not connected to a social network within the ecosystem which allowed for the required resources to be accessed. This view is in line with Thompson et al., (2017) who found that social networks presents an opportunity for previously dispersed, and unconnected entrepreneurial actors to come together and foster new relationships and collaborations. This makes entrepreneurial resources more accessible and increases the interdependence among entrepreneurial actors participating in the social network. (Huggins & Thompson, 2015) further elaborates on this view by stating that the ability of an entrepreneurial firm to innovate is significantly related to the network capital investment made in inter-organisational relationships and interactions. In particular, entrepreneurial firms who have a stronger ability to gather network capital will attain superior levels of innovation and enhance the permeability of the knowledge filter.

The formation of the Silicon Cape initiative is a key example of this view, where high growth entrepreneurs identified a need for interaction amongst start-up enterprises through their own start-up experiences, which led to the formation of a social network that provides support to previously disconnected entrepreneurial actors particularly during the start-up phase of their enterprise.

Whilst interdependence amongst entrepreneurial actors have revealed many benefits particularly for start-up enterprises, the discussion of the findings in section 6.2.1 Resource Recycling revealed that the entrepreneurial ecosystem is further developed and strengthened by successful high growth enterprises who have exited their enterprise and recycle their entrepreneurial resources to benefit other actors in the ecosystem and in particular the social network. This increases the level of interdependence amongst start-up enterprises and successful high growth enterprises, where the start-up enterprise could benefit from the financial capital and social capital of the high growth enterprise, and in turn the high growth enterprise is able to achieve a level of satisfaction by giving back to ecosystem that supported it, improve their knowledge on the entrepreneurial process and remain informed on the relevant trends affecting the business environment (Goswami et al., 2018). Bos & Stam (2014) in their study of the influence of young high growth firms, found that an increase in the emergence of high growth firms in an industry has a positive effect on the ensuing growth of that industry.

The findings on the turnover rate of high growth enterprises extends the views made by (Bos & Stam, 2014; Goswami et al., 2018), since it was found that when successful high growth enterprises exit their enterprise and decide to leave the regional entrepreneurial ecosystem, this has significant 'ripple' effect on other entrepreneurial ecosystem actors. Start-up enterprises dependency on the resources provided by high growth enterprises, negatively affects their ability to reach the growth stage of their enterprise. In addition, venture capitalists who are dependent on attractive investments by investing in high potential scale-up enterprises will notice a reduction in the amount of enterprises reaching this level growth. Those enterprises who eventually do receive the required support from outside their social network or ecosystem, to successfully exit their high growth enterprise, will not be incentivised to recycle their resources into the ecosystem, which influences a higher turnover rate of high growth enterprises in the regional ecosystem.

6.3.1.3 Conclusion

The detailed discussion of the findings and results obtained in Chapter 5 together with the findings obtained from the in-depth literature review in Chapter 2, the results have led to the refinement of research proposition 4 presented in Chapter 3.

Research Proposition 4: The ability of an entrepreneurial ecosystem to avoid the release of resources during the release phase of the adaptive cycle will be indicated by the level of diversity within the ecosystem.

6.3 Summary of Findings and Results

This chapter offered a detailed discussion of the findings and results obtained in Chapter 5 together with the findings obtained from the in-depth literature review in Chapter 2, the results of which allowed for the refinement of the posited research question and propositions presented in Chapter 3. The main findings and results are as follows:

- The scarcity of entrepreneurial resource influences the need of entrepreneurial actors to interact with the ecosystem, regardless of the role they play within the ecosystem.
- Government plays a significant dis-proportionate larger role, compared to other entrepreneurial actors, in influencing the intention of entrepreneurs to become involved in an entrepreneurial ecosystem even in the presence of valuable resource that are demanded by a high growth enterprise.
- Peer to peer networks are critical to the success of high growth enterprises by acting as a platform for like-minded entrepreneurs to interact and build trust amongst each other.

- New entrepreneurs experience greater difficulties in acquiring financial capital than successful entrepreneurs, due to the higher priority placed by venture capitalists, in supporting former successful entrepreneurs, since it reduces the risk of making a bad investment.
- This strong interactions and relationships among financial capital providers is seen as an inhibitor to the ability of venture capitalists to identify emerging trends in the ecosystem, not picked by their peers, due to the importance they place on their social networks when making investment decisions.
- When there is a high level of interdependence on the exit of successful high growth enterprises, from the regional entrepreneurial ecosystem, when these high growth enterprises leave the ecosystem without contributing their acquired resources, a significant 'ripple' effect is experienced on other entrepreneurial ecosystem actors, and weakens the entrepreneurial ecosystem.

