

https://dspace.org/

Entrepreneurial orientation of the City of Johannesburg

Malakoane, Jones

2019
University of the Witwatersrand, Johannesburg
https://hdl.handle.net/10539/38843
Malakoane, Jones. (2019). Entrepreneurial orientation of the City of Johannesburg [Master's dissertation, University of the Witwatersrand, Johannesburg]. WireDSpace. https://hdl.handle.net/10539/38843

Downloaded from a DSpace repository. https://dspace.org/



Entrepreneurial orientation of the City of Johannesburg

Jones Malakoane

511538

A research article submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Business Administration

Johannesburg, 2019

Protocol number: WBS/BA511538/634

March 2019

DECLARATION

I, _____, declare that this research article is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the Graduate School of Business Administration, University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Signed at ……

On the …….. day of …… 20……..

DEDICATION

To my mother, you taught me how to read and write.

ACKNOWLEDGEMENTS

I want to express my gratitude to my wife, Nombeko Malakoane, for her constant support and prayers. I would like to thank my brothers Lebohang and Sello Malakoane, thank you for listening and praying for me.

I would like to thank the Executive Director at the City of Johannesburg Department of Economic Development, Ms Tembeka Mhletjwa, for her approval of data collection. A profound gratitude to my supervisor, Dr McEdward Murimbika. I always came out of our contact sessions motivated and inspired to do more, God knows that I could not have asked for a better supervisor.

I would like to thank Mr Innocent Mwavura my data scientist who helped me with my data analysis and Jennifer Croll who helped with the editing. Lastly, all thanks to my MBA colleagues whom we have walked this journey together, special recognition Kgotso Buys, Mabule Modiba, Dylan Pillay and Thipe Khaole.

SUPPLEMENTARY INFORMATION

Nominated journal**: South African Journal of Business Management**

Supervisor/ Co-author: **Dr McEdward Murimbika**

Word count: **14988**

Supplementary files:

ABSTRACT

The notion of entrepreneurial orientation (EO) is important because it contributes to the fundamental apprehension of entrepreneurship. Increasingly, attention is being paid by scholars and policy makers to the concept of entrepreneurial ecosystems (EE) as incubators of innovation, creativity and entrepreneurship. Though the concept is still in its embryonic phase, well performing entrepreneurial ecosystems such as the Silicon Valley in California are the envy of many governments striving for economic success, through promotion of entrepreneurship. The primary objective of this study was to explore the relationship between the perceived entrepreneurial orientation of the City of Johannesburg Department of Economic Development (CoJ-DeD) and the perceived City of Johannesburg's (CoJ) local EE performance. EO of an organisation, for the purpose of this study, is reflected in the organisation's innovativeness, proactiveness and risk-taking abilities while EE was measured by the three variables, opportunity exploitation (OE), opportunity recognition (OR) and entrepreneurial activity (EA).

The data relating to the perceived city's EE performance was from 109 usable questionnaires collected from a target sample size of 150, the sample's population was comprised of nascent entrepreneurs, early start-up and established business owners in the CoJ. The data concerning perceived EO of CoJ-DeD officials was from 46 usable questionnaires, this sample was collected from a population of 50 CoJ-DeD officials, comprised of middle and senior managers. The measuring instruments construct validity was evaluated by means of Cronbach alpha coefficients and principal component exploratory factor analysis. The Welch's t-test was utilized to assess the study's conceptual framework model.

The results showed that EO of the CoJ-DeD officials is defined by proactiveness, innovativeness and risk-taking and the city's local EE perceived performance is defined only by opportunity exploitation and opportunity recognition. The results also showed a positive relationship between innovation and opportunity recognition, proactiveness and opportunity recognition and between risk-taking and opportunity recognition. It is

recommended that entrepreneurship becomes the dominant strategic thinking in the CoJ to help unlock opportunities and new sources of value, services and innovation.

Keywords: Entrepreneurial orientation, Entrepreneurial ecosystem, City of Johannesburg

TABLE OF CONTENTS

DECLARATION ..... **I**

DEDICATION ..... **II**

ACKNOWLEDGEMENTS ..... **III**

SUPPLEMENTARY INFORMATION ..... **IV**

ABSTRACT ..... **V**

LIST OF TABLES ..... **XII**

LIST OF FIGURES ..... **XIII**

CHAPTER 1: INTRODUCTION **1**

1.1 Introduction 1

1.2 Context of the research study 2

1.3 Problem statement definition 4

1.3.1 Main problem *4*

1.3.2 Sub-problems *5*

1.4 Research questions addressed by the study 5

1.5 Knowledge gap and contribution of the research study 6

1.6 Delimitations of the research study 6

1.7 Definitions of terms 7

1.7.1 Entrepreneurial Orientation *7*

1.7.2 Entrepreneurial Ecosystem *7*

1.8 Assumptions of the research study 8

1.9 Conclusion 9

CHAPTER 2: LITERATURE REVIEW 10

2.1 Introduction 10

2.2 Dependent variables 10

2.2.1 Entrepreneurial Ecosystem 10

2.2.2 Opportunity recognition and exploitation 12

2.2.3 Entrepreneurial activity 13

2.3 Independent variables Entrepreneurial Orientation 14

2.3.1 Innovativeness 16

2.3.2 Proactiveness 17

2.3.3 Risk taking 19

2.4 Conceptual framework model 22

2.5 Conclusion 23

CHAPTER 3: RESEARCH METHODOLOGY 24

3.1 Introduction 24

3.2 Research paradigm 24

3.3 Research Design 25

3.4 Population and Sample 25

3.4.1 Population 25

3.4.2 Sample and sampling method 25

3.5 Research Instruments 27

3.5.1 EO dimensions research instrument 27

3.5.2 EE performance research instrument 27

3.6 Data analysis and interpretation 29

3.6.1 Descriptive statistics 29

3.6.2 Correlation Analysis 29

3.6.3 Exploratory Factor Analysis 29

3.6.4 Welch's t-Test analysis 30

3.7 Validity 30
3.7.1 External Validity 30
3.7.2 Internal Validity 31
3.8 Reliability 31
3.9 Limitations 31
3.10 Ethical Considerations 32
3.11 Conclusions 32
CHAPTER 4: EMIRICAL RESULSTS FROM THE STUDY 33
4.1 Introduction 33
4.2 Descriptive profile of the study sample 33
4.2.1 EE demographic data 33
4.2.2 EO demographic data 35
4.3 Testing correlation of the scales 37
4.4 Reliability testing of the scales 39
4.4.1 EE scale 39
4.4.2 EO scale 39
4.5 Exploratory factor analysis (EFA) of scale 41
4.5.1 EE and EO scale EFA suitability test 41
4.5.2 EE and EO scale EFA factors 41
4.5.3 Scree Plots EE and EO scales 43
4.5.4 Rotated component matrices EE and EO scales 45
4.6 Hypotheses Testing 46
4.6.1 Conceptual framework model 46
4.6.2 Relationship between innovativeness and entrepreneurial ecosystem performance. 47
4.6.3 Relationship between proactiveness and entrepreneurial ecosystem performance. 49

4.6.4 Relationship between Risk-taking and Entrepreneurial ecosystem performance. 50

4.7 Conclusion 51

CHAPTER 5: DISCUSSION OF THE RESULTS 53

5.1 Introduction 53

5.2 Descriptive profile of the study sample 53

5.2.1 Entrepreneurial Ecosystem sample demographic data 53

5.2.2 Entrepreneurial Orientation sample demographic data 54

5.3 Testing correlation of the scale 55

5.4 Testing the reliability of the scales 55

5.5 Exploratory Factor Analysis 56

5.5.1 Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity 56

5.5.2 EFA of the Entrepreneurial Ecosystem and Entrepreneurial Orientation scale 56

5.6 Hypotheses Testing 57

5.6.1 Relationship between Innovativeness and entrepreneurial ecosystem performance. 57

5.6.2 Relationship between proactiveness and entrepreneurial ecosystem performance. Testing $H_{2A, 2B.}$ 58

5.6.3 Relationship between risk-taking and entrepreneurial ecosystem performance 58

5.7 Conclusion 59

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS 61

6.1 Introduction 61

6.2 Conclusions of the study 61

6.2.1 Research's main objective 61

6.2.2 Hypotheses t-test results 62

6.2.3 Relationship between innovativeness and entrepreneurial ecosystem performance 63

6.2.4 Relationship between proactiveness and entrepreneurial ecosystem performance 63

6.2.5 Relationship between risk-taking and entrepreneurial ecosystem performance 64

6.3 Recommendations..... 64

6.4 Areas for further research..... 65

REFERENCES…… 66

APPENDIX 1: WELCH'S T-TEST RESULSTS 75

Appendix 1A: Welch's t-test results for Hypothesis $H_{1A,1B}$ 75

Appendix 1B: Welch's t-test results for Hypothesis $H_{2A,2B}$ 76

Appendix 1C: Welch's t-test results for Hypothesis $H_{3A,3B}$ 77

APPENDIX 2: RESEARCH INSTRUMENTS 78

Appendix 2A: Department of Economic Development City of Johannesburg (CoJ) Entrepreneurial Orientation..... 78

Appendix 2B: City of Johannesburg (CoJ) Entrepreneurial Ecosystem Performance 81

APPENDIX 3: UNIVERSITY LETTERS 85

Appendix 3A: Survey/ interview participant introduction 85

Appendix 3B: Confidential disclosure undertaking..... 86

APPENDIX 4: COVER LETTERS 87

Appendix 4A: Cover letter for entrepreneurial ecosystem performance research instrument. 87

Appendix 4B: Cover letter for entrepreneurial orientation CoJ-DeD research instrument. 88

APPENDIX 5: CONSISTENCY MATRIX.....87

LIST OF TABLES

Table 2.1: Summary of EE performance variables. 14

Table 2.2: Summary EO dimensions for the study. 21

Table 3.1: Summary of the survey 26

Table 3.2: Measures used in the study 28

Table 4.1: EE variables Pearson correlation 38

Table 4.2: EO variables Pearson correlation 38

Table 4.3: Cronbach Alpha scores of the Entrepreneurial Ecosystem scale 39

Table 4.4: Cronbach Alpha scores of the Entrepreneurial Orientation scale 40

Table 4.5: KMO Measure of Sampling Adequacy and Bartlett's Test of Sphericity results for the EE and EO scales 41

Table 4.6: Total variance explained EE scale 42

Table 4.7: Total variance explained EE scale 43

Table 4.8: Rotated Component Matrix of Entrepreneurial Ecosystem scale 45

Table 4.9: Rotated Component Matrix of Entrepreneurial orientation. 46

Table 4.10: H_{1A} null and alternative hypothesis 48

Table 4.11: H_{1B} null and alternative hypothesis 48

Table 4.12: H_{2A} null and alternative hypothesis 49

Table 4.13: H_{2B} null and alternative hypothesis 50

Table 4.14: H_{3A} null and alternative hypothesis 50

Table 4.15: Welch's t-test results for Hypothesis H_{3B} 51

Table 6.1: Hypotheses results 62

LIST OF FIGURES

Figure 1.1: Map of the City of Johannesburg. 4
Figure 2.1: Entrepreneurship Ecosystem (EE). 11
Figure 2.2: Opportunity recognition process. 12
Figure 2.3: Conceptual framework model. 22
Figure 4.1: Respondents gender profile. 33
Figure 4.2: Respondents entrepreneurial activity 34
Figure 4.3: Respondent's business phase profile. 35
Figure 4.4: Respondents gender profile. 35
Figure 4.5: Respondent's directorates profile. 36
Figure 4.6: Respondents years of service. 37
Figure 4.7: PCA Scree Plot EO scale (2 components retained). 44
Figure 4.8: PCA Scree Plot EO scale (3 components retained). 44
Figure 4.9: Revised conceptual framework model. 47

CHAPTER 1: INTRODUCTION

1.1 Introduction

The global economy is at the dawn of the fourth industrial revolution (4IR), this revolution, according to Schwab (2016), is all inclusive and far-reaching in unprecedented ways. The type of workers that will survive the 4IR are likely going to be those with grit, creativity and an entrepreneurial spirit (Keywell, 2017). The City of Johannesburg (CoJ) is not excluded from the global economy's volatility and uncertainty and, to survive this, Druker (1985) cautioned that large organisations will have to adopt entrepreneurial capabilities. In this regard, being entrepreneurial can be instrumental for a firm to achieve success, however, most of the empirical research on entrepreneurship has been directed towards individual level analysis, although recently research attention has been focused on entrepreneurship as a firm level behaviour and a process that occurs in organisations of all sizes and types (Anderson, Kreiser, Kuratko, Hornsby & Eshima, 2015; Wiklund, 1999, Kuratko, Morris & Covin, 2008).

The process requires both the entrepreneurial agent and the event, the latter being the development of new products, services, processes or entity, the agent is the individual or group that is responsible for materialisation and exploitation of the event (Kuratko et al., 2008). Miller (1983) made the distinction between an entrepreneurial and non-entrepreneurial firm, suggesting that an entrepreneurial firm as one that is innovative, risk taking and proactive in the marketplace. The decision-making practices, managerial philosophies, and strategic behaviours that are entrepreneurial in nature therefore reflects the organisation's inclination towards entrepreneurship or its entrepreneurial orientation (EO) (Anderson et al., 2015). Lumpkin and Dess (1996) further suggested that the critical dimensions that distinctly characterizes the EO of any institution will be the institution's propensity to act autonomously, innovate, take risks, be aggressive toward competitors and proactive relative to marketplace and opportunities. Therefore, an entrepreneurial organisation has agents who possesses innovative, risk-taking and proactive behaviours and, because of these behaviours, they are able to bring an entrepreneurial event to fruition. The question is, if major private corporations can be entrepreneurial, what about

those outside the private sector scope, is it even practical to talk about entrepreneurship in the context of governments and non-profit organisations? (Kuratko et al., 2008). In this regard, the authors argued that entrepreneurship has the same fundamental dimensions in private sector when applied to a non-profit or public sector framework. Entrepreneurial ventures have been the dominant driving force for economic growth for decades, however, much of policy makers and scholars focus has been towards the efforts that leads to venture creation and emergence and less on the supportive environment and the role of state organisations in entrepreneurship ecosystems (Callaghan & Venter, 2011; Fuerlinger, Fandl & Funke, 2015, Fairlie, 2012).

The purpose of this study was to determine the relationship between the perceived EO of the City of Johannesburg Department of Economic Development (CoJ-DeD) officials and the perceived CoJ local entrepreneurial ecosystem (EE) performance. The EO of an organisation, for the purpose of this study, is reflected in the organisation's ability innovativeness, proactiveness and risk-taking abilities while EE is measured by the three variables opportunity recognition, (OR) and exploitation (OE) and entrepreneurial activity (EA) (Miller, 1983; Justo, De Castro & Maydeu-Olivares, 2008).

1.2 Context of the research study

The CoJ owes its origin and growth to the discovery of gold in 1886 on a farm called Langlaagte in the Transvaal now Gauteng Province (Callinicos, 1980). The news of the discoveries spread throughout the country and the rest of the world leading to arguably one of the world's greatest gold rushes, as the then dusty mining camps transitioned from being a tent town to wood, and then brick and mortar within a decade or two (Davenport, 2016). The modern-day CoJ (Figure 1.1) is home to an estimated 4.4 million people and the only metropolitan municipality in South Africa that contributes 16% to the national economy; the city is ranked number 1 in Africa and 11 globally as the best emerging market economy centre of commerce (Stats SA, 2011; City of Johannesburg, 2018). Located in a province that has an economy approximately the same size as that of Morocco, Gauteng Province, CoJ has the highest rate of business and employment

activity in South Africa and as a result it also has the largest in-migration of entrepreneurs and job-seekers comprised of multinational firms and informal traders attracted by the city's perceived business opportunities (Stats SA, 2018; City of Johannesburg, 2018).

One of the main socio-economic challenges facing South Africa is unemployment, especially among its youth. According to Stats SA (2019), unemployment rate in the country was 27.1% during fourth quarter of 2018, this crisis is also one of the city's major challenges. Herrington and Wood (2009) argues that South Africa's private and public sector has not been able to curb the growing unemployment rate and this has led the country to focus on entrepreneurship as an alternative solution. Entrepreneurial ventures play an important role as drivers of economic growth, however entrepreneurial activities are not isolated from the local context where the entrepreneurs operate, this implies that both individual entrepreneurial actions and contextual factors are important (Audretsch & Lehmann, 2005; Audretsch, Keilbach & Lehmannn, 2006; Acs, Desai & Klapper, 2008).

Consequently, in the United States during the period 2000-2010, most of the new jobs were created by fast-growing technology start-ups and one of the critical elements to their success was the established start-ups hubs in which they emerged (Fairlie, 2012). These are places that serve as incubators of innovation, creativity and entrepreneurship and the two main long-time start-ups hubs in US are Silicon Valley and Boston (Fairlie, 2012; Porter, 1998; Fuerlinger et al., 2015). They are also beneficiaries of state's organisations' active role and interventions in entrepreneurship in the regions (Fuerlinger et al., 2015).