The refined research propositions attained through the analysis of the research and the findings and the literature review is shown below.

Research Proposition 1: The commitment of private sector, public sector and academic institutions in creating opportunities for high growth enterprises to come together and providing access to valuable entrepreneurial resources will be indicated by the level of alignment of culture, values and norms amongst these three elements to the needs of high growth enterprises.

Research Proposition 2: Social networks that facilitate the exchange of valuable resources by connecting credible entrepreneurial actors, strengthen the entrepreneurial ecosystem.

Research Proposition 3: Recycling of entrepreneurial resources, provided by former successful high growth enterprises, will improve the success of high growth enterprises by benefiting from the high quality of resources exchanged.

Research Proposition 4: The ability of an entrepreneurial ecosystem to avoid the release of resources during the release phase of the adaptive cycle will be indicated by the level of diversity within the ecosystem.

CHAPTER 7: CONCLUSION

This chapter presents the concluding arguments and findings of the research, these findings were used to construct a model that could be used by entrepreneurial ecosystem actors in strengthening the entrepreneurial ecosystem that could create, grow and develop high growth entrepreneurship that would boost economic growth. The implications of the findings for practitioners and management are discussed, as well as the limitations of the research presented herein, and finally suggestions for future research is proposed.

The purpose of this research was threefold. Firstly, to contribute to the current academic literature on the under-theorised and under- developed entrepreneurial ecosystem concept. Secondly, to understand the successes, failures and difficulties faced by entrepreneurial ecosystem actors in creating, developing and sustaining high growth enterprises. Thirdly, to formulate a model, through the development of theory, for enabling entrepreneurial ecosystems in South Africa. This model is meant to benefit all actors in the entrepreneurial ecosystem by providing a set of guidelines that will assist in creating, developing and sustaining high growth enterprises in South Africa.

7.1 Principle Findings

The findings of the research revealed the characteristics and interrelationships of the dynamic interactions between the different elements and processes in an entrepreneurial ecosystem that contain high growth enterprises. It was found that entrepreneurial actors are driven by a need and an enabling culture, the alignment of which will result in the accumulation of valuable resources required to create, develop and sustain high growth enterprises in an ecosystem. However, the accumulation of resources over a period of time influences the cohesivity amongst entrepreneurial actors in the ecosystem, this leads to high controllability and prevents access to valuable resources from entrepreneurial actors who are not aligned to the needs and enabling, newly developed ecosystem culture. The entrepreneurial ecosystem becomes rigid in its structure, and its resilience is weakened, which poses a threat of destructing the ecosystem should an exogenous or endogenous shock take place in the region. The findings of this research is elaborated in further detail.

7.1.1 Entrepreneurial actors are driven by a need for interaction which is dependent on the value of resources demanded and alignment to the ecosystem culture

Entrepreneurial actors were found to be motivated by the value of resources and their level of demand to access these resources, and are willing to relocate to other regional ecosystems, regardless of their perceived accessibility of the resources, such that they are able to access these resources. Government plays a significant dis-proportionate larger role, compared to

other entrepreneurial actors, in influencing the intention of entrepreneurs to become involved in an entrepreneurial ecosystem even in the presence of valuable resource that are demanded by a high growth enterprise. Armanios et al. (2017) demonstrated the positive influence of institutional intermediaries to promote private-public sector partnerships by aligning their needs to support high growth enterprises. It is argued in this research, that an institutional intermediary that represents the needs of the private sector and makes use of the public sector platform and resources, will be critical in the regions ability to accumulate valuable entrepreneurial resources in the entrepreneurial ecosystem. Xing (2018) who mentioned that internal pressure and external demand from a region for institutional change by local government, is influenced by the alignment of socio-political attributes between entrepreneurs, corporate executives and the local government. literature finding have also revealed that new enterprises determine the location of their enterprise based on the identification of political party values and the roles the party plays in increasing entrepreneurial support services and natural and cultural amnesties. The research argued the important role academic institutions play in commercialising innovative ideas by collaborating with entrepreneurial actors in the ecosystem. Hayter (2016) who showed that in the absence of a technology transfer intermediary (TTO), collaboration between universities and entrepreneurial actors in commercialising innovative ideas will not take place, due to the misalignment to the values, norms and objectives of academic institutions and the entrepreneurial ecosystem. Similar to the need of an institutional intermediary to promote effective private-public sector partnerships, there is also a critical need for technology transfer intermediaries to promote effective academic institution – private sector partnerships, which will attract additional resources into the entrepreneurial ecosystem.

7.1.2 High levels of interdependence amongst entrepreneurial actors makes the entrepreneurial ecosystems vulnerable to endogenous and exogenous shocks

The findings revealed the role and influence that the level of interdependence played in determining the value of the resources exchanged in the entrepreneurial ecosystem. Interdependence amongst actors and processes was influenced by the accessibility of resources, the quantity of high growth enterprises exiting the ecosystem, and the diversity of resources, elements and processes in the entrepreneurial ecosystem. Semrau & Werner (2014) showed that high growth entrepreneurs investment of time and energy in social networks outweighs value received from the resources they receive from their network, which is a result of their dependence on the network during earlier stages of their enterprise where there was a higher demand for the resources. Hence it is critical that high growth enterprises who have successfully scaled their enterprises support the entrepreneurial ecosystem by providing ecosystem additionality due to entrepreneurial playing multiple roles in the

ecosystem, and thereby assisting entrepreneurs by contributing their expertise and social capital while at the same time gaining additional knowledge from their interaction with the entrepreneur (Goswami et al., 2018). This view is in line with Bhawe & Zahra (2018) who state that the diversity of resources highlights the heterogenous nature of entrepreneurial ecosystems and strengthens the ecosystem to adapt to shocks.

7.1.3 Positive feedbacks in the form of high growth enterprise resource recycling is critical to sustaining the development of an entrepreneurial ecosystem

Spigel (2017) showed the positive influence that the recycling of entrepreneurial resources have on the sustainability of an entrepreneurial ecosystem, which is achieved when successful high growth entrepreneurs exit their enterprise and recycle their knowledge and experiences (through activities such as mentoring), financial capital, human capital for other actors to make us of. These actors who made use of the recycled resources, will recycle their accumulated resources when they exit their enterprise, this process continues indefinitely, and strengthens the entrepreneurial ecosystem by ensuring that the resources created and acquired are escaping the ecosystem or being destroyed. The findings of the research have shown that resource recycling is a strong determinant of the resilience of an entrepreneurial ecosystem. This relationship is in line with ecology theory, where positive feedbacks are created and acts as the main determinant to ecosystem resilience (Higgins, 2017). However, a determinant as to whether successful entrepreneurs will recycle their accumulated resources once they exited their enterprise will be determined by the positive imprinting effects they have experienced during the entrepreneurial process in terms of their perceived value of support received from the entrepreneurial ecosystem (Mason & Harrison, 2007).

7.2 Contributions

Academic studies published thus far on entrepreneurial ecosystems, have been focused mainly on identifying the underlying attributes of successful ecosystems. These studies lack a theoretical foundation and is rather focused on the attributes of successful ecosystems and neglects the processes and interactions that take place within an entrepreneurial ecosystem, between the ecosystem attributes and elements. Each of the elements comprising an entrepreneurial ecosystem has been reviewed in this research for its applicability and relevance to the South African context, and the characteristics and interrelationships of the dynamic interactions between the different elements and processes in an entrepreneurial ecosystem that contain high growth enterprise have studied. The findings of this study have led to the creation of a new model, shown in Figure 6, that is meant to benefit all actors in the entrepreneurial ecosystem by providing a set of guidelines that will assist in creating, developing and sustaining high growth enterprises in South Africa. The details of this model are explained in further detail.

The research revealed that the entrepreneurial ecosystem could adapt to exogeneous and endogenous shocks during a phase in which there is slow growth in resource accumulation, high connectedness amongst ecosystem actors and low resilience; by firstly maintaining alignment to the needs and culture shared by the public sector (local government in the case of South Africa), private sector (which includes corporate organisations, financial capital providers and entrepreneurs) and academic institutions. The findings of the research showed that entrepreneurial actors in an ecosystem are driven by a need for interaction which is influenced by the value of the entrepreneurial resources that could be exchanged and the alignment to the goals, objectives and culture of initially the actors within the ecosystem which later developed into the culture of the ecosystem. Key to this alignment is the role of culture, which will determine the level of collaboration between the public sector, private sector and academic institutions. If entrepreneurial actors in these different sectors share the same goals, norms, values, beliefs, prioritise credibility, socio-political beliefs; then effective collaboration take place which will lead to the strengthening of the entrepreneurial ecosystem through the rapid accumulation of high quality, diverse resources (the region will also be able to attract resources from outside the region by actors who align to the needs and culture of the ecosystem) ; that is made easily accessible to entrepreneurial actors which will lead to high degree of resource recycling and opportunity creation shared amongst entrepreneurial actors through recommendations and knowledge spill-overs respectively. The strength of this entrepreneurial ecosystem can be maintained or further developed by increasing the resilience of the ecosystem, which can be achieved through a moderate level of interdependence (achieved through a higher level of resource diversification), moderate levels of cohesiveness to a particular industry and diversity in roles and relationships among both entrepreneurial ecosystem within the ecosystem and more importantly a diverse network connection to other regional ecosystems across the world. This will allow the entrepreneurial ecosystem not to ‘self-destruct’ during endogenous or exogenous shocks due to a diverse set of capabilities and resources accessible from both internally and externally of the entrepreneurial ecosystem.