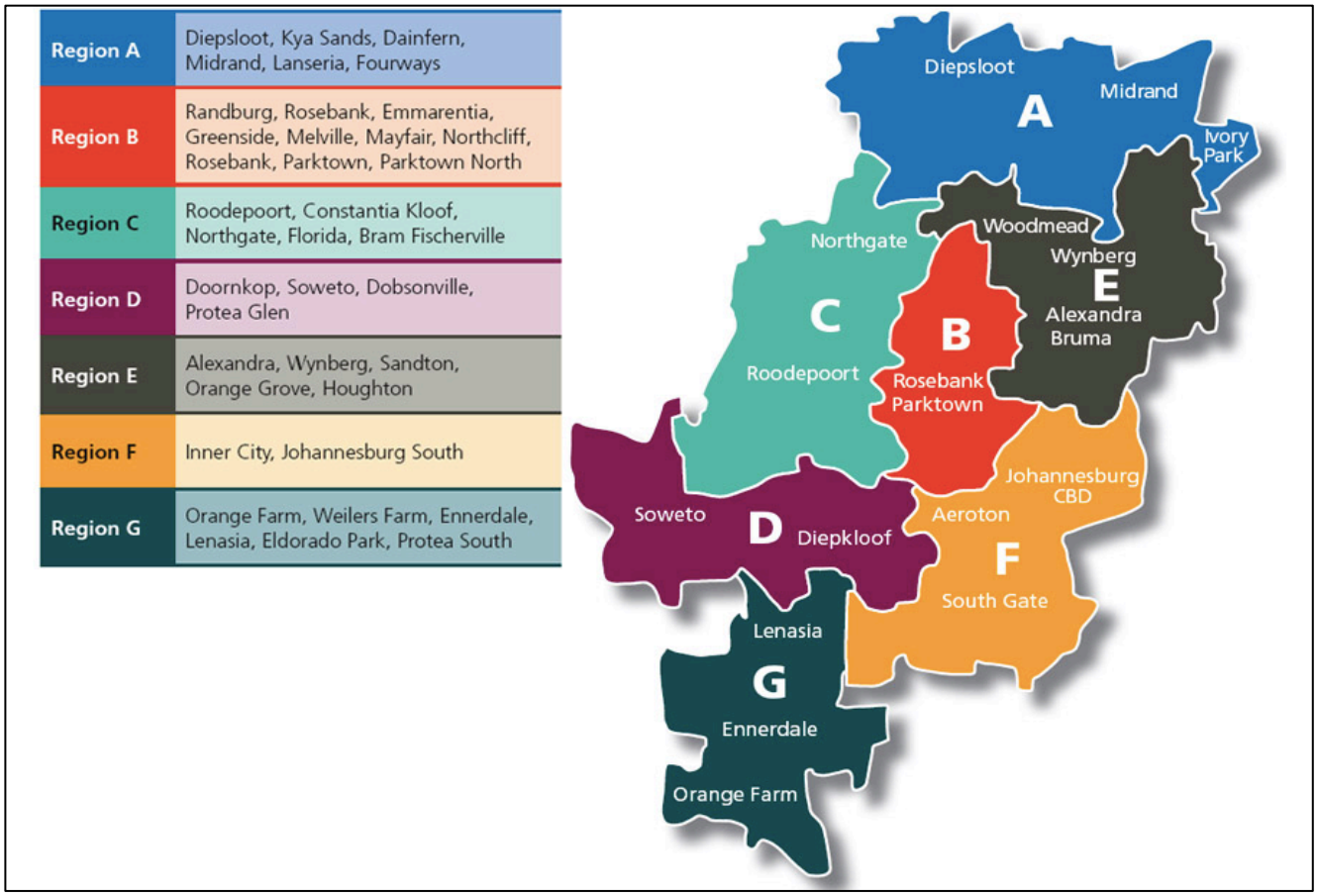


Figure 1.1: Map of the City of Johannesburg.

(Source Pikitup, 2015).

1.3 Problem statement definition

1.3.1 Main problem

The main purpose of the study is to measure the perceived EO of CoJ-DeD officials. The perceived performance of the CoJ local municipal EE will also be measured. In the present study, EO is viewed as the organisation's ability to be innovative, proactive and risk-taking, while EE performance will be measured by the variables, opportunity recognition (OR) opportunity exploitation (OE) and entrepreneurial activity (EA) (Miller, 1983; Justo et al., 2008).

1.3.2 Sub-problems

The research sub problems were the following:

Subproblem 1: To determine the relationship between CoJ-DeD innovativeness and CoJ local EE performance.

Subproblem 2: To determine the relationship CoJ-DeD proactiveness and CoJ local EE performance.

Subproblem 3: To determine the relationship CoJ-DeD risk-taking and CoJ local EE performance.

1.4 Research questions addressed by the study

The objective of the study was the exploration of EO-performance relationship, thus, the main question was, what is the relationship in practice between the metropolitan municipal EO and its local EE performance? The present study answered this question by exploring the relationship between the level of entrepreneurship in the CoJ-DeD officials, and the performance of the CoJ local EE. In summary, the research questions addressed in the present study were the following:

1. What is the relationship between the CoJ-DeD innovativeness and the city's local EE performance?
2. What is the relationship between the CoJ-DeD proactiveness and the city's local EE performance?
3. What is the relationship between the CoJ-DeD proactiveness and the city's local EE performance ?

1.5 Knowledge gap and contribution of the research study

The topic of EO is growing but it is still not well explored and most of the research undertaken has explored the relationship between EO and performance in the United States of America (Covin, Green & Slevin, 2006; Frank, Kessler & Fink, 2010). Lotz and van der Merwe (2013) notes that in South Africa there is limited research that has been conducted specifically to explore the relationship between EO and performance. The current study contributes to knowledge by exploring the relationship between EO and performance from an emerging market economy and public sector perspective.

The notion of EE as a new concept has gained attention among policy makers and is also popular in the understanding of zones and regions of high-growth entrepreneurship and new business initiatives cultivation (Spigel, 2015; Stam, 2015; Stam & Spigel, 2017: 2; Daniels, Medlin, O'Connor, Statsenko, Vnuk & Hancock, 2017). However, despite the concept popularity, as a theoretical concept, EE is still underdeveloped and not yet well understood (Spigel, 2015; Fuerlinger et al., 2015). It is also the subject of much debate among scholars with some questioning its significance and others its legitimacy, while others argue that there is much about the concept that is problematic (Spigel, 2015; Daniels et al., 2017). The present study contributes to the knowledge of EE by exploring the variables; i.e. OR, OE and EA, as variables that influence the performance of the CoJ local entrepreneurial ecosystem.

1.6 Delimitations of the research study

Firstly, the study was confined to the Gauteng province and focused only on the CoJ. The CoJ contributes about 16% to South Africa's national Gross Domestic Product (GDP) and is the largest metropolitan municipality in South Africa by population, size and diversity of its economy (City of Johannesburg, 2018; City of Johannesburg Integrated Development Plan 2018/19 Review, n.d). Secondly, the chosen population of interest within the CoJ for perceived EO measurement was DeD officials. According to the City of Johannesburg (2018), the DeD is responsible for the overall implementation of the city's economic development strategy.

The second population of interest in the study was comprised of nascent entrepreneurs, early start-ups and established business owners within the CoJ. Entrepreneurs are important in the creation of an ecosystem and keeping it healthy (Stam, 2015). This sample was preferred because it represents entrepreneurial actors that are currently consuming the CoJ's local EE.

1.7 Definitions of terms

1.7.1 Entrepreneurial Orientation

Miller (1983: 770) describes entrepreneurship at firm level as the "process by which organisations renew themselves and their markets by pioneering, innovation and risk-taking", based on this conception. The Miller/Covin and Slevin conceptualization is the most dominant perspective of EO, describing firms with an EO as those that are innovative, proactive and risk taking (Anderson et al., 2015). In the present study, EO of any firm or organisation is viewed based on the Miller/Covin and Slevin conceptualization.

1.7.2 Entrepreneurial Ecosystem

Spigel (2015: 50) defines an EE as a combination of "localized cultural outlooks, social networks, investment capital, universities and active policies that creates environments supportive of innovation-based venture". Dubini (1989:14) suggests that entrepreneurial ecosystems are characterized by "the presence of family businesses and role models, a diverse economy, a strong business infrastructure, available investment capital, a supportive entrepreneurial culture, and public policies that incentivize new venture creation".

1.8 Assumptions of the research study

The research study had the following assumptions,

Assumption 1: The participants will answer all the questions in the research instrument honestly and have a sincere interest in taking part in the research and do not have any other motives, the inclusion criteria of the population of interest is adequate and appropriate for the study.

Assumption 2: The CoJ-DeD officials are the true and suitable population for measuring perceived EO of the city and the nascent entrepreneurs, early start-ups and established business owners are the true and appropriate population for measuring the perceived EE performance of the CoJ.

Assumption 3: The underlying dimensions for measuring the performance of an entrepreneurial ecosystem are opportunity recognition, opportunity exploitation and entrepreneurial activity.

1.9 Conclusion

This chapter has provided the research context, purpose, research questions, knowledge gap and the study's contribution. The chapter presented the study's delimitations, definitions of key terms and the research assumptions. The next chapter presents the literature review, the main focus is on the EE and EO dimensions and their relationship with performance.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter firstly presents the literature review on EE and dependent variables, opportunity recognition, opportunity exploitation, entrepreneurial activities. Secondly, the review of literature on EO and its dimensions is presented. The study's formulated hypotheses, based on literature, are also presented. Lastly, the chapter focuses on presenting the study's conceptual framework and conclusion of literature review.

2.2 Dependent variables

2.2.1 Entrepreneurial Ecosystem

The EE construct draws from a lineage of scientific inquiry by scholars from economic geography and economics all striving to give an explanation as to why businesses cluster together in a geographical location and the benefits derived by businesses from clustering (Mason & Brown, 2014) and, according to Acs et al. (2017), it is rooted in strategy and regional development. The concept of EE has drawn attention and focus of public sector policy makers in a short period of time (Isenberg, 2010, 2011; Mack & Qian, 2016; Spigel, 2015).

Isenberg (2011) proposed the following six key domains for EE: public sector, financial institutions, academic institutions, private sector, culture and infrastructure. Spigel (2015) notes that EEs are a blend of social, political, economic and cultural elements in a particular region all acting together, supporting the development and growth of innovative new ventures and their combination also encourages nascent entrepreneurs and other entrepreneurial actors to undertake funding for high risk ventures. Mason and Brown (2014: 5) defined EE as "a set of interconnected entrepreneurial actors, entrepreneurial organizations, institutions and entrepreneurial processes which formally and informally cleave to mediate and govern the performance within the local entrepreneurial environment".

Based on Isenberg (2011), Spigel (2015) and Mason and Brown (2014) perspectives, the CoJ governs and mediates performance of its own EEs along with other entrepreneurial actors, focusing primarily on supporting and developing new venture creation. The performance of an EE is perceived to be driven by the interplay between its entrepreneurial actors, individuals, organisations and institutions (Mason & Brown, 2014) (Figure 2.1). A municipality is thus an entrepreneurial actor of an EE. According to Mason and Brown's (2014) and Isenberg's (2011) conceptualization, it influences the performance of its own local EE. The agreement on the performance measurement of an EE and the method of its detection is still a work in progress, the variables used in the present study to measure the perceived performance of the CoJ local EE are, opportunity recognition, opportunity exploitation and entrepreneurial activity (Acs et al., 2017; Justo et al., 2008).

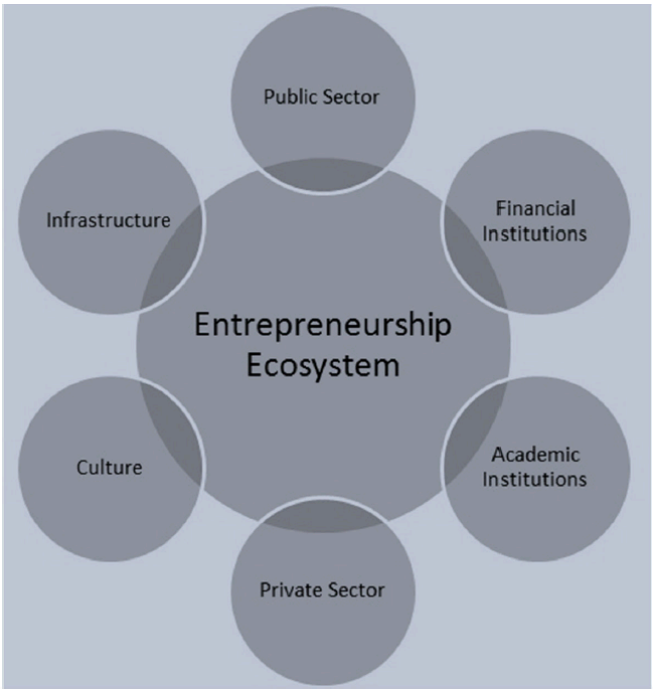


Figure 2.1: Entrepreneurship Ecosystem (EE).

(Source, Isenberg, 2011).

2.2.2 Opportunity recognition and exploitation

Park's (2005) study on opportunity recognition and product innovation in high-tech start-ups suggests that the opportunity recognition process has the following three components: entrepreneur, knowledge and experience of the firm and technology. According to Park's (2005) proposed model, new product innovation manifests as a result of the interaction between the three individual components of the opportunity recognition process (Figure 2.2)

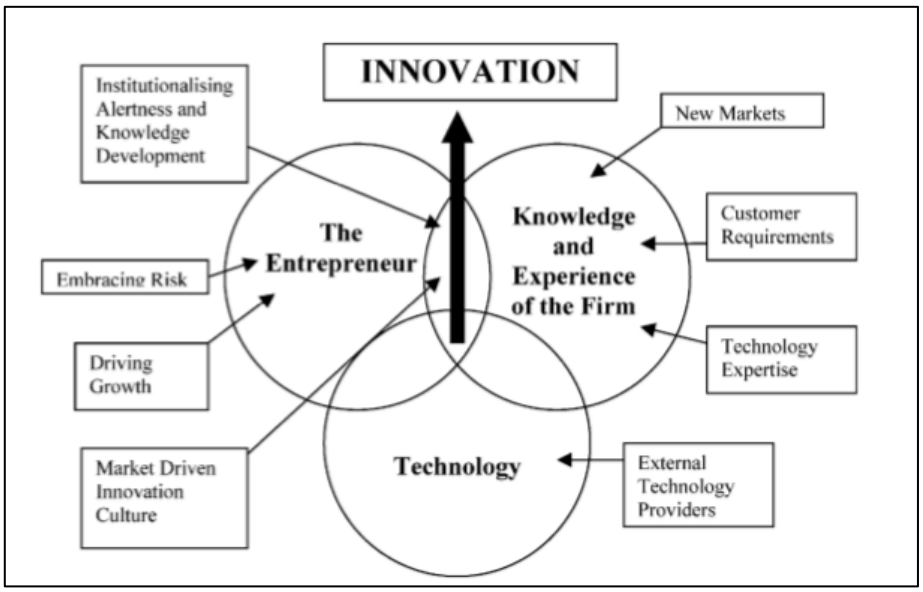


Figure 2.2: Opportunity recognition process.

(Source: Park (2005, p750)

In defining entrepreneurship, the authors Stevenson, Roberts and Grousbeck (1989) and Shane and Venkataraman (2000: 218) noted the significance of the opportunity component with the latter authors concluding that entrepreneurship involves "the study of source of opportunities, the process of how they are discovered, evaluated and exploited and individuals that are responsible for opportunity, discovery, evaluation and exploitation". The authors (Kurkertz et al., 2017: 92) suggest that opportunity recognition is characterized by "being alert to the potential business opportunities, actively searching for them and gathering information about new ideas on products and services".

Herrington, Kew and Mwanga (2017) also suggested that the perception of good opportunities by individuals is a critical factor in determining the possibilities of those individuals creating a new venture in their local environment and is also a measure of their attitude towards entrepreneurship. Shane and Venkataraman (2000) argued that the recognition of an entrepreneurial opportunity by an entrepreneur is good but is insufficient for entrepreneurship, the recognised opportunity must be exploited. Opportunity exploitation is characterised by the development of a product or service related to the perceived entrepreneurial opportunity, acquisition of appropriate human resources, financial resources, and setting up the organization (Kurkertz et al., 2017: 92).

2.2.3 Entrepreneurial activity

In the present study, entrepreneurial activity is viewed according to Justo et al.'s (2008) conceptualisation, which assumes that EA is affected by the social context in which it occurs and measures the entrepreneurs personal network in combination with their propensity to commence an entrepreneurial activity. According to Justo et al. (2008) this perspective allows for a better-off measure of the effect and potency of entrepreneurial behaviour, the authors also suggest that a measure of EA is important but is inadequate if it fails to examine the entrepreneurial social environment and its effect on the potential for new venture creation. Table 2.1 summarizes variables used in the present study to measure EE performance.

Table 2.1: Summary of EE performance variables.