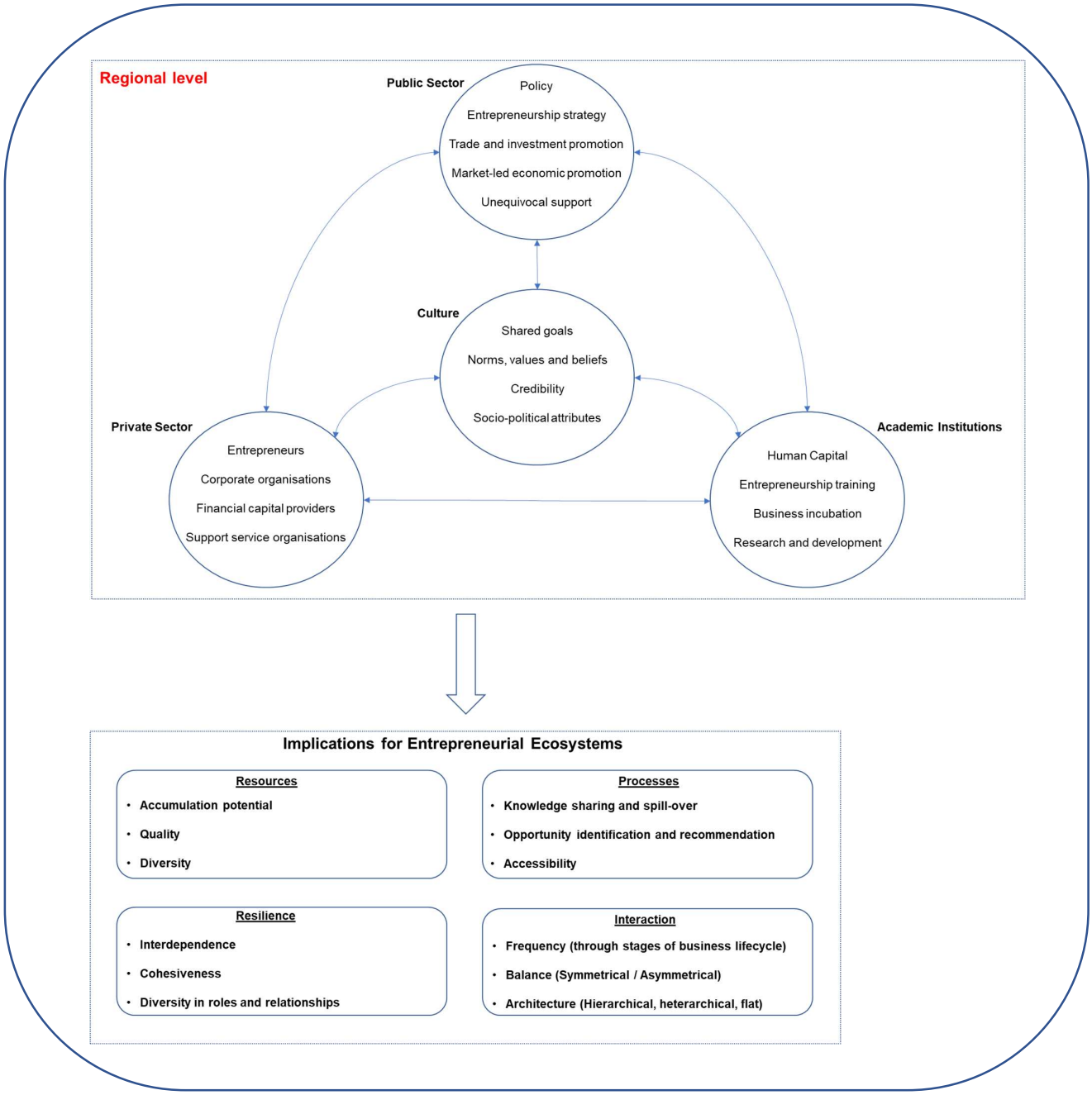

Figure 6. Conceptual model

The main contributions of the research presented herein are twofold. Firstly, it contributes to the existing literature on the entrepreneurial ecosystem phenomena by extending the current academic literature on the under-theorised and under- developed entrepreneurial ecosystem concept. Academic research on the entrepreneurial ecosystem phenomenon is missing the critical understanding of the characteristics and interrelationships of the dynamic interactions between the different elements and processes in an entrepreneurial ecosystem that contain high growth enterprises (Acs et al., 2017; Brown & Mason, 2017; Mack & Mayer, 2016). Academic scholars in the entrepreneurship field have made numerous calls for theoretical contributions in understanding the dynamics of entrepreneurial ecosystems. Most recently, The Entrepreneurship and Regional Development Journal has called for academic articles that provides insights into the dynamics of entrepreneurial ecosystems based on a theoretical foundation rather than empirical findings which are static and applicable only to a particular geographical region. The journal has identified a key theme that is missing in academic literature and needs to be addressed, the theme is based on the understanding of the interactions in the entrepreneurial ecosystem, specifically how the different elements and processes dynamically interact within an entrepreneurial ecosystem (Audretsch et al., 2018). This key theme has been studied in this research and a model has been created to encapsulate the findings for academic and practical use by practitioners.

Secondly, the successes, failures and difficulties faced by entrepreneurial ecosystem actors in creating, developing and sustaining high growth enterprises were studied. Which led to the formulation of a new model, through the development of theory, for enabling entrepreneurial ecosystems in South Africa. This model is meant to benefit all actors in the entrepreneurial ecosystem by providing a set of guidelines that will assist in creating, developing and sustaining high growth enterprises in South Africa.

7.3 Implications for policymakers

The findings presented in this research has a direct influence on policymakers as evidenced in Chapter 1: Introduction to the research problem. There is presently a misalignment between policy initiatives and needs of high growth enterprises to develop and sustain high revenue or employee growth beyond a three-year period. Current policy initiatives are focused on supporting small businesses to sustain economic growth, whereas the findings of the research reveal high rates of early-stage entrepreneurial firms may not be a driver of economic efficiency, and that innovation-driven entrepreneurship and improvement-driven entrepreneurship enhances economic efficiency. The aspirations of small businesses are not necessarily to grow the business, and achieves growth mainly through inflation. In contrast entrepreneurial ventures operate with the primary objective to make a profit and grow the business, whilst creating employment. The main characteristic that distinguishes a small

business from an entrepreneurial venture is the adoption of innovative practice (Nieman & Nieuwenhuizen, 2014). High growth entrepreneurship has shown the greatest of potential compared to the other forms of entrepreneurship, in contributing to economic growth (Bianchini et al., 2017; Du, J. & Temouri, 2015; Lee, 2014) and employment creation (Brown & Mawson, 2016a; Coad et al., 2014; Li et al., 2016).

Hence it is critical for practitioners to be made aware of the importance of supporting entrepreneurial ecosystems in South Africa, as a policy initiative rather than focusing all of their resources on small businesses, which may not lead to economic growth.

The findings revealed that there is a lack of collaboration and support from policy makers, high growth enterprises who interacted with government mentioned the extreme difficulties experienced in exchanging resources with government. One respondent mentioned:

> "We raised about 1 and a half million rand from them. It's so painfull I almost shot myself. It was a year long painfull process. They sent in consultants to come and analyse what we were doing, that didn't have a clue what was going on. Just it was crazy. It was very very hard to get."

The new model presented in this research, encapsulated the importance of policymakers to collaborate with the private sector and academic institutions, to enable these entrepreneurial actors to provide more cohesive support to create develop and sustain high growth enterprises. In addition, policy makers should be promoting the success stories of high growth entrepreneurs which will stimulate entrepreneurial social legitimacy in regions that are risk adverse to entrepreneurship.

7.4 Implications for other entrepreneurial actors

The findings presented herein should significantly influence the approach taken by entrepreneurial actors, particularly high growth enterprises when determining how a particular ecosystem will support their needs and the perceived nett effect of their interactions with other entrepreneurial ecosystem actors. The research showed a strong influence of ecosystem culture, and the importance of entrepreneurial actors to align to this culture in order to receive the required support. One high growth enterprise mentioned the act of 'code switching', referring to an artificial change of the entrepreneurs social norms, beliefs and values when interacting in the entrepreneurial ecosystem, such that they could build credible relationships and benefit from the resources within the entrepreneurial ecosystem.