Focal Entrepreneurial Phenomenon	Description	Authors
Opportunity Recognition (OR)	Being alert to the potential business opportunities, actively searching for them and gathering information about new ideas on products and services. Its three components are the entrepreneur, the knowledge and experience of the firm and technology.	(Kurkertz et al., 2017; Shane & Venkataraman, 2000; Herrington et al., 2017, Park, 2005)
Opportunity Exploitation (OE)	The development of a product or service related to the perceived entrepreneurial opportunity, the acquisition of appropriate human resources, financial resources, and setting up the organization.	(Kurkertz et al., 2017; Shane & Venkataraman, 2000)
Entrepreneurial Activity (EA)	Assumes that EA is affected by the social context in which it occurs and measures the entrepreneur's personal network in combination with its propensity to commence an entrepreneurial activity.	(Justo et al., 2008)

2.3 Independent variables Entrepreneurial Orientation

EO has its theoretical foundations in management strategy domain (Lotz & van der Merwe, 2013). Anderson et al. (2015) traced the construct's genesis to the work conducted by Mintzberg (1973) and Kwandalla (1977), it is well established in entrepreneurship and broader management and has been extensively used in the field of strategy (Wales, 2016). The number of articles published in the last 20 years on the topic testifies to its robustness and rigor as a scientific construct (Rauch, Wiklund, Frese & Lumpkin, 2004). Mintzberg (1973) lists the entrepreneurial mode as one of three modes identified in strategy making and Miller (1983) made a distinction between an entrepreneurial and non-entrepreneurial firm, describing an entrepreneurial firm as one that is innovative, risk taking and proactive. Covin and Slevin (1989) suggested the existence of a continuum employed to map a firm's strategic behavioural orientations and that it had two extreme ends ranging from more conservative to more entrepreneurial,

with the entrepreneurial end being defined by innovativeness, proactiveness and risk-taking.

The meta analyses work on EO affirms the Miller/Covin and Slevin conceptualization as the most dominant perspective of EO, describing firms with an EO as those that are innovative, proactive and risk-taking (Anderson et al., 2015). Lumpkin and Dess (1996) proposed additional two dimensions, autonomy and competitive aggressiveness, which they argued are essential to EO and congruent with Miller's (1983) conceptualization. Based on Lumpkin and Dess (1996), the critical dimensions that distinctly characterizes EO are: autonomy, innovation, competitive aggression, risk-taking and proactiveness relative to the marketplace and opportunities. The authors further suggested that EO displays the organisational processes, the methods and styles that are employed by the firm in its entrepreneurial undertakings. EO is equivalent to a business-level strategy carried out by an undiversified economic entity, it is, in essence, the firm's strategic posture towards entrepreneurship (Lumpkin & Dess, 1996; Anderson et al., 2015).

A point of contention among EO scholars is related to the two principal perspectives on how the construct is conceptualized, that is, whether EO is unidimensional or multi-dimensional (Lotz & van der Merwe, 2013; Gupta & Pandit, 2012). Based on earlier contribution by Miller (1983) dimensions of the EO construct were perceived to co-vary and EO was viewed as a unidimensional construct, comprised of the three dimensions: innovativeness, proactiveness and risk-taking. The implications of these unidimensional conceptualizations of EO meant that the display of one or two EO dimensions by a firm was not adequate for it to be classified as entrepreneurial, thus, to be regarded as entrepreneurial, firms needed to display a high level of all three dimensions (Gupta & Pandit, 2012; Lotz & van der Merwe, 2013). However, Lumpkin and Dess (1996) expanded on the conceptualization by suggesting that the relationship between EO and performance is situation specific and that EO dimensions may vary independently and, in this regard, it was not required for all EO dimensions to be present for a firm to act entrepreneurially.

2.3.1 Innovativeness

It is widely accepted in literature that the economist Schumpeter (1934) is among the first economists to stress the importance of innovation as a driver behind economic growth and its importance to entrepreneurship (Lumpkin & Dess, 1996; Gupta & Pandit, 2012; Venter et al, 2015). Gupta and Pandit (2012) outlined a process described as creative destruction, in this process wealth was created when there was a disruption in the existing markets' make-up instigated by the introduction of new goods or services, resulting in the migration of resources away from the incumbent firms to new firms and ultimately leading to their growth. The key and critical element in the cycle of creative destruction, according to Schumpeter (1942), was entrepreneurship, the competitive entry of innovative new combinations resulting in the dynamic progression of the economy (Gupta and Pandit, 2012).

Innovation is displayed in the organisation's willingness to forego its currently existing technologies or practices and to venture beyond current norms, it is the firm's inclination towards supporting new concepts, novelty, experimentation and creative processes that may be transformed into new products, services or processes (Kimberly 1981; Lumpkin & Dess, 1996). The relationship between innovation and firm's performance represents the most significant consensus, with most studies conducted exhibiting a positive relationship between the firm's degree of innovativeness and performance (Casillas & Moreno, 2010). This positive relationship is supported by countless studies (Rauch, Wiklund, Lumpkin & Frese 2009; Moreno & Casillas, 2008; Kleinschmidt & Copper, 1991; Subramanian & Nilakanta, 1996). Hence, innovativeness is argued to be the representation of the firm's entrepreneurial behaviour (Covin & Miles, 1999) and, because of its contribution to performance, it may be the most essential component of a firm's strategy (Hamel, 2000; Lumpkin & Dess, 1996).

In context of the public sector, an organisation's innovativeness may involve novel methods or processes, new services and new organisation forms (Kuratko et al., 2008).

It is expected that a municipality with a perceived innovativeness will have a positive impact on its EE's performance. Thus, the following hypotheses is suggested:

2.3.1.1 Hypothesis H_{1A}, H_{1B} and H_{1C}

H_{1A}: There is a positive relationship between the perceived CoJ innovativeness and its perceived EE's entrepreneurial opportunity recognition.

H_{1B}: There is a positive relationship between the perceived CoJ innovativeness and its perceived EE's entrepreneurial opportunity exploitation.

H_{1C}: There is a positive relationship between the perceived CoJ innovativeness and its perceived local EE's entrepreneurial activity.

2.3.2 Proactiveness

Penrose (1959) conducted earlier work on the construct focusing primarily on initiatives taken by firms in seizing opportunities, the focus then shifted to the response speed of firms to emergence of opportunities that existed in their environment (Gupta & Pandit, 2012). In their earlier work, the authors Miller and Friesen (1978: 923) argued that how proactive a firm is in its decision-making process can be ascertained by answering the question, "Does it shape the environment by introducing new products, technologies, administrative techniques, or does it merely react?". Miller (1983) employed proactiveness in determining firms that were quickest to innovate new products and services. Proactiveness refers to the business posture of foreseeing and predicting market future needs and wants so as to create first-mover advantage (Madsen, 2007). According to Wiklund and Shepherd (2005), because of first-mover advantage, business assumes a privileged position where it can control access to the market by dominating distribution channels and by charging high prices for goods and services, in essence, first-mover organisation skims the market ahead of the competition. It is also important to note that the first-movers are not always successful, the market does not always easily adopt new products and breakthrough technologies, hence, careful examination of the

environment and feasibility studies are required before a competitive advantage focused proactive strategy can be undertaking (Dess & Lumpkin, 2015).

Lotz and van der Merwe (2013) argued that a business can still be able to achieve novelty in its undertaking and be progressive and fast without being first in the market. In this regard, Gupta and Pandit (2012) noted that though being the first-mover is still considered being proactive, more recent definitions of the dimension have moved away from the first-mover component as the central defining variable for the construct. Venkataraman (1989) posited that proactiveness is the process which is focused on anticipation and on action-taking for future needs by pursuing new opportunities, such as the introduction of new products ahead of the competitors or the strategic elimination of business operations that are in a declining or mature stage of their life cycle. In essence, proactiveness refers to the organisation's keenness on initiating actions that the competitors respond to (Gupta & Pandit, 2012). The authors Rauch et al. (2009) found that proactiveness is an integral dimension of EO that displays a strong positive relationship when compared to business performance, while the authors Casillas and Moreno (2010) also discovered that proactive firms showed superior performance and growth.

The most essential proactiveness characteristic in the public sector involves the imaginative interpretation of rules, skills at networking and leveraging on resources and also a high level of determination and endurance in the process of influencing change (Kuratko et al., 2008). It is expected that a municipality with a perceived proactiveness will have a positive impact on its EE's performance. Thus, the following hypotheses are proposed:

2.3.2.1 Hypothesis H_{2A}, H_{2B} and H_{2C}

H_{2A}: There is a positive relationship between the perceived CoJ proactiveness and its perceived EE's opportunity recognition.

H_{2B}: There is a positive relationship between the perceived CoJ proactiveness and its perceived EE's entrepreneurial opportunity exploitation.

H_{2C}: There is a positive relationship between the perceived CoJ proactiveness and its perceived local EE's entrepreneurial activity.

2.3.3 Risk taking

According to the authors Lumpkin and Dess (1996) and Gupta and Pandit (2012), the risk-taking behaviour by the entrepreneur were first proposed in the conceptualization of the notion of entrepreneurship by Cantillon (1734). Cantillon (1734) was first to formally use the term entrepreneurship, the author posited that the main element which differentiated entrepreneurs from hired employees was the uncertainty and riskiness associated with the notion of self-employment. Risk-taking involves actions of committing a sizeable amount of resources to endeavours that have uncertain outcomes (Baird & Thomas, 1985). In a similar vein, Miller and Friesen (1982) defined risk-taking as "the degree to which managers are willing to make large and risky resource commitments, that is those which have a reasonable chance of costly failures".

Baird and Thomas (1985) identified the following modes of strategic risks: venturing into the unknown and committing somewhat large rations of assets and also borrowing heavily. The operations of any business organisation have an inherent risk (Von Stamm, 2008), however organisations with an EO are typified by above normal risk-taking behaviours such as heavy borrowing, investing in unexplored technologies or bringing new products into new markets (Lumpkin & Dess, 1996).This risk does not imply gambling, blind optimism or extreme and uncontrollable risk but rather moderate and well-calculated risks (Morris, Kuratko & Covin, 2008); Venter, Urban, Beder, Oosthuizen, Reddy & Venter, 2015)) taken in the interest of obtaining high returns by exploiting market gaps (Bhardwaj, Agrawal & Momyaya, 2007).

The relationship between risk taking and successful performance of a business is not clear in the literature (Rauch et al., 2009). Wiklund and Shepherd (2005) note that strategies that are riskier may result in performance variation because of the failure and success of projects undertaken based on risky strategies. Gupta and Pandit (2012) also

note that research indicates that taking excessive risks may result in variant business performance, however, in the long run this will prove profitable.

Kuratko et al. (2008) argued that, in the public sector sphere, risk-taking tends to involve the undertaking of calculated probability of loss or financial resources or stakeholder support failure, the authors also argued that non-profit organisations fail but the difference with the private sector is that they typically don't go out of business or incur bankruptcy. Failure in government organisations is typically in the form of government programs and service delivery (Kuratko et al., 2008). It is expected that a municipality with perceived risk-taking will have a positive impact on its EE's performance. Thus, the following hypotheses are proposed:

2.3.3.1 Hypothesis H_{3A}, H_{3B} and H_{3C}

H_{3A}: There is a positive relationship between the perceived CoJ risk taking and its perceived EE's entrepreneurial opportunity recognition.

H_{3B}: There is a positive relationship between the perceived CoJ risk-taking and its perceived EE's entrepreneurial opportunity exploitation.

H_{3C}: There is a positive relationship between the perceived CoJ risk-taking and its perceived local EE's entrepreneurial activity.

Table 2.2 presents EO dimensions literature review summary.

Table 2.2: Summary EO dimensions for the study.

Focal Entrepreneurial Phenomenon	Description	Authors
Innovativeness	The firm's inclination towards supporting new concepts, novelty, experimentation and creative processes that may be transformed into new products, services or processes	Schumpeter, 1934; Kimberley, 1981; Miller, 1983; Covin and Slevin, 1989; Lumpkin and Dess, 1996;
Risk-taking	The organization's willingness to confidently act without certainty of consequences, the organization is also willing to let go of its old procedures that may have worked in the past in order to undertake a riskier alternative.	Cantillon, 1734; Miller, 1983; Covin and Slevin, 1989; Lumpkin and Dess, 1996; Venter et al., 2015
Proactiveness	Refers to the organisation's keenness to initiate actions that the competitors respond to.	Penrose, 1959, Miller, 1983, Covin and Slevin; Lumpkin and Dess, 1996; Gupta and Pandit, 2012

2.4 Conceptual framework model

The current study conceptualizes the framework below (Figure 2.2) to demonstrate the relationship between EO dimensions, innovativeness, proactiveness and risk-taking (independent variables) and EE chosen performance variables, opportunity recognition, opportunity exploitations and entrepreneurial activity (dependent variables). The hypothesized model relationships conceptualization is informed by the literature review discussion presented above (Miller, 1983; Covin & Slevin, 1989, Lumpkin & Dess, 1996; Isenberg 2010, 2011; Shane & Venkataraman, 2000; Kurkertz et al., 2017 and Justo et al., 2008).

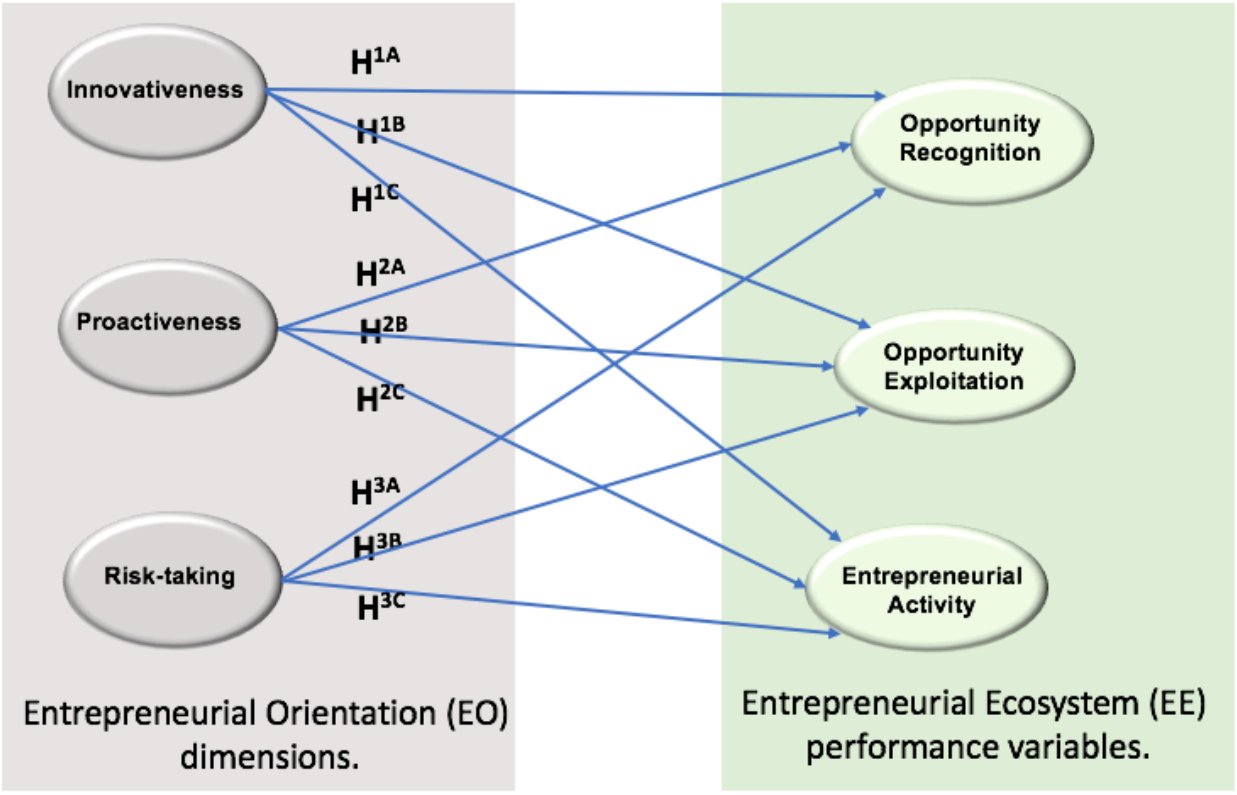


Figure 2.3: Conceptual framework model.

2.5 Conclusion

The chapter presented the literature review on EO and its dimensions and the relationship between the EO dimensions and performance. The literature review on EE and the chosen variables that represent its perceived performance were also presented. The formulated research hypotheses were presented. The conceptual framework depicting the relationship between the independent and dependent variables based on the study's hypotheses were presented.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This section describes the research methodology employed in the study. The research paradigm, approach appropriateness and assumptions are discussed first. Second, the research design is discussed followed by population, sample and sampling method. Third, the research instrument utilized is discussed, followed by data analysis process. Fourth, the validity and reliability of measuring scales are discussed. Lastly, the limitations and ethical issues in relation to research instrument employed are presented.

3.2 Research paradigm

The study's research paradigm is positivism. According to Cupchik (2001), positivists are concerned with finding specific functional relationships between operationalized variables. The positivistic paradigm research approach uses quantitative research to test hypotheses and theory and quantitative research is primarily concerned with answering the questions relating to the existence or non-existence of relationships of measured or assessed variables with the intention of providing an explanation, predication and controlling the phenomena (Leedy & Omrod, 2005: 94-95).

The current study was quantitative methodology based, meaning, the study used quantitative methods based on literature and research instruments to measure the relationship between CoJ perceived EO and the perceived performance of its EE. The study identified the dimensions of EO, innovativeness, proactiveness and risk-taking as independent variables to be analysed and chose variables that influence the performance of an EE as OR, OE and EA as the dependent variables of the study, the variable's relationship was tested to confirm or not confirm the objective knowledge of how they relate.

3.3 Research Design

The present study is based on a quantitative research design similar to other empirical studies on EO-performance relationship which found a positive relationship between EO and firm performance (Morris, Kuratko, & Covin, 2011; Covin & Slevin 1989; Lumpkin & Dess, 1996; Wiklund & Shepherd, 2005; Zahra & Covin, 1995; Madsen, 2007; Lumpkin & Dess, 1996). The primary data of the CoJ-DeD officials perceived EO and CoJ's nascent entrepreneurs, early start-ups and established business owners perceived EE performance, was collected using a structured literature-based survey. This primary data was used to find and test the relationships between the dimensions of EO and EE performance variables.

3.4 Population and Sample

3.4.1 Population

The study's is comprised of two sets of populations. The first population is comprised of CoJ-DeD officials and the second, CoJ's nascent entrepreneurs, early start-up and established business owners. For the purpose of the research study the second population was comprised of different groups and is regarded and treated as one population group. The total population and sampling frame for the present research study is comprised of all CoJ-DeD officials and all the nascent entrepreneurs, early start-up and established business owners in the CoJ. The total number of targeted CoJ officials was 98 and a total of 46 useable questionnaires were returned. The total number of nascent entrepreneurs, early start-up and established business owners in the CoJ was unknown but a total of 109 useable questionnaires were returned.

3.4.2 Sample and sampling method

The non-probability sampling method was adopted in the study, this is sampling based on the researcher's judgement (Zikmund & Babin, 2007). The sampling procedure used in the present study was convenience sampling for both the CoJ-DeD officials and the nascent entrepreneurs, early start-up and established business owners in the CoJ.

The data used in the empirical analysis of the study was gathered through survey questionnaires, one survey questionnaire was targeted at population 1 and the other at population 2 (Table 3.1). This data was collected primarily using on-line survey questionnaires, a link for each respective survey was sent out to all the potential respondents through an e-mail, and social media platforms, WhatsApp and LinkedIn were utilized (Appendix 4). The overall target sample for the CoJ-entrepreneur's population was 150 and a total of 109 useable questionnaires was returned, the total population for CoJ-DeD officials was 50 and a total of 46 useable questionnaires was returned.

Table 3.1: Summary of the survey

Variables	**Population 1: CoJ Officials (Middle and senior management)**	**Population 2: CoJ Entrepreneurs**
Sample	CoJ-DeD Officials	Nascent entrepreneurs, early start-up and established business owners in CoJ
Population Size	50 (Figure from Executive Director's office)	Unknown
Target Sample Size	50	150
Final Sample Size	46	109
Sampling unit	Metropolitan Municipality	Enterprises and Enterprising Individuals
Respondents	Executive Directors, Directors, Deputy Directors and Assistant Directors	Nascent entrepreneurs, early start-up and established business owners

3.5 Research Instruments

3.5.1 EO dimensions research instrument

The dimensions of EO that were explored in the research study, were selected in the literature (Miller, 1983; Covin & Slevin, 1989; Lumpkin & Dess, 1996; Dess & Lumpkin, 2001; Anderson et al, 2005; Gupta & Pandit, 2012). The items measuring the EO dimensions were compiled based on the following measuring instruments: *The corporate entrepreneurship instrument* (Morris et al., 2011) and the *Corporate entrepreneurship assessment instrument* (Hornsby, Kuratko & Zahra, 2002). The first section of the EO measuring instrument included biographical information, collected for possible future correlations with answers from the survey (Appendix 2A). In the second section of the instrument, respondents were requested to indicate their level of consensus with each statement posed by means of a five-point Likert scale (Appendix 2A).

3.5.2 EE performance research instrument

The variables chosen as elements that influence the performance of EE in the present study are: opportunity recognition, opportunity exploitation and entrepreneurial activity. They were identified from literature (Shane & Venkataraman, 2000; Justo et al., 2008; Kurkertz et al., 2001).The items measuring the chosen EE variables were based on a measuring instrument by Justo et al. (2008). For the research instrument's last scale item, entrepreneurial activity participants indicated their extent of agreement with each statement posed by means of three-point Likert scale (Appendix 2B) based on Justo et al. (2008).

Table 3.2: Measures used in the study

Construct	Literature Source	Dimensions	Comment on the Instrument
Entrepreneurial Orientation Measured on 5-point Likert scale, 1=Strongly Disagree 5=Strongly Agree	(Miller, 1983; Covin and Slevin, 1989; Lumpkin and Dess, 1996; Dess and Lumpkin, 2001; Anderson et al, 2005; Gupta and Pandit, 2012)	Innovativeness Risk Taking Proactiveness	**Cronbach alpha of 0.911** across all three dimensions. **Pearson Correlation** is positive between all the measures (Table 4.2) **Exploratory Factor Analysis (EFA)** was used test the validity resulting in two factors Innovativeness and Proactiveness
Entrepreneurial Ecosystem Measured on 7-point Likert scale, 1=Disagree Strongly 7=Agree Strongly (OR and OE)	(Shane and Venkataraman, 2000; Justo et al., 2008; Kurkertz et al., 2001; Isenberg 2010, 2011; Spigel, 2015). Justo et al., 2008)	Opportunity Recognition (OR) Opportunity Exploitation (OE)	**Cronbach alpha** of 0.829 across all three dimensions. **Pearson Correlation** is positive between the measures, OR and OE with Pearson value of 0.533 negative between OE and EA (-0.380) and negative between OR and EA (-1.69) (Table 4.1) **Exploratory Factor Analysis (EFA)** was used test the validity resulting in only two factors, OR and OE
Entrepreneurial Ecosystem Measured on 3-point Likert scale, 1=Agree 2=Undecided 3=Disagree (EA)		Entrepreneurial Activity (EA)	

3.6 Data analysis and interpretation

3.6.1 Descriptive statistics

The data analysis involved descriptive statistics of demographics data and variables' scale-items on both the EO and EE instrument. The scale-items means and variance were also analysed.

3.6.2 Correlation Analysis

The correlation among the EE and EO variables was conducted prior to the Exploratory Factor Analysis (EFA) of the scales. The Pearson Correlation method was used to test the correlation between the individual variables of both the dependent and independent variables.

3.6.3 Exploratory Factor Analysis

Principal Component Exploratory Factor Analysis was run in IMB SPSS on the questions relating to the EE and EO scales. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity were used to test the suitability of running EFA on the scales (Bartlett, 1954). The KMO measure values that are close to 1.0 are largely considered a consent to run factor analysis (Bartlett, 1954). Bartlett's Test of Sphericity tests the hypothesis that the correlation matrix is an identity matrix, which would indicate that the variables are unrelated and therefore unsuitable for structure detection and small values of less than 5% significance level are a consent to run factor analysis, in the present study the test for both scales was significant at 5% (Bartlett, 1954).

The methods that were utilized in deciding the number of factors to retain for each scale were Principal Component Analysis and the Factor loading. In the first method, the components with the highest measure of variance, were extracted because their highest eigenvalues were identified as the components to be retained for both scales. The latter method plots the eigenvalues associated with each component, the break between the components with relatively large eigenvalues (≥ 1) and those with small eigenvalues (<1) was used as a criterion retain factors (Catell, 1966).

3.6.4 Welch's t-Test analysis

The Welch's t-test or unequal variances t-test was used to test the study's hypothesized model as proposed in Chapter 2. The test is a two-sample location test used to test the hypothesis that two populations have equal means ("Welch's Test for unequal variance", 2015). This test was used mainly because the study's data was collected from two different populations, with different sample sizes and the participants completed different questionnaires. Hence, the combined data of the study will not follow a normal distribution and will also be non-linear. This condition disqualifies the use of regression analysis. The t-test is robust for populations with unequal sample sizes and variances ("Welch's Test for unequal variance", 2015).

3.7 Validity

3.7.1 External Validity

The degree to which a researcher is measuring what they intended to measure is the research's validity test (Cooper & Schindler, 2014). The authors further noted that the external validity of a study is concerned with causal relationship between constructs which can be generalized across settings, persons and times. The current study measured the correlation that existed among EO scale variables and the correlation among the EE performance scale variables. The relationship between the scales items is tested, testing the study's conceptual framework.

3.7.2 Internal Validity

In essence, validity refers to the best suited and best available approximation to truth of accepting or rejecting propositions (Cook & Campbell, 1979). Internal validity therefore refers to the truth value which is assigned to a conclusion that indeed a causal association between the dependent and independent variable has been proven.

3.8 Reliability

According to Tavakol and Dennick (2011), internal consistency should be determined prior to conducting a test for a research or an examination to ensure validity. The authors further suggest that Cronbach Alpha coefficients is a means to provide a measure of the scale's internal consistency, which relates to the extent to which all items in a scale measures the same construct (Tavakol & Dennick, 2011). The Cronbach alpha coefficients were used to assess the reliability of both EO and EE performance research instruments (Cronbach, 1951, Lotz & van der Merwe, 2013).

3.9 Limitations

The study was primarily focused on the CoJ-DeD, the findings from the empirical analysis cannot be considered as representative of the other metropolitan municipalities. The lack of general consensus on the underlying factors that define measures of EE performance are limitations to the study (Acs et al., 2017). Since data in the study was collected from a cross-sectional quantitative survey for EO dimensions and EE variables, one limitation of such an approach is, the researcher cannot supplement the original items questions in the instrument by asking follow-up probing questions to the respondents to make the meaning of the survey clearer (Segal, Borgia & Schoenfeld, 2005).

3.10 Ethical Considerations

In maintaining confidentiality of the information collected from the participants, people outside the project will not be allowed access to information that will enable them to connect the individual subjects of the research sample to their responses. The research instruments were also designed not to have the following information about participants: real name, address, date of birth, e-mail address and relative or spouse name, this was done to maintain the respondent's anonymity. The participants were also informed prior to completing the survey of their voluntary participation in the study and confidentiality of their responses (Appendix 3 and 4 university letters and cover letters).

3.11 Conclusions

The chapter provided the research methods that were used in the study. The research paradigm of the study is positivism which uses quantitative methods to test hypotheses and theory. The study had two populations, the CoJ-DeD officials and the nascent entrepreneurs, early start-up and established business owners in the CoJ, the latter is considered as one. In this regard, two literature-based structured survey instruments were used to collect data from the populations. The collected data was first subjected to descriptive statistics analysis, correlation, reliability testing and then EFA. Lastly, the Welch's t-test was used to test conceptual framework.

CHAPTER 4: EMIRICAL RESULSTS FROM THE STUDY

4.1 Introduction

The chapter presents the empirical findings of the research and these results are discussed and presented in the context of the literature review. The primary data was collected by means of structured survey questionnaires and IBM SPSS was utilized to analyse and present data. The data was analysed using the analytical methods explained in Chapter 3. This chapter firstly, presents the descriptive analysis of samples from the two populations. The correlation analysis, reliability testing and EFA results will also be presented. Lastly, the hypotheses tests' outcomes will be presented.

4.2 Descriptive profile of the study sample

4.2.1 EE demographic data

4.2.1.1 Respondent's gender profile

The respondents' gender results, in Figure 4.1, indicate that 2% of the participants were gender neutral, 36% females and 62% males.

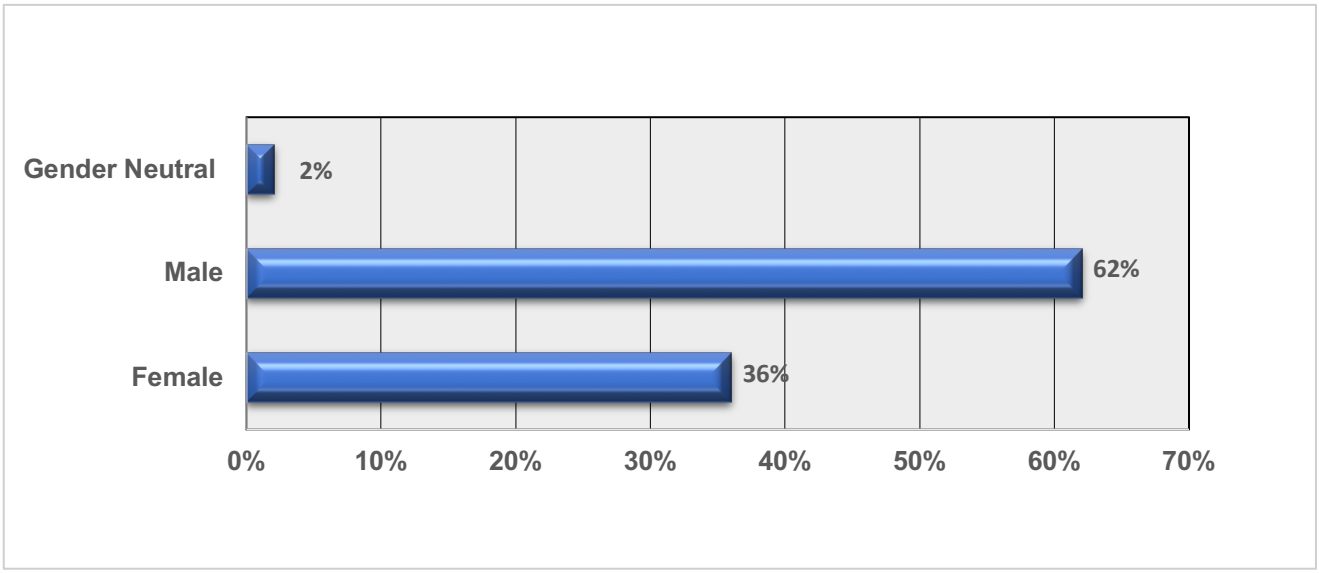


Figure 4.1: Respondents gender profile.

4.2.1.2 Respondent's entrepreneurial activity

The respondents noted their current entrepreneurial activities in the CoJ in the following way: 29% were thinking about starting a business in the CoJ, 22% are business owners looking for more opportunities in the CoJ and 6% were business owners in the CoJ (Figure 4.2). The blank entry represents values that could not be retrieved from Qualtrics by IBM SPSS.

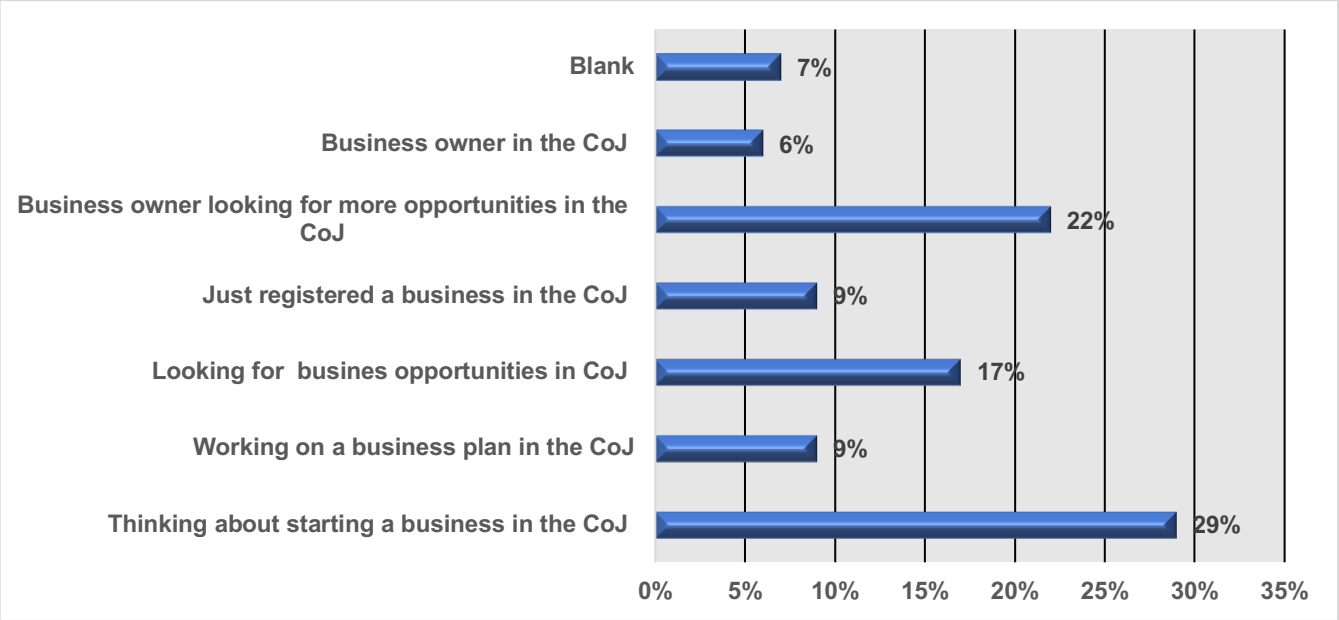


Figure 4.2: Respondents entrepreneurial activity

4.2.1.3 Respondent's businesses phase

The respondents were required to indicate the phase of their entrepreneurial venture, 42% indicated that their business is still at the conceptual phase, 12% business is at an established phase and 2% business at a matured phase (Figure 4.3). The blank entry represents values that could not be retrieved from Qualtrics by IBM SPSS.