The findings presented herein demonstrated the dynamic interactions occurring in entrepreneurial ecosystems, that can lead to possible destruction if the cohesiveness of the interactions amongst entrepreneurial actors becomes so strong, that the ecosystem becomes rigid, and in the absence of diversity in terms of resources and skills, social capital and

networks outside of the region; the entrepreneurial ecosystem could enter the 'release' phase (Holling, 2001), all of the accumulated resources is released and the connectedness amongst the elements and processes in the ecosystem dissolves and becomes low. The ecosystem culture gets destroyed, and the ecosystem enters the phase of 're-organisation' in which a new culture can be created and will influence the future prosperity of the entrepreneurial ecosystem in its ability to create, develop and sustain high growth enterprises. Entrepreneurial actors should be cognisant of the dynamic behaviour of the entrepreneurial ecosystem, such they are able to align their behaviours and interactions that will further develop or sustain the strength of the ecosystem.

7.5 Limitations

Whilst the study has made valuable contributions to the existing literature on entrepreneurial ecosystems, and to policy makers and other entrepreneurial actors, there were inherent limitations associated with this qualitative study. These limitations are discussed in further detail.

The limitations pertaining to the research design used is explained in section 4.9 Limitations in Chapter 4. The research was unable to generalise the findings, due to the heterogenous nature of the ecosystem phenomena (Spigel, 2017). However, the heterogeneity nature of the entrepreneurial ecosystem concept can be generalise as it was shown from the literature review, and findings from the research that each region has unique social, material and cultural attributes. Apart from this finding, the new model presented and the theoretical propositions and contributions made needs to be validated by adopting a quantitative study, which makes the generalisability of the findings possible by applying the findings to a larger population (Saunders and Lewis, 2012).

There were difficulties posed in identifying high growth enterprises in South Africa, since data on revenue and employment growth was made accessible to the public. Hence, the researcher was dependant on interacting with support service organisations such as ANDE and Endeavour, who supports high growth enterprises, in order to identify potential respondents.

Majority of the high growth enterprise respondents that participated in the study from Cape Town, were involved in the technology sector. Whereas in Gauteng, the respondents were evenly distributed amongst various industries. Hence industry specific influences may have played a role in the outcome of the findings.

7.6 Suggestions for future research

Due to the lack of generalisability of the findings in this research, it is recommended that a quantitative study be performed through empirical validation of the proposed model, findings and theoretical propositions. However entrepreneurial ecosystems are a social phenomenon (Colombelli, Paolucci, & Ughetto, 2017; Goswami et al., 2018; Spigel & Harrison, 2017), which is not governed by scientific laws, which requires the study of human beings as opposed to material objects that don't possess measurable feelings and attitudes (Saunders et al., 2016). Hence challenges will be posed to getting answers from social actors on the question of 'why' they make certain decisions and exhibit behaviours that influence the entrepreneurial ecosystem. An alternative approach could be to conduct an explorative, multi-method qualitative study on other entrepreneurial regions in Africa; such as Nairobi, Kenya and Accra, Ghana and Lagos, Nigeria; which will allow for a comparison of the findings.

The study revealed the difficulties experienced by entrepreneurial actors who were not aligned to the ecosystem culture in receiving the demanded resources, and many actors eventually left the ecosystem. This indicates a 'dark-side' (Spigel & Harrison, 2017) of entrepreneurial ecosystems, which may negatively affect those individuals not participating in the entrepreneurial ecosystem, due to the high cost of living and lack of employment in industry specific regions. This leads to a phenomenon called 'gentrification', which could drive out individuals who are unable to afford the cost of living in the region. From a South African, perspective, a country which has one of the highest rate of income inequality in the world (OECD, 2018), the strengthening of entrepreneurial ecosystems through high levels of cohesion and interconnectedness, may worsen inequality and unemployment. The researcher proposes a future study to be done on the effects of a developing entrepreneurial has on the prosperity and quality of life of those individuals located in the region but not participating in the entrepreneurial ecosystem.

7.7 Conclusion

Entrepreneurial ecosystems have been identified as a key enabler in supporting the growth of high growth enterprises, which could stimulate economic growth. However there is a lack of understanding of the entrepreneurial concept and its influence on creating economic growth by policy makers, and a lack of understanding of the characteristics and interrelationships of the dynamic interactions between the different elements and processes in an entrepreneurial ecosystem that contain high growth enterprises. This has led to practitioners copying other regions ecosystems without success. Entrepreneurial ecosystems are a social phenomenon, which is shaped by culture, history and institutional settings (Mack & Mayer, 2016), hence copying and adopting a successful regions entrepreneurial ecosystem framework will be

ineffective and may cause additional harm to the already fledgling entrepreneurial environment (Neumeyer & Corbett, 2017).

This study contributed to both policy and academic practitioners understanding of the dynamic behaviour of entrepreneurial ecosystems, by studying this key theme and providing a model to encapsulate the findings for academic and policy use by practitioners. This model is meant to benefit all actors in the entrepreneurial ecosystem by providing a set of guidelines that will assist in creating, developing and sustaining high growth enterprises in South Africa. Future research on the entrepreneurial ecosystem concept is encouraged, in order to gain a better understanding of the secondary effects that lead to strengthening an entrepreneurial ecosystem, as well as creating a generalisable conceptual framework that has been widely tested for validity, that can be used by all entrepreneurial regions across the world.

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APPENDIX 1: LETTER OF CONSENT AND SEMI-STRUCTURED INTERVIEW GUIDE

Details of Participant
Full Name: Name of Organisation: Job Title and Role in the Organisation:

Informed Consent Letter

I am conducting research on regional entrepreneurial ecosystems with aim of gaining insights into the characteristics and interrelationships of the dynamic interactions between the different elements and processes in an entrepreneurial ecosystem. Our interview is expected to last 60 minutes, and will help us understand how to enable entrepreneurial ecosystems to support, develop and sustain high growth enterprises.

The interview will be audio recorded with your consent. **Your participation is voluntary and you can withdraw at any time without penalty**. In order to ensure confidentiality, all data provided will be stored without identifiers and reported without disclosing the personal details of both yourself and your organisation. If you have any concerns, please contact my supervisor or me. Our details are provided below.

Researcher name:	Trinelle Govender
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Phone:	071 897 5306
Research supervisor name:	Dr. Anastacia Mamaboloa
Email:	mamaboloa@gibs.co.za
Phone:	011 771 4000

Signature of participant: _____

Date: _____

Signature of researcher: _____

Date: _____

High Growth Enterprise
Background information
Please describe how your enterprise was founded.
Please describe the nature of your enterprises business activities.

How many employees (Permanent, fixed term contract, casual) do you have?
Does your firm own any patents, copyrights or trademarks? Please describe them?
What percentage of sales are to international customers?
What has been the most significant factors that has contributed to the performance of your enterprise?
What are the challenges faced by your enterprise to sustain or improve current growth?
What are your long-term goals for the enterprise?
Connectedness of the Entrepreneurial Ecosystem
Please draw a schematic diagram of the entrepreneurial network in which you operate (this will include any formal or informal relationship with an organisation / institution / individual that is currently supporting or being supported by your enterprise).
Please describe the background of each actor and your relationship with the actor starting from when you first met?
Are there any actors currently not in your network but in your region, who you feel will be beneficial in supporting/being supported by your enterprise? If Yes, please describe why they are needed.
Availability of resources in the Entrepreneurial Ecosystem
What resources did you require from your network, starting from the start-up phase of your enterprise?
What were the processes followed to access these resources?
Are any of the actors who assisted you in acquiring these resources not part of your current network? If Yes, explain why?
Resource Recycling
Tell me about the entrepreneurial mentors or coaches that have supported you since the startup phase of your enterprise (any actor sharing their knowledge, skills and experience with your enterprise).
Tell me about the current role played by failed enterprises that were in your network.
Policy
Has your enterprise benefited from any government policy, initiative or support programme? If Yes, please describe how you have benefited from the policy, initiative or programme?
What has been the role played by government in your enterprise's growth since the start-up phase?
How has each of the following policy elements influenced the performance and operations of your enterprise (Business licensing and permits, customs and trade regulations, labour regulations, tax administration, tax rates)?
Understanding the dynamic behaviour of Entrepreneurial Ecosystems
Thinking back, tell me about a time when it was difficult to receive/provide support from/to your network and how you overcame this challenge (Describe why, during which period of time and the growth phase of your enterprise), characterised by a: • Lack of financial support (debt finance, equity finance, grants) • Lack of physical infrastructure and services (electricity, water, high speed internet, Mobile networks, transportation) • Lack of support from entrepreneurial support service providers (Incubators, accelerators, tax services, legal services, advisors) • Lack of skilled employees to hire • Breakdown in communication in the entrepreneurial network • Strained relationship between other ecosystem actors • Lack of support from mentors • Obsolete or Ineffective process to identify and acquire resources
Thinking back, tell me about a time in which any of the following forces influenced a major change in your enterprise and network: • Supply or demand shocks • Competitors • Policy and regulations

Counterfactual Questions
Is there anything else that you consider to be important about your networking activities that I haven't asked?
From your perspective, which are the most relevant/important actors and processes needed to create, develop and sustain high growth enterprises?
What support do you need to increase your enterprises innovation capabilities?