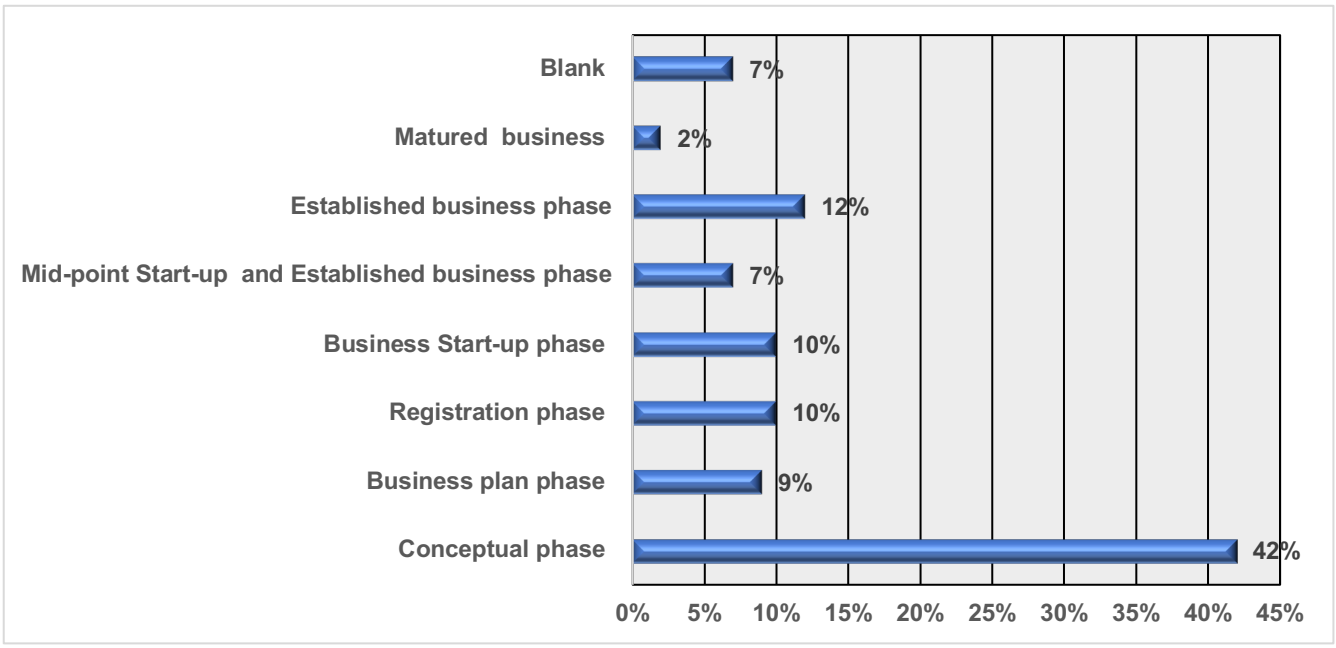


Figure 4.3: Respondent's business phase profile.

4.2.2 EO demographic data

4.2.2.1 Respondent's gender profile

The participants gender profile, as shown in Figure 4.4, indicates that 67% of the respondents at the CoJ-DeD were females and 33% males.

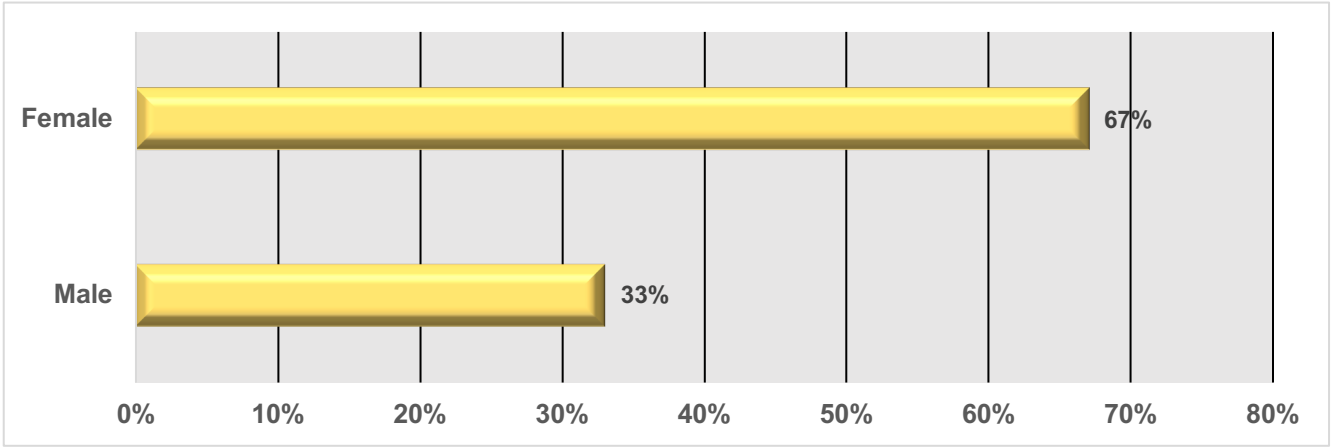


Figure 4.4: Respondents gender profile.

4.2.2.2 Respondent's directorates

The respondents also indicated their directorates within the department, 17% were from Economic development facilitation, 15% Integrated regional economic development, 13% Enterprise development and Strategic management support and 2% from both policy and planning and human resources (Figure 4.5).

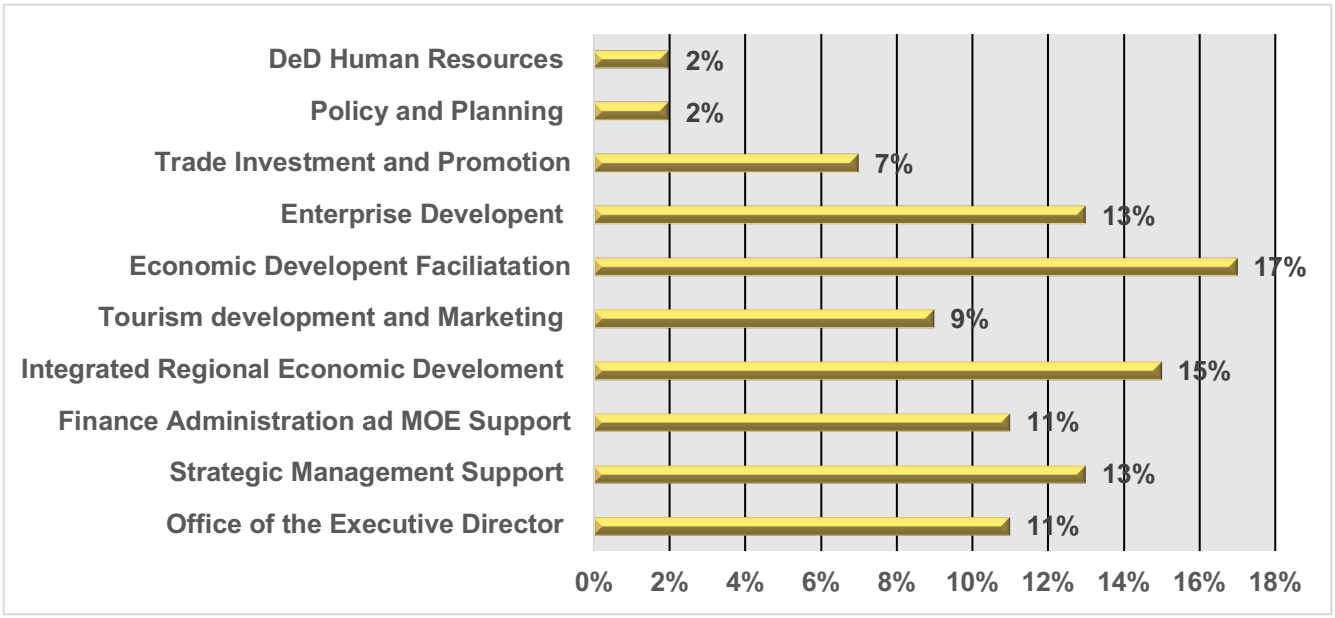


Figure 4.5: Respondent's directorates profile.

4.2.2.3 Respondent's years of service

The participants also indicated their number of years of service in the CoJ (Figure 4.6), 59% of the respondents have 5-10 years working experience in the CoJ, 22% 10-15 years, 4% less than 1 year and 4% had between 15-20 years.

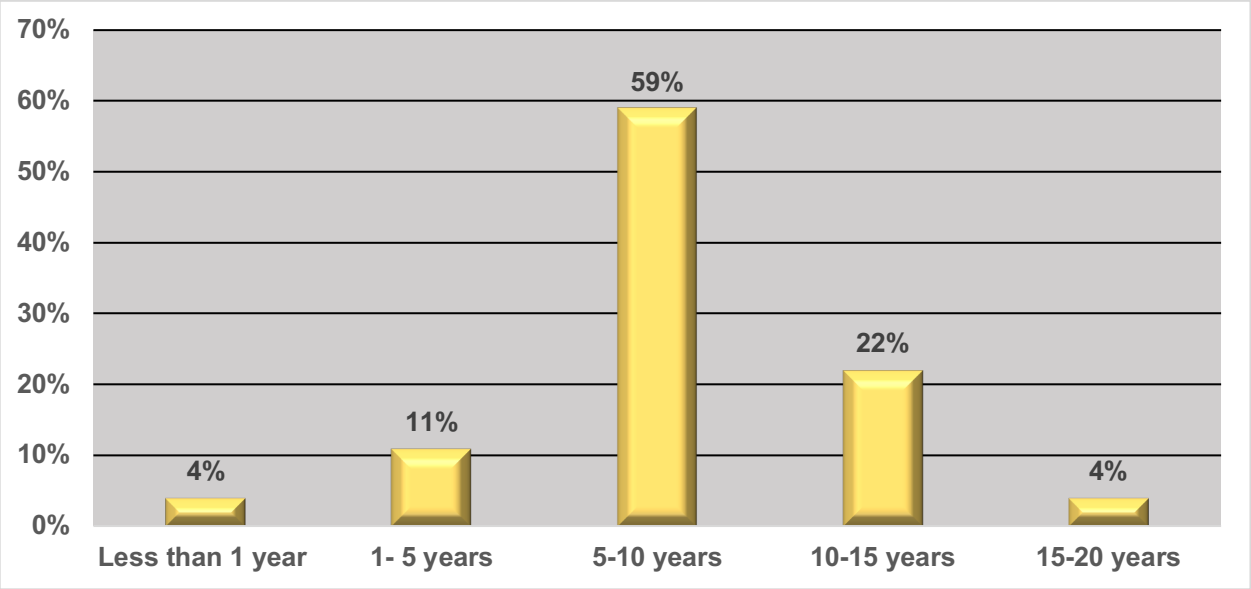


Figure 4.6: Respondents years of service.

4.3 Testing correlation of the scales

The Pearson correlation coefficient between OR and OE is positive with a value of 0.533, negative between OE and EA -0.380 and also negative between OR and EA -1.69 (Table 4.1). These results indicate that the variables OR and OE are related and the variables OR and OE are not related to EA and not dependent on it.

The correlation between innovativeness and proactiveness is positive with a coefficient of 0.778, and that of Innovation with risk-taking is 0.736. The table also shows that correlation coefficient between Proactiveness and Risk-Taking is 0.766 (Table 4.2). These coefficients suggest that these variables are related and dependent on each other. These correlations were tested at 5% level of significance.

Table 4.1: EE variables Pearson correlation

EE variables: Pearson Correlations				
		Opportunity Exploitation	Opportunity Recognition	Entrepreneurial Activity
Opportunity Exploitation	Pearson Correlation	1	0.533**	-0.38
	Sig. (2-tailed)		0	
	N	98	98	98
Opportunity Recognition	Pearson Correlation	0.533**	1	-1.69
	Sig. (2-tailed)	0		0.95
	N	98	100	98
Entrepreneurial Activity	Pearson Correlation	-0.38		1
	Sig. (2-tailed)	0	0.95	
	N	98	98	98

Table 4.2: EO variables Pearson correlation

EO variables: Pearson Correlations				
		Innovation	Proactiveness	Risk
Innovativeness	Pearson Correlation	1	.778**	.736**
	Sig. (2-tailed)		.000	.000
	N	39	38	38
Proactiveness	Pearson Correlation	.778**	1	.766**
	Sig. (2-tailed)	.000		.000
	N	38	38	38
Risk-taking	Pearson Correlation	.736**	.766**	1
	Sig. (2-tailed)	.000	.000	
	N	38	38	38

4.4 Reliability testing of the scales

4.4.1 EE scale

The Cronbach's alpha test results for EE scale are presented in Table 4.3 below. The test was conducted on the variables that were proved to be related and dependent on each other for the EE scale, thus the entrepreneurial activity variable is not included in the reliability tests. The overall Alpha values for the scale suggest that all measures of the scales had a strong and adequate reliability, since all are above the cut-off value of 0.7 with an overall value of 0.829

Table 4.3: Cronbach Alpha scores of the Entrepreneurial Ecosystem scale

EE Scale-Total Statistics					
Opportunity Recognition	**Scale Mean**	**Scale Variance**	**Corrected Item-Total Correlation**	**Squared Multiple Correlation**	**Cronbach's Alpha**
Q7_1	12.35	21.705	0.531	0.304	0.839
Q7_2	12.24	20.386	0.638	0.491	0.792
Q7_3	11.72	18.183	0.803	0.662	0.713
Q7_4	11.66	20.469	0.663	0.483	0.781
Opportunity Exploitation					
Q8_1	8.36	21.634	0.614	0.408	0.787
Q8_2	8.97	23.350	0.736	0.570	0.726
Q8_3	9.02	21.670	0.721	0.552	0.727
Q8_4	9.62	27.413	0.504	0.272	0.824

4.4.2 EO scale

The Cronbach Alpha test results for reliability of the EO scale are provided in Table 4.4.The overall Alpha values for the scale suggest that all measures of the scale had a strong and adequate reliability, since all are above the cut-off value of 0.7. The overall Alpha value for the EO scale was 0.911.

Table 4.4: Cronbach Alpha scores of the Entrepreneurial Orientation scale

EO Scale-Total Statistics					
Innovativeness	**Scale Mean**	**Scale Variance**	**Corrected Item-Total Correlation**	**Squared Multiple Correlation**	**Cronbach's Alpha**
Q4_1	26.56	44.779	0.699	0.673	0.901
Q4_2	26.46	42.992	0.859	0.813	0.888
Q4_3	26.36	44.131	0.753	0.710	0.896
Q4_4	26.31	44.745	0.756	0.736	0.896
Q4_5	26.26	49.669	0.399	0.359	0.921
Q4_6	26.74	46.564	0.688	0.586	0.901
Q4_7	25.90	46.937	0.704	0.649	0.901
Q4_8	26.23	46.498	0.654	0.564	0.904
Q4_9	26.31	44.850	0.748	0.667	0.897
Proactiveness					
Q5_1	10.13	5.847	0.539	0.293	0.835
Q5_2	9.63	5.320	0.707	0.538	0.758
Q5_3	9.32	5.627	0.656	0.444	0.781
Q5_4	9.13	5.415	0.722	0.567	0.752
Risk-taking					
Q6_1	12.79	10.873	0.479	0.431	0.812
Q6_2	13.26	9.172	0.661	0.643	0.761
Q6_3	12.74	9.118	0.663	0.470	0.760
Q6_4	12.76	9.213	0.621	0.538	0.773
Q6_5	13.18	9.019	0.602	0.628	0.780

4.5 Exploratory factor analysis (EFA) of scale

4.5.1 EE and EO scale EFA suitability test

The computed Kaiser-Meyer-Olkin measure was 0.827 and 0.813 for the EE and EO scale respectively (Table 4.5), an indication that the data from both scales is reasonable to run factor analysis. The Bartlett's Test of Sphericity for the scales had values that are less than 5% significance level, another indication that both scales are suitable for EFA test.

Table 4.5: KMO Measure of Sampling Adequacy and Bartlett's Test of Sphericity results for the EE and EO scales

KMO Measure of Sampling Measure Adequacy and Bartlett's Test of Sphericity		EE Scale	EO Scale
KMO of Sampling Adequacy		0.827	0.813
Bartlett's Test of Sphericity	Approx. Chi-Square	364.73	476.06
	Df	28.00	153.00
	Sig.	0.00	0.00

4.5.2 EE and EO scale EFA factors

The components with the highest measure of variance, as extracted on the basis of having highest Eigenvalues, were identified as component 1 and 2 (Table 4.6) for the EE scale. These components account for 67.522% of the variance of the total variability in the data. The two components have total Eigenvalues > 1.00, the third component Eigenvalue is <1.0 below the cut-off of 1.00. Thus, the EE scale is defined by only two components.

Table 4.6: Total variance explained EE scale

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	4.100	51.245	51.245
2	1.302	16.277	67.522
3	.752	9.397	76.920
4	.561	7.009	83.929
5	.456	5.703	89.632
6	.363	4.539	94.171
7	.244	3.047	97.218
8	.223	2.782	100.000

The components with the highest measure of variance, for the EO scale are components 1, 2 and 3 (Table 4.7). These components account for 65.859% of the variance of the total variability in the data. The three components all have Eigenvalues above the cut-off of 1.00. Thus, the EO scale is defined by 3 components.

Table 4.7: Total variance explained EE scale

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	9.280	51.557	51.557
2	1.444	8.023	59.579
3	1.130	6.280	65.859
4	1.034	5.746	71.606
5	.869	4.825	76.431
6	.812	4.509	80.939
7	.660	3.664	84.604
8	.628	3.491	88.095
9	.456	2.531	90.626
10	.347	1.927	92.553
11	.313	1.738	94.292
12	.264	1.466	95.758
13	.204	1.132	96.890
14	.177	.984	97.874
15	.143	.793	98.667
16	.106	.591	99.259
17	.080	.445	99.703
18	.053	.297	100.000

4.5.3 Scree Plots EE and EO scales

The Scree Plot principal component analysis (PCA) for the EE scale (Figure 4.7) indicates that after the third component the gradient is almost flat, for the same plot, the EO scale, the grading is flat after the third component (Figure 4.8). The flat gradient in both plots confirms that the successive components are accounting for smaller and smaller amounts to the total variance. Therefore, the principal component analysis indicates that the EE scale is defined 2 components and the EO scale by 3.

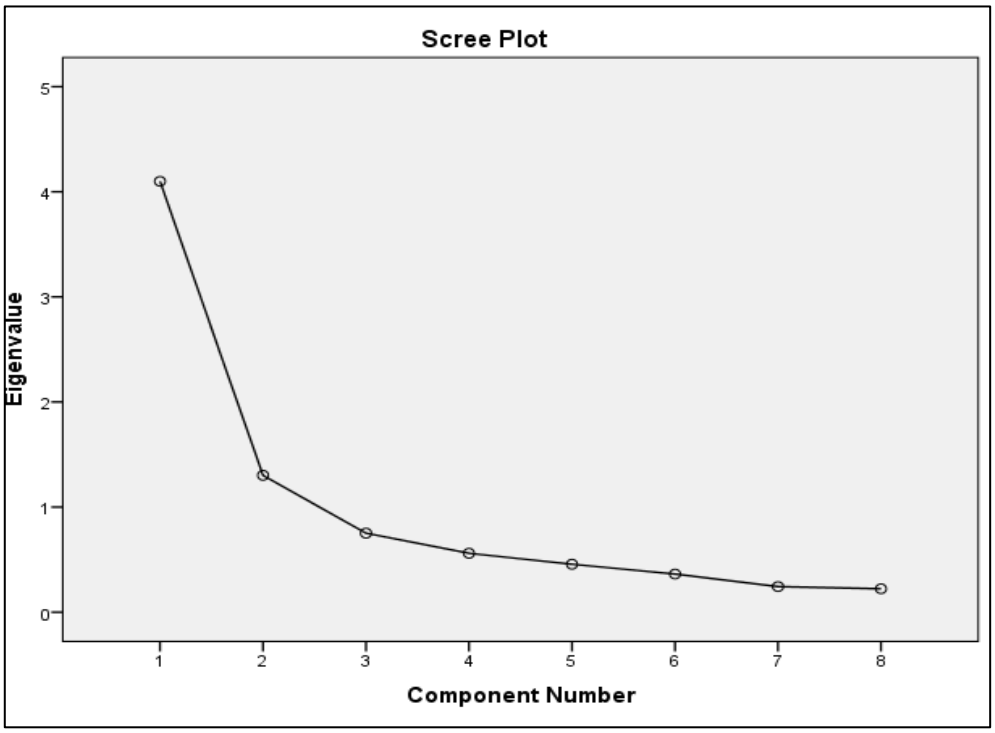


Figure 4.7: PCA Scree Plot EO scale.

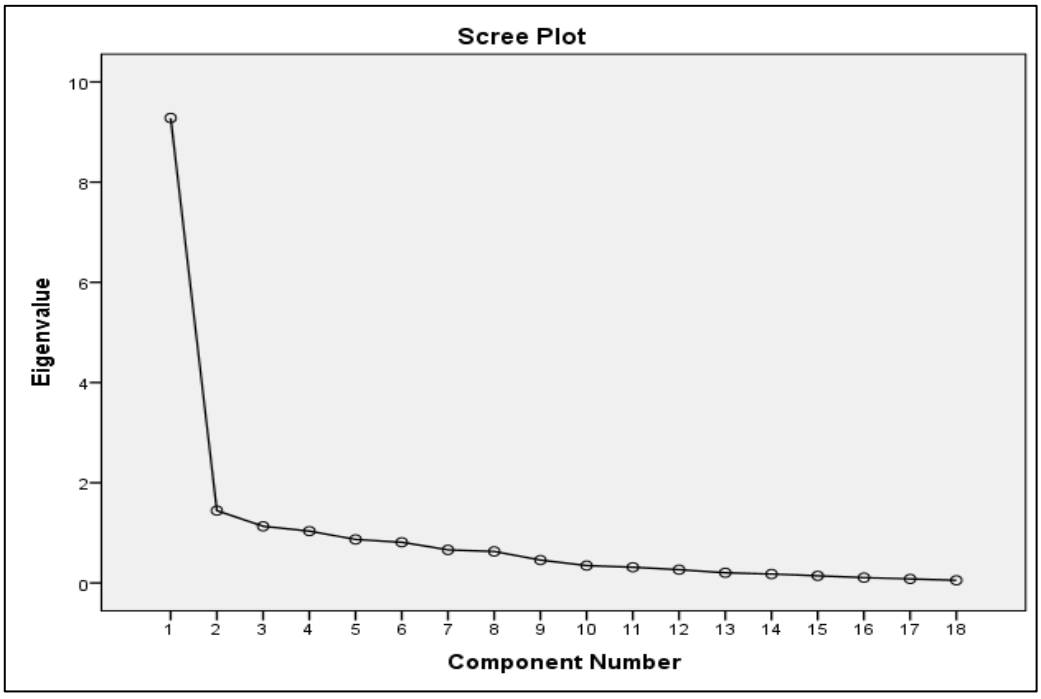


Figure 4.8: PCA Scree Plot EO scale.

4.5.4 Rotated component matrices EE and EO scales

The results of the factor loadings using the varimax method suggest that the EE scale items load into two factors. Component 1 is made up items from opportunity exploitation with the following scale-items: Q8_1 – Q8_4, and component 2 with the scale-items Q7_1-Q7_4 from the opportunity recognition variable (Table 4.8). Component 3 is not defined. The results in Table 4.8 indicate that the EO scale items load into three factors; component 1, 2 and 3. The Components 1, 2 and 3 are comprised of proactiveness, innovativeness and risk-taking scale items. The results for the two rotated component matrixes for both the EE and EO scales indicates that the EE scale is defined by opportunity exploitation and opportunity recognition and EO scale by proactiveness, innovativeness and risk-taking

Table 4.8: Rotated Component Matrix of Entrepreneurial Ecosystem scale

Rotated Component Matrix		
	Component	
	1	2
Q7_1		0.819
Q7_2		0.73
Q7_3		0.841
Q7_4		0.667
Q8_1	0.765	
Q8_2	0.833	
Q8_3	0.819	
Q8_4	0.692	

Table 4.9: Rotated Component Matrix of Entrepreneurial orientation.

Rotated Component Matrix[a]			
	Component		
	1	2	3
Q4_1		0.789	
Q4_2		0.743	
Q4_3		0.609	
Q4_4		0.602	
Q4_7		0.761	
Q5_2	0.829		
Q5_3	0.602		
Q5_4	0.749		
Q6_2			0.823
Q6_5			0.871

4.6 Hypotheses Testing

4.6.1 Conceptual framework model

The factor loading results using the varimax method indicates that the perceived CoJ local EE is measured by the following variables: opportunity recognition and opportunity exploitation, the entrepreneurial activity variable was not retained after the EFA. The perceived EO of the CoJ is measured by proactiveness, innovativeness and risk-taking, all variables were retained post the EFA on the scale. In this regard, it is deemed necessary to eliminate the following hypotheses, $\mathbf{H_{1C}}$, $\mathbf{H_{2C}}$ and $\mathbf{H_{3C}}$ (Figure 4.2) for the modified conceptual framework model of the study.

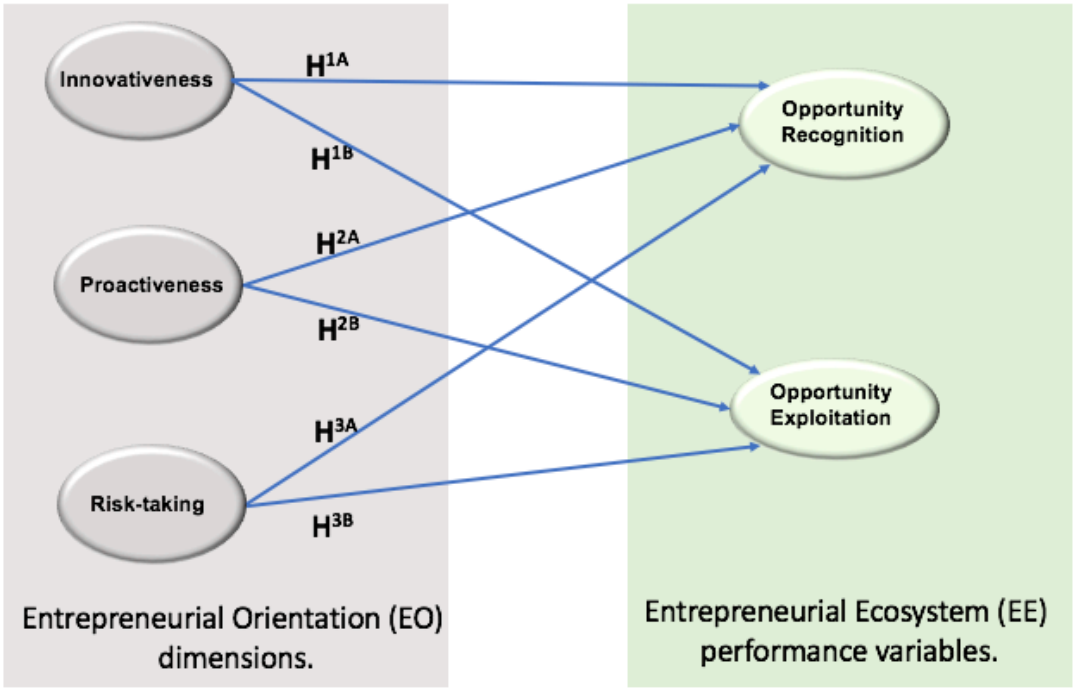


Figure 4.9: Revised conceptual framework model.

4.6.2 Relationship between innovativeness and opportunity recognition and opportunity exploitation

4.6.2.1 Testing H_{1A}

The t-statistic is -3.24 and the corresponding two-tailed p-value is 0.0014 is less than 0.05 (Table A-1), null hypothesis fail-to-reject condition is p-value < 0.05. Therefore, is there is statistical evidence that the difference in means is statistically significantly different from zero and thus the *null hypothesis* is rejected.

Table 4.10: H_{1A} null and alternative hypothesis

Null hypothesis	Alternative hypothesis	Results
$H^{1A:}$ There is no positive relationship between the perceived CoJ innovativeness and its perceived EE's entrepreneurial opportunity recognition.	$H^{1A:}$ There is a positive relationship between the perceived CoJ innovativeness and its perceived EE's entrepreneurial opportunity recognition.	Rejected

4.6.2.2 Testing H_{1B}

The t-statistic is 1.90 and the corresponding two-tailed p-value is 0.059, which is more than 0.05 (Table A-2), the null hypothesis fail-to-reject condition is p-value < 0.05. Therefore, there is statistical evidence that the difference in mean is not statistically significantly different from zero and thus the *null hypothesis* is accepted.

Table 4.11: H_{1B} null and alternative hypothesis

Null hypothesis	Alternative hypothesis	Results
H^{1B}: There is no positive relationship between the perceived CoJ innovativeness and its perceived EE's entrepreneurial opportunity exploitation.	H^{1B}: There is a positive relationship between the perceived CoJ innovativeness and its perceived EE's entrepreneurial opportunity exploitation.	Fail to Reject

4.6.3 Relationship between proactiveness and opportunity recognition and opportunity exploitation

4.6.3.1 Testing H_{2A}

The t-statistic is -4.257 and the corresponding two-tailed p-value is 0.000038, which is less than 0.05 (Table A-3), null hypothesis fail-to-reject condition is at p-value < 0.05. Therefore, there is a statistical evidence that the difference in mean is statistically significantly different from zero, hence the *null hypothesis* is rejected.

Table 4.12: H_{2A} null and alternative hypothesis

Null hypothesis	Alternative hypothesis	Results
H^{2A}: There is no positive relationship between the perceived CoJ proactiveness and its perceived EE's entrepreneurial opportunity recognition.	H^{2A}: There is a positive relationship between the perceived CoJ proactiveness and its perceived EE's entrepreneurial opportunity recognition.	Rejected

4.6.3.2 Testing H_{2B}

The t-statistic is 1.0666 and the corresponding two-tailed p-value is 0.1439, which is greater than 0.05 (Table A-4), null hypothesis fail-to-reject condition is at p-value < 0.05. Therefore, there is a statistical evidence that the difference in mean is not significantly different from zero, hence the *null hypotheses* is accepted.

Table 4.13: H_{2B} null and alternative hypothesis

Null hypothesis	Alternative hypothesis	Results
H^{2B}: There is a no positive relationship between the perceived CoJ proactiveness and its perceived EE's entrepreneurial opportunity exploitation.	**H^{2B}:** There is a positive relationship between the perceived CoJ proactiveness and its perceived EE's entrepreneurial opportunity exploitation**.**	Fail to Reject

4.6.4 Relationship between risk-taking and opportunity recognition and opportunity exploitation

4.6.4.1 Testing H_{3A}

The t-statistic is -4.002 and the corresponding two-tailed p-value is 0.000, which is less than 0.05 (Table A-5), null hypothesis fail-to-reject condition is at p-value < 0.05. Therefore, there is a statistical evidence that the difference in means is statistically significantly different from zero, hence the *null hypothesis* is rejected.

Table 4.14: H_{3A} null and alternative hypothesis

Null hypothesis	Alternative hypothesis	Results
H^{3A}: There is a no positive relationship between the perceived CoJ risk-taking and its perceived EE's opportunity recognition (OR).	**H^{3A}**: There is a positive relationship between the perceived CoJ risk-taking and its perceived EE's opportunity recognition (OR).	Reject

4.6.4.2 Testing H_{3B}

The t-statistic is 1.196 and the corresponding two-tailed p-value is 0.233, which is greater than 0.05 (Table A-6), null hypothesis fail-to-reject condition is at p-value < 0.05. Therefore, there is a statistical evidence that the difference in means is not statistically significantly different from zero, hence the *null hypothesis* is accepted.

Table 4.15: Welch's t-test results for Hypothesis H_{3B}

Null hypothesis	Alternative hypothesis	Results
H^{3B}: There is a no positive relationship between the perceived CoJ risk-taking and its perceived EE's entrepreneurial opportunity exploitation.	**H^{3B}:** There is a positive relationship between the perceived CoJ risk-taking and its perceived EE's entrepreneurial opportunity exploitation.	Fail to reject

4.7 Conclusion

This chapter provided the empirical analysis of the data collected in the study. Descriptive statistics were used to describe data from both CoJ Entrepreneurial ecosystem's entrepreneurs and the CoJ-DeD officials. The Cronbach Alpha test for reliability was conducted on the measures of EE and EO and were all reliable and consistent with an overall score of 0.839 and 0.911 respectively. The Pearson correlation between EE variables indicates a positive significant relationship between opportunity recognition and opportunity exploitation of 0.533. EO variables Pearson correlation coefficient also indicated positive significant relationships between all the variables, innovativeness, proactiveness and risk-taking. The EE components, opportunity recognition and opportunity exploitation were retained and three EO components, innovativeness, proactiveness and risk-taking were also from the EFA. The results from the rotated component matrix for the EE scale necessitated a review of the study's conceptual framework model, the modified model is also presented. The Welch's t-test was utilized

in testing the study's hypothesised model. The tests results were presented in the chapter.

CHAPTER 5: DISCUSSION OF THE RESULTS

5.1 Introduction

This Chapter discusses the empirical results presented in chapter 4. First, the chapter discusses descriptive profiles of samples. Second, the reliability testing of both EE and EO scales is presented. Third, the chapter discusses and explains results from EFA from both scales. Lastly, the results from Welch's t-test assessment of the study's conceptual framework model are discussed and explained. The discussion and explanations of results are presented in comparison with findings from literature.

5.2 Descriptive profile of the study sample

5.2.1 Entrepreneurial Ecosystem sample demographic data

5.2.1.1 Respondents gender profile

The study was comprised of more males (62%) than females (36%) and gender neutral people (2%). The target population for the EE instrument was the nascent entrepreneurs, early start-up and established business owners. These results are consistent with overall findings of Global Entrepreneurship Monitor (GEM) Report South Africa, highlighting more adult male population engaging in early stage entrepreneurial activity (TEA) than women (Herrington and Kew, 2016).

5.2.1.2 Respondent's entrepreneurial activity

The percentage of participants in the study sample that were thinking about starting a business was 29%, 22% were already business owners looking for more opportunities, 17% were only looking for opportunities, 9% had just registered a business, 9% were working on a business plan and 6% were business owners.

5.2.1.3 Respondent's business phase

The percentage of participants of the study sample whose business phase was still in conceptual phase was 42%, 12% businesses on established phase, 10% start-up phase, 10% registration phase, 7% half way start-up and established phase and 2% in matured

phase. These results are somewhat consistent with the GEM Report South Africa findings which suggests that the TEA rate in South Africa is declining (Herrington & Kew, 2016).

5.2.2 Entrepreneurial Orientation sample demographic data

5.2.2.1 Respondent's gender profile

The study sample for the EO scale was comprised of more females (67%) than males (33%).