Entrepreneurial Support Organisations/Institutions/Individuals
Background information
Please describe the nature of your organisations business activities.
How many employees (Permanent, fixed term contract, casual) do you have?
Please describe the role your organisation plays in supporting high growth enterprises?
What is the average success rate of the high growth enterprises you support, to sustain their growth beyond a three-year period?
What selection criteria do you use to determine which high growth enterprise you will support?
What are the challenges faced by your organisation to support the creation, development and sustainment of high growth enterprises?
Connectedness of the Entrepreneurial Ecosystem
Please draw a schematic diagram of the entrepreneurial network in which you operate (this will include any formal or informal relationship with an organisation / institution / individual that is currently supporting or being supported by your enterprise).
Please describe the background of each actor and your relationship with the actor starting from when you first met?
Are there any actors currently not in your network but in your region, who you feel will be beneficial in supporting/being supported by your organisation? If Yes, please describe why they are needed.
Availability of resources in the Entrepreneurial Ecosystem
Do you feel high growth enterprises in your region are provided with the adequate resources to remain sustainable?
Please describe the resources you provide to high growth enterprises.
What are the processes put in place to access the resources you provide?
Which actors in your network assists you in delivering these resources?
Which resources have you previously made available to enterprises but have since stopped?
Resource Recycling
Have you provided any mentorship/coaching support to high growth enterprises? If Yes, please describe the background of the enterprise and your relationship with the enterprise starting from when you first met.
In your experience, what effect do entrepreneurial mentors/coaches have on the performance of high growth enterprises?
Tell me about the current role played by failed enterprises that you supported.
Policy
Has your organisation benefited from any government policy, initiative or support programme? If Yes, please describe how you have benefited from the policy, initiative or programme?
In your experience, what has been the role played by government in supporting enterprise's growth from the start-up phase?
Understanding the dynamic behaviour of Entrepreneurial Ecosystems
Thinking back, tell me about a time when it was difficult to provide the required support to all of the entrepreneurial actors in your network (Describe why and during which period of time).
Did you provide support to enterprises who were previously not part of your network? If Yes, tell me more about the actor/organisation and your decision to support them?

Thinking back, tell me about a time in which any of the following forces influenced a major change in your ability to support high growth enterprises: • Supply or demand shocks • Competitors • Policy and regulations
Did you adopt or abandon any processes in delivering these resources and support?
Counterfactual Questions
Is there anything else that you consider to be important about your networking activities that I haven't asked?
From your perspective, which are the most relevant/important actors and processes needed to create, develop and sustain high growth enterprises?
In your opinion, how can high growth enterprises increase their innovation capabilities?

APPENDIX 2: LIST OF CODES CREATED

Enablers: Culture

Enablers: Dynamic

Enablers: Effects

Enablers: Goals

Enablers: Lifestyle

Enablers: Network

Enablers: Policy

Enablers: Static

General Statements:

Inhibitors: Bias

Inhibitors: Controllable

Inhibitors: Culture

Inhibitors: Dynamic

Inhibitors: Effects

Inhibitors: Goals

Inhibitors: Lifestyle

Inhibitors: Long Term

Inhibitors: Markets

Inhibitors: Network

Inhibitors: Policy

Inhibitors: Short Term

Inhibitors: Static

Inhibitors: Uncontrollable

Interactions: Actor

Interactions: Choice

Interactions: Commitment

Interactions: Dynamic

Interactions: Lifecycle Stage

Interactions: Negative

Interactions: No Value Add

Interactions: Positive

Interactions: Priority

Interactions: Process

Interactions: Static

Interactions: Structure

Interactions: Value Add

Relationships: Both

Relationships: Collaboration

Relationships: Competition

Relationships: Contractual

Relationships: Dynamic

Relationships: Exploitive

Relationships: Not Present

Relationships: Peer

Relationships: Personal

Relationships: Present

Relationships: Professional

Relationships: Recycling

Relationships: Static

Resources: Diversity

Resources: Dynamic

Resources: Education

Resources: External

Resources: Finance: Type

Resources: Internal

Resources: IP & Patents

Resources: Policy

Resources: Quality

Resources: Quantity

Resources: Salary

Resources: Social: Type

Resources: Static

Resources: Talent

APPENDIX 3: CONFIRMATION OF ETHICAL CLEARANCE

Gordon Institute of Business Science
University of Pretoria

20 June 2018

Govender Trinelle

Dear Trinelle

Please be advised that your application for Ethical Clearance has been approved.

You are therefore allowed to continue collecting your data.

Please note that approval is granted based on the methodology and research instruments provided in the application. If there is any deviation change or addition to the research method or tools, a supplementary application for approval must be obtained

We wish you everything of the best for the rest of the project.

Kind Regards

GIBS MBA Research Ethical Clearance Committee

APPENDIX 4: TURNITIN REPORT