5.2.2.2 Respondent's directorates

The respondents in the study sample were as follows, Economic development facilitation directorate (17%), Integrated regional economic development facilitation (15%), Strategic management support (13%), Enterprise development (13%) Finance administration and MOE support (11%), Office of the Executive director (11%), Trade Investment and Promotion (7%), DeD Human Resources (2%) and Policy and planning (2%).

5.2.2.3 Respondent's years of service

The majority of the respondent's years of service in the CoJ is 5-10 years (59%), 10-15 years (22%), then 1-5 (11%), 15-20 (4%) and less than 1 year (4%).

5.3 Testing correlation of the scale

The Pearson Correlation method was used to test the correlation between individual variables of both EE and EO scales (Lee, 2016). The outcome of the test between the two measures of the dependent variable, entrepreneurial ecosystem was 0.533 between OR and OE, -0.380 between OR and EA and -1.69 between OE and EA. The results indicate a moderately strong positive association between the OR and OE. The reason for the negative correlation between OR and EA and OE and EA is unclear, this could be caused by the different Likert-scales in the scale-items, EA used 3-point scale while OR and OE used a 7-point scale.

The correlation test between the three measures of EO was 0.778 between innovativeness and proactiveness, 0.736 between innovation and risk-taking and 0766 between proactiveness and risk-taking. The results indicate a strong positive association between the three dimensions of entrepreneurial orientation in the study. The overall correlation results among both dependent and independent variable's measures were positive and above 0.3, an indication of the existence of a relatively strong positive association.

5.4 Testing the reliability of the scales

The reliability of the EE and EO scales were tested by computing Cronbach Alpha coefficients (Tavakol & Dennick, 2011; Cronbach, 1951). The outcome of the tests were overall Alpha coefficients of 0.911 and 0.829 for the EE and EO scales respectively. These values were above the acceptable levels of 0.7 an indication that the scales were reliable and did not require adjustments (Tavakol & Dennick, 2011; Cronbach, 1951).

5.5 Exploratory Factor Analysis

5.5.1 Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity

The Principal Component Exploratory Factor Analysis was run in IMB SPSS on questions relating to both EE and EO scales. The KMO measure of sampling adequacy and Bartlett's Test of Sphericity were used to test the suitability of running EFA on the scales. The KMO test of Sampling Measure of Adequacy results for the EE scale and EO were 0.83 and 0.81 respectively, the values are close to 1.0 indicating that the data from both scales was suitable for running EFA (Table 4.5). The results of Bartlett's Test of Sphericity for both scales had values that were less than 0.05 of the significance level another indication that the data was suitable for factor analysis. The overall results of both tests on the scales indicated that the scale's variables were related and therefore suitable for structure detection.

5.5.2 EFA of the Entrepreneurial Ecosystem and Entrepreneurial Orientation scale

The methods for deciding on the final suitable number of factors for each scale in the study were the PCA and factor loading. The components with the highest measure of variance, extracted on the basis of having the highest Eigenvalues were identified as component 1, 2 and 3 for the EO scale. These components were accountable for 65.9 percent of the variance of total variability in the data. The rotated component matrix analysis results also supported the three-component solution for the EO scale. These results indicated that the CoJ-DeD EO scale is defined by proactiveness, risk-taking and innovativeness. These findings are consistent with (Miller, 1983; Covin & Slevin, 1989) and Kuratko et al., (2008) public sector perspectives on entrepreneurship.

The components with the highest measure of variance, were identified as component 1 and 2 for the EE scale. These components were accountable for 67.52 percent of the variance of total variability in the data. The rotated component matrix analysis results also supported the two-component solution. These results indicated that the CoJ-EE scale is defined by opportunity exploitation and recognition. These findings are consistent with

Shane and Venkataraman's (2000) definition of entrepreneurship; implying that the measurement of the two scale-items measures entrepreneurship in the CoJ.

5.6 Hypotheses Testing

The Welch t-test was used to test the association between the relationship between the perceived entrepreneurial orientation of the CoJ and the perceived CoJ local entrepreneurial ecosystem performance. This method was used because the data was collected from different participants, and were of different sample sizes and the participants were asked different questions. This meant that the data would not follow a normal distribution and would be non-linear. This condition disqualified the use of linear regression analysis.

5.6.1 Relationship between Innovativeness and opportunity recognition and opportunity exploitation

5.6.1.1 Testing H_{1A}

The results of the test implied that the null hypothesis ($p < 0.05$) is rejected for $\mathbf{H_{1A}}$. Therefore, the more CoJ-DeD officials regularly introduce new services and processes the more likely they will experience an increase in the search of information about new ideas on products or services in the city's entrepreneurial ecosystem. These results are consisted with literature that suggests a positive relationship between innovation and firm's performance (Rauch, Wiklund, Lumpkin & Frese 2009; Moreno & Casillas, 2008; Kleinschmidt & Copper, 1991; Subramanian & Nilakanta, 1996). The findings are also consistent with Park's (2005) opportunity recognition model.

5.6.1.2 Testing H_{1B}

The results of the test implied that the null hypothesis ($p > 0.05$) in the study fails to reject the null hypothesis for $\mathbf{H_{1B}}$ (Table A-2). Thus, the more CoJ-DeD officials regularly introduce new services and processes, the more likely they will not experience positive movement in the development of new markets in its entrepreneurial ecosystem

5.6.2 Relationship between proactiveness and opportunity recognition and opportunity exploitation

5.6.2.1 Testing H_{2A}

The results of the test indicate that the null hypothesis ($p < 0.05$) is rejected for **H_{2A}**. Therefore, the more CoJ-DeD officials initiate actions that competitors respond to, the more likely they will experience an increase in the search of information about new ideas on products or services in the city's entrepreneurial ecosystem. These outcomes are consisted with literature that suggests a positive relationship between proactiveness and firm's performance (Rauch et al., 2009; Casillas & Moreno, 2010).

5.6.2.2 Testing H_{2B}

The results of the test indicate that with the null hypothesis ($p > 0.05$), the study fails to reject the null hypothesis for **H_{2B}** (Table 5.4). Hence, the more CoJ-DeD officials initiates actions that competitors respond to (Q5_2 EO scale), the more likely they will not experience a positive movement in new markets development in its entrepreneurial ecosystem (Q8_2 EE scale).

5.6.3 Relationship between risk-taking and opportunity recognition and opportunity exploitation

5.6.3.1 Testing H_{3A}

The results of the test indicate that the null hypothesis ($p < 0.05$) is rejected for **H_{3A}**. Therefore, the more the term risk taking is considered a positive attribute for employees in the CoJ-DeD, the more likely the CoJ will experience an increase in the search of information about new ideas on products or services in its entrepreneurial ecosystem.

These results are consistent with Gupta and Pandit's (2012) observations that research indicates taking excessive risk may results in variant business performance, however in the long run this will prove profitable.

5.6.3.2 Testing H_{3B}

The results of the test indicate that with the null hypothesis ($p > 0.05$), the study fails to reject the null hypothesis for **H_{3B}** (Table A-6). Thus, the more the term risk taking is considered a positive attribute for employees in the CoJ-DeD, the more likely the CoJ will not experience a positive movement in new markets development in its entrepreneurial ecosystem. These results are consistent with the literature that suggests the relationship between risk taking and successful performance of a business is not clear in the literature (Rauch et al., 2009). Wiklund and Shepherd (2005) note that strategies that are riskier may result in performance variation because of failure and success of projects undertaken, based on risky strategies.

5.7 Conclusion

This chapter presented the discussion and explanation of the study's data analysis. The empirical results of the study indicated that EE scale is defined by components, opportunity recognition and opportunity exploitation. These findings are consistent with Shane and Venkataraman's (2000) definition of entrepreneurship. The EO scale had three components, proactiveness, innovativeness and risk-taking. These findings are consistent with the Miller/Covin and Slevin conceptualisation of EO, and Kuratko et al.'s (2008) perspective of entrepreneurship in public sector organisations.

The results from the Welch t-test, indicated that the study rejected the null hypothesis for **H_{1A}, H_{2A} and H_{3A}.** These outcomes were reconcilable with the literature findings on the relationship between innovation, proactiveness and risk-taking and firm's performance; they were also consistent with Kuratko et al.'s (2008) perspective of entrepreneurship for public sector organisations. The other outcomes highlighted that the study failed to reject

the null hypothesis for **H_{1B}, H_{2B}, H_{3B}**. The **H_{3B}** results were found to be consistent with literature on the relationship between risk-taking and firm's performance (Wiklund & Shepherd, 2005). There was no evidence in the study to support **H_{1B}, H_{2B}.**

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter provides the research's conclusions and recommendations. The primary conclusions from the research analysis are presented in summary. The recommendations and areas of further research are presented.

6.2 Conclusions of the study

6.2.1 Research's main objective

The primary objective of this study was to explore the relationship between the perceived EO of CoJ-DeD and the perceived CoJ local EE performance.

In testing the conceptual framework model of the study, the research was based on a quantitative method. The primary data was collected through survey questionnaires, in total, 109 surveys were collected from EE scale, this survey was sent out to nascent entrepreneurs, early start-up and established business owners in the CoJ. The 46 surveys that were collected from the entrepreneurial orientation scale were sent out to the CoJ-DeD middle and senior managers including the executive director. The two scales were tested for reliability using Cronbach Alphas and results were acceptable. The scales were also tested for EFA suitability using KMO Measure of Sampling Measure Adequacy and Bartlett's Test of Sphericity and were found to be acceptable. The EFA was then used to test the factorability of the scale items into specific factors and components were found that relate to their individual scales. The conceptual framework model was then tested using the Welch t-test; this t-test was chosen because the data was collected from two different populations, had different sample sizes and participants were asked different questions.

6.2.2 Hypotheses t-test conclusions

The summary of the conclusions on the study's hypotheses test conclusions are presented in Table 6.1 below.

Table 6.1: Conceptual Framework conclusions

Hypotheses	Conclusion
H_{1A}: There is a positive relationship between the perceived CoJ innovativeness and its perceived EE's entrepreneurial opportunity recognition.	Rejected
H_{1B}: There is a positive relationship between the perceived CoJ innovativeness and its perceived EE's entrepreneurial opportunity exploitation.	Fail to Reject
H_{2A}: There is a positive relationship between the perceived CoJ proactiveness and its perceived EE's entrepreneurial opportunity recognition.	Rejected
H_{2B}: There is a positive relationship between the perceived CoJ proactiveness and its perceived EE's entrepreneurial opportunity exploitation.	Fail to Reject
H_{3A}: There is a positive relationship between the perceived CoJ risk-taking and its perceived EE's opportunity recognition (OR).	Rejected
H_{3B}: There is a positive relationship between the perceived CoJ risk-taking and its perceived EE's entrepreneurial opportunity exploitation.	Fail to Reject

6.2.3 Relationship between innovativeness and opportunity recognition and opportunity exploitation conclusions

6.2.3.1 H_{1A} and H_{1B}

The conclusion for **H_{1A}** in Table 6.1 above implies the more CoJ-DeD officials regularly introduce new services and process, the more they place a strong emphasis on continuous improvement in service delivery and processes, the more likely they will experience an increase in information search about new ideas on products or services in the city and an increase in the alertness to business opportunities in the city's entrepreneurial ecosystem. The conclusion for **H_{1B}** implies, the more CoJ-DeD officials regularly introduce new services and process, the more they place a strong emphasis on continuous improvement in service delivery and processes, the more likely they will experience no change in new markets development based on the perceived business opportunities and no change in entrepreneurial teams put together to pursue business opportunities perceived in the city's ecosystem.

6.2.4 Relationship between proactiveness and opportunity recognition and opportunity exploitation conclusions

6.2.4.1 H_{2A} and H_{2B}

The conclusion for **H_{2A}** in Table 6.1 implies, the more CoJ-DeD officials initiate actions that competitors respond to, the more they monitor market trends and identify future needs of their customers, the more likely they will experience an increase in information search about new ideas on products or services in the city and an increase in alertness to business opportunities in the city's entrepreneurial ecosystem. The conclusion for **H_{2B}** implies, the more CoJ-DeD officials initiate actions that competitors respond to, the more they monitor market trends and identifies future needs of their customers, the more likely they will experience no change in new markets development, based on the perceived business opportunities and no change in entrepreneurial teams put together to pursue business opportunities perceived in the city's ecosystem.

6.2.5 Relationship between risk-taking and opportunity recognition and opportunity exploitation conclusions

6.2.5.1 H_{3A} and H_{3B}

The conclusion for **H_{3A}** in Table 6.1 implies, the more CoJ-DeD officials consider the term risk-taker as a positive attribute for employees in the department, the more the department believes that bold, wide-ranging acts are necessary for achieving business objectives, the more likely they will experience an increase in information search about new ideas on products or services in the city and an increase in alertness to business opportunities in the city's entrepreneurial ecosystem. The conclusion for **H_{3B}** implies, the more CoJ-DeD officials consider the term risk-taker as a positive attribute for employees in the department, the more the department believes that bold, wide-ranging acts are necessary for achieving business objectives, the more likely they will experience no change in new markets development based on the perceived business opportunities and no change in entrepreneurial teams put together to pursue business opportunities perceived in the city's ecosystem.

6.3 Recommendations

To strengthen and enhance entrepreneurial orientation, it is recommended that entrepreneurship should become the dominant strategic way of thinking in the CoJ; this will enable the CoJ to focus on opportunity searching, unlocking new sources of value and service and process innovation that could result in improved performance (Lotz & van der Merwe, 2013). It is also recommended that the CoJ set out goals and objectives for innovation, this must include the number of services or processes innovation the city is willing to embark on. The CoJ should encourage risk-taking among its employees but should first provide rules and procedures for acceptable risk-taking behaviour among the employees.

6.4 Areas for further research

There exists a general consensus in literature on the dimensions that measure EO, however the agreement on the performance measurement of an EE and the method of its detection is still work in progress (Acs et al., 2017). Thus, the underlying dimensions that measure EE performance are not well understood. In this regard, more research is still required to establish the underlying dimensions for measuring EE performance. The majority of the general consensus on the relationship between EO dimensions and organisational performance is mostly from a private sector perspective. Therefore, EO-performance relationship is poorly understood in the public sector framework. Thus, more comprehensive research focused on EO-performance association targeted at public sector organisations is still needed.

REFERENCES

Acs, Z.J., Stam, E., Audretsch, D.B., & O'Connor, A. (2017). The lineages of the entrepreneurial ecosystem approach. *Small Business Economics*, 49, 1-10

Acs, Z., Autio, E. & Szerb, L., (2014). National systems of entrepreneurship: measurement issues and policy implications. *Research Policy* 43 (3), 476-494.

Acs, Z.J., Desai, S., & Klapper, L.F. (2008). What does "entrepreneurship" data really show? *Small Business Economics*, 3(1), 265-28.

Alvedan, J & Boschma, R. (2017). A critical review of entrepreneurial ecosystems research: towards a future research agenda, *European Planning Studies*, 25:6, 887-903, DOI: 10.1080/09654313.2017.1299694. Retrieved August 10, 2018 from: https://doi.org/10.1080/09654313.2017.1299694

Anderson, B.S., Kreiser, P.M., Kuratko, D,F., Hornsby, J,S., & Eshima, Y. (2015). Reconceptualizing Entrepreneurial Orientation. *Strategic Management Journa*l 36, 1579-1596.

Audretsch, D.B. & Belitski, M. (2017). Entrepreneurial ecosystems in cities: Establishing the framework conditions. *Journal of Technology Transfer*, 42,1030-1051

Audretsch, D.B., & Lehmannn, E.E. (2005). Does the knowledge spillover theory of entrepreneurship hold for regions? *Research Policy*. 34(8), 1191-1201.

Audretsch, D.B., Keilbach, M.C. & Lehmannn, E.E. (2006). *Entrepreneurship and Economic Growth.* New York: Oxford University Press, USA

Baird, I.S. & Thomas, H. (1985). Toward a Contingency Model of Strategic Risk Taking, *Academy of Management Review*, 10, 230-243.

Bahardwaj, B.R. Agrawal, S. & Momyaya, K. (2007). Corporate entrepreneurship model: Source of competitiveness, *IIMB Management Review*, 19 (2),131-145

Bartlett, M.S. (1954). A note on the multiplying factors for various x2 approximations, *Journal of the Royal Statistical Society*. Series B (Methodological), 296-298.

Callaghan, C. & Venter, R. (2011). An investigation of entrepreneurial orientation context and entrepreneurial orientation, context and entrepreneurial performance of inner-city Johannesburg street traders. *Southern Africa Business Review*, 15(1) 28-48.

Cantillon, R. (1734). Essaisur La Nature du Commerce en General. Essay on the nature of general commerce. Henry Higgs, Trans. London: Macmillan.

Catell, R.B. (1966). The scree test for the number of factors. *Multivariate behavioral research,* 1(2), 245-276

Casillas, J.C. & Moreno, A.M. (2010). The relationship between entrepreneurial orientation and growth: The moderating role of family involvement, *Entrepreneurship & Regional Development*, 22 (3-4), 265-291.

City of Johannesburg Integrated Development plan 2018/19 Review (n.d). *City of Johannesburg Integrated Development plan 2018/19* Retrieved from https://www.joburg.org.za/documents_/Documents/Intergrated%20Development%20Plan/FINAL%202018-19%20IDP/Annexure%20A%20%202018-19%20IDP%20Review.pdf

City of Johannesburg (2018). *Department Overview*. Retrieved from: https://www.joburg.org.za/departments_/Pages/City%20directorates%20including%20departmental%20sub-directorates/economic%20dev/Overview.aspx

Cook, T.C. & Campbell, D.T. (1979). *Quasi-experimentation: Design and Analysis Issues for Field Settings,* Chicago: Rand McNally.

Cooper, D.R. & Schindler, P.S. (2014) *Business research methods*. New York: McGraw-Hill/Irwin.

Covin, J.G., Green, K.M. & Slevin, D.P. (2006). Strategic process effects on the entrepreneurial orientation: Sale growth rate relationship, *Entrepreneurship Theory and Practice,* 30(1), 57-81.

Covin, J.G. & Miles, M.P. (1999). Corporate entrepreneurship and the pursuit of competitive advantage. *Entrepreneurship Theory and Practice*, 23(3), 47-63.

Covin, J.G. & Slevin, D.P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic Management Journal*, 10, 75-87

Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrica*, 16(3), 297-334.

Cupchik, G. (2001). Constructivist Realism: An Ontology That Encompasses Positivist and Constructivist Approaches to the Social Sciences. *Forum: Qualitative Social Research.* 2(1)

Daniels, L., Medlin, C., O'Connor, A., Statsenko, L., Vnuk, R. & Hancock, G. (2017). Deconstructing the Entrepreneurial Ecosystem Concept.

Davenport, J. (2016). *Just who discovered the Wits Main Reef Series*. Retrieved from: http://www.miningweekly.com/print-version/which-gerge-discovred-the-main-reef-series-2014-04-14

Drucker, P.F., (1985). *Innovation and Entrepreneurship: Practice and Principles*. New York: Harper & Row.

Dubini, P. (1989). The influence of motivations and environment on business start-ups: Some hints for public policies. Journal of Business Venturing, 4(1), 11-26.

Fairlie, R.W. (2012). *Kauffmann index of entrepreneurial activity 1996-2011*. Retrieved February 11, 2019 from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2027008

Frank, H., Kessler, A., & Fink. (2010). Entrepreneurial Orientation and Business Performance- A Replication Study. *Schmalenbach Business Review*, 62: 175-1798, p 180.

Fuerlinger, G.U., Fandl, U. & Funke, T. (2015). The role of the state in the entrepreneurship ecosystem: insights from Germany. *Triple Helix*, 2(1), 1-26. Retrieved February 17, 2019 from: https://link.springer.com/content/pdf/10.1186%2Fs40604-014-0015-9.pdf

Gupta, R., & Pandit, A. (2012). Strategic Entrepreneurial Orientation: Development of a Multi-Dimensional Construct Based on Literature Review. *South Asian Journal of Management*, 19(4), 88-110.

Gurbuz, G. & Aykol, S. (2009). Entrepreneurial management, entrepreneurial orientation and Turkish small firm growth. *Management Research News*. 32(4), 321-336.

Hamel, G. (2000). *Leading the Revolution*, Cambridge MA.: Harvard University Press.

Herrington, W. & Wood, E. (2009). *Global Entrepreneurship Monitor South Africa Report* Available:http://www.gbs.nct.ac.za/gsbwebb/userfiles/gemsouthafrica200pdf.

Herrington, M. Kew, P. & Mwanga, A. (2017). *Global Entrepreneurship Monitor, South Africa Report 2016/2017. Can Small businesses survive in South Africa*. Retrieved August 9, 2018 from: https://www.gemconsortium.org/report/49833

Hornsby, J.S., Kuratko, D.F., & Zahra, S.A. (2002). Middle Managers Perception of internal environment for Corporate Entrepreneurship: Assessing a Measurement Scale. *Journal of Business Venturing*, 17,49-64

Isenberg, D.J (2010). How to start an entrepreneurial revolution. *Harvard Business Review,* 88 (6), 41-50.

Isenberg, D.J (2011). *The entrepreneurship ecosystem strategy as a new paradigm for economic policy: Principles for cultivating entrepreneurship, the Babson entrepreneurship ecosystem project*. Wellesley, MA: Babson College.

Justo, R., de Castro, J. & Maydeu-Olivares, A. (2008). Indicators of entrepreneurship activity: some methodological considerations. *International Journal of Entrepreneurship and Small Business*. 6(4), 604-621.

Keywell, B. (2017, June 14). *The Fourth Industrial Revolution is about empowering people not the rise of the machines*. Retrieved August 10, 2018 from:https://www.weforum.org/agenda/2017/06/the-fourth-industrial-revolution-is-about-people-not-just-machines

Kirzner, I.M. (1973). Competition and Entrepreneurship. Chicago, III. University of Chicago Press. In Buzenitz, L. (1996). Research on entrepreneurial alertness. *Journal of Small Business Management*. 34(4), 35-44.

Kirzner, I.M. (1979). Perception, Opportunity and Profit. Chicago, III. University of Chicago Press. In Buzenitz, L. (1996). Research on entrepreneurial alertness. *Journal of Small Business Management*. 34(4), 35-44.

Kirzner, I.M. (1983). Methods, Process, and Austrian Economics. Lexington, Mass: Lexington Books. In Buzenitz, L. (1996). Research on entrepreneurial alertness. *Journal of Small Business Management*. 34(4), 35-44.

Kimberly, J.R. (1981). Managerial Innovation. In: Lumpkin, G.T., and Dess, G.G., (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review*, 21, 135-172.

Kleinschmidt, E.J. & Cooper, R.G. (1991). The impact of product innovativeness on performance, *Journal of Product Innovation Management*, 8 (4),213-225.

KMO and Bartlett's Test (n.d). Retrieved from: https://www.ibm.com/support/knowledgecenter/en/SSLVMB_sub/statistics_casstudies_project_ddita/spss/tutorials/fac_telco_kmo_01.html

Kuratko, D.F., Morris, M.H. & Covin, J.G. (2008). *Corporate Entrepreneurship and Innovation*. Mason, OH: South-Western

Kurkertz, A., Kollmann, T., Krell, P., & Stockmann, C. (2017). Understanding, differentiating, and measuring opportunity recognition and opportunity exploitation. *International Journal of Entrepreneurship Behaviour & Research*, 23(1), 78-97. https://doi.org/10.1108/IJEBR-12-2015-0290

Kwandalla, P. (1977). Environment and its impact on the organizational designs of firms. *Academy of Management Journal*. 16, 481-495.

Leedy, P.D & Ormrod, J.E. (2005). *Practical Research planning and design*. 8th Edition. Upper Saddle River, N.J: Prentice Hall.

Lotz, H.M & van der Merwe, S.P. (2013). An investigation of the influence of entrepreneurial orientation on the perceived success of agribusiness in South Africa. *South African Journal of Business Management*.44(1),15-32

Lumpkin, G.T., & Dess, G.G., (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review*, 21, 135-172.

Mack, E.A. & Qian, H. (2016). The evolutionary dynamics of entrepreneurial ecosystems. *Urban Studies*. doi 10. 1177/0042098015586547.

Madsen, E.L. (2007). The significance of sustained entrepreneurial orientation on performance of firms A longitudinal analysis. *Entrepreneurship & Regional Development,* 19 March, 185-204

Mason, C.J. & Brown, R. (2014). *Entrepreneurial ecosystems and growth orientated entrepreneurship.* Background paper prepared for the workshop organised by the OECD LEED Programme and the Dutch Ministry of Economic Affairs on Entrepreneurial Ecosystems and Growth Oriented Entrepreneurship, The Hague, Netherlands

Miller, D., (1983). The correlates of entrepreneurship in three types of firms, *Management Science,* 29, 770-791.

Miller, D. & Friesen, P. (1978).Archetypes of Strategy formulation. Management Science, 24, 921-993. In Lumpkin, G.T., and Dess, G.G., (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review*, 21, 135-172.

Mintzberg, H. (1973). Strategy making in three modes, California Management Review, Vol 16, pp 44-58.

Moreno, A.M & Casillas, J.C. (2008). Entrepreneurial orientation and growth of SME's: A causal model, *Entrepreneurship Theory and Practice*, 32(3),507-528.

Morris, M.H. Kuratko, D.F. & Covin, J.G. (2008). *Corporate Entrepreneurship and Innovation*. 2ND Edition. Mason, OH: South-Western

Morris, M.H. Kuratko, D.F. & Covin, J.G. (2011). *Corporate Entrepreneurship and Innovation.* 3rd Edition. Mason, OH.: South-Western Thompson Publishers.

Olawale, F. and Garwe, D. (2010). Obstacles to the growth of new SME's in South Africa: A principal component analysis approach. *African Journal of Business Management*. Vol. 4(5), pp 729-738.

Park, J.S. (2005). Opportunity recognition and product innovation in entrepreneurial hi-tech start-ups: a new perspective and supporting case study. *Technovation*, 25:739-752

Penrose, E.T. (1959). The Theory of the Growth of the firm. Oxford University Press, Oxford, England.

Pikitup. (2015). Retrieved from: http://www.pikitup.co.za/contact-us/

Porter, M.E. (1998). Cluster and the New Economics of Competition. Harvard Business Review 76: 77-90.

Rauch, A., Wiklund, J., Lumpkin, G.T. & Frese M. (2009). Entrepreneurial Orientation and business performance. *Entrepreneurship: Theory and Practice* 33, 761-787.

Rauch, A., Wiklund, J., Frese, M., & Lumpkin, G.T., (2004). *Entrepreneurial Orientation and business performance: cumulative empirical evidence*, Frontiers of Entrepreneurship Research, Babson College, Wellesley. MA.

Schilling, M.A. (2005). Strategic Management of technological innovation. Boston, M.A: McGraw-Hill Irwin.

Schwab, K. (2016, Jan 14). *The fourth industrial revolution what it means and how to respond.* Retrieved August 10, 2018 from: https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond

Schumpeter, J.A. (1934). The theory of economic development. Cambridge, M.A: Harvard University Press.

Schumpeter, J.A. (1942). Capitalism, socialism and democracy. New York: Harper & Brothers.

Scree Plots. (n.d). Retrieved from: https://www.ibm.com/support/knowledgecenter/en/SSLVMB_sub/statistics_casestudies_project_ddita/spss/tutorials/fac_cars_scree_01.html

Segal, G., Bogia, D. & Schoenfeld, J. (2005). The motivation to Become an Entrepreneur. *International Journal of Entrepreneurial Behaviour and Research* 11, 42-57

Shane, S. & Venkataraman, N. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review*, 25, 217-226.

Shepherd, D., Wiklund, J., & Haynie, J.M. (2007). Moving forward: Balancing the financial and emotional costs of business failure. *Journal of Business Venturing*, 28(2), 318-328.

Spigel, B. (2015). The relational organisation of entrepreneurial ecosystems. *Entrepreneurship Theory and Practice*. doi: 10.1111\etap.12167

Stam, E. (2015). Entrepreneurial ecosystems and regional policy: A sympathetic critique. *European Planning Studies*. 23(9), 1759-1769. doi: 10.1080/09654313.2015.1061484.

Stam, E & Spigel, B. (2017). Entrepreneurial ecosystems. In Blackburn, R., De Clercq, D., Heinone, J., and Wang, Z. (Eds.), *The SAGE handbook of small business entrepreneurship.* London: SAGE. Retrieved from https://us.sagepub.com/en-us/nam/the-sage-handbook-of-small-business-and-entrepreneurship/book245753#features

Statistics South Africa (2011). *City of Johannesburg*. Retrieved from http://www.statssa.gov.za/?page_id=993&id=city-of-johannesburg-municipality

Statistics South Africa (April 19, 2018). *If South Africa's provinces were independent states.* Retrieved February 11, 2019 from: http://www.statssa.gov.za/?p=11092

Statistics South Africa (February 13, 2019). *Unemployment drops in fourth quarter of 2018*. Retrieved from http://www.statssa.gov.za/?p=11897

Tavakol, M. & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*. 2,53-55

Stevenson, H.H., Roberts, M.J. & Grousbeck, H.I (1989). *Business ventures and entrepreneur*. Hoewood, IL.: Richard D Irwin Publishing.

Subramanian, A. & Nilakanta, S. (1996). Organizational innovativeness: Exploring the relationship between organizational determinants of innovation, types of innovations and measure of organizational performance. *Omega*, 24(6), 631-647.

Venter, R., Urban, B., Beder, L., Oosthuizen, C., Reddy, C., & Venter, E., (2015). *Entrepreneurship Theory in Practice*. 3rd Edition. Cape Town: Oxford University Press.

Venkatraman, N. (1989). Strategic orientation of business enterprises: The construct, dimensionality and measurement. *Management Science*, 35,942-962.

Von Stamm, B. (2008). *Managing innovation, design and creativity*, 2nd Edition. Brighton, West Sussex: John Wiley & Sons.

Wales, W.J., (2016). Entrepreneurial Orientation a review and synthesis of promising research directions. *International Small Business Journal*. Vol. 34(1), 3-15.

Welch's Test for Unequal Variance. (2015, March 11). Retrieved from: https://www.statisticshowto.datasciencecentral.com/welchs-test-for-unequal-variances/

Wiklund, J. (1999). The Sustainability of the Entrepreneurial Orientation-Performance Relationship. *Entrepreneurship Theory and Practice*. 24(1), 37-48.

Wiklund, J. & Shepherd, D. (2005). Entrepreneurial orientation and small business performance: A configurational approach, *Journal of Business Venturing* 20(1), 71-91.

Zahra, S.A., & Covin, J.G. (1995). Contextual influences on the corporate entrepreneurship-performance relationship: a longitudinal analysis, *Journal of Business Venturing*, 10(1), 43-58.

Zikmund, W.G & Babin, B.J (2007). *Exploring marketing research*. 9TH Edition. Mason, OH: Thomson Learning.

APPENDIX 1: WELCH'S T-TEST RESULSTS

Appendix 1A: Welch's t-test results for Hypothesis $H_{1A,1B}$

Table A-1: t-Test: Two-Sample Assuming Unequal Variances
Hypothesis H_{1A}

	Innovation	Opportunity Recognition
Mean	3.379227053	3.9975
Variance	0.694439554	2.121837121
Observations	46	100
Hypothesized Mean Difference	0	
Df	137	
t Stat	-3.244426334	
P(T<=t) one-tail	0.000739425	
t Critical one-tail	1.65605208	
P(T<=t) two-tail	0.001478849	
t Critical two-tail	1.977431212	

Table A-2: t-Test: Two-Sample Assuming Unequal Variances Hypothesis H_{1B}

	Innovation	Opportunity Exploitation
Mean	3.379227053	2.99744898
Variance	0.694439554	2.461977 961
Observations	46	98
Hypothesized Mean Difference	0	
Df	140	
t Stat	1.903692385	
P(T<=t) one-tail	0.029501237	
t Critical one-tail	1.655810511	
P(T<=t) two-tail	0.059002473	
t Critical two-tail	1.97705372	

Appendix 1B: Welch's t-test results for Hypothesis $H_{2A,2B}$

Table A-3: t-Test: Two-Sample Assuming Unequal Variances H^{2A}

	Proactiveness	Opportunity Recognition
Mean	3.206521739	3.9975
Variance	0.611623188	2.121837121
Observations	46	100
Hypothesized Mean Difference	0	
Df	141	
t Stat	-4.257587494	
P(T<=t) one-tail	0.0000188	
t Critical one-tail	1.655732287	
P(T<=t) two-tail	0.000038	
t Critical two-tail	1.976931489	

Table A-4: t-Test: Two-Sample Assuming Unequal Variances H^{2B}

	Proactiveness	Opportunity Exploitation
Mean	3.206521739	2.99744898
Variance	0.611623188	2.461977961
Observations	46	98
Hypothesized Mean Difference	0	
Df	141	
t Stat	1.066664706	
P(T<=t) one-tail	0.14397313	
t Critical one-tail	1.655732287	
P(T<=t) two-tail	0.28794626	
t Critical two-tail	1.976931489	

Appendix 1C: Welch's t-test results for Hypothesis $H_{3A,3B}$

Table A-5: t-Test: Two-Sample Assuming Unequal Variances H^{3A}

	Risk	Opportunity Recognition
Mean	3.236842105	3.9975
Variance	0.566173542	2.121837121
Observations	38	100
Hypothesized Mean Difference	0	
Df	124	
t Stat	-4.002482894	
P(T<=t) one-tail	0.000053576	
t Critical one-tail	1.65723497	
P(T<=t) two-tail	0.000107151	
t Critical two-tail	1.979280117	

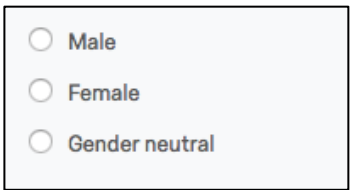
Table A-6: t-Test: Two-Sample Assuming Unequal Variances Hypothesis H^{3B}

	Risk	Opportunity Exploitation
Mean	3.236842105	2.99744898
Variance	0.566173542	2.461977961
Observations	38	98
Hypothesized Mean Difference	0	
Df	128	
t Stat	1.196643657	
P(T<=t) one-tail	0.1168286	
t Critical one-tail	1.656845226	
P(T<=t) two-tail	0.2336572	
t Critical two-tail	1.97867085	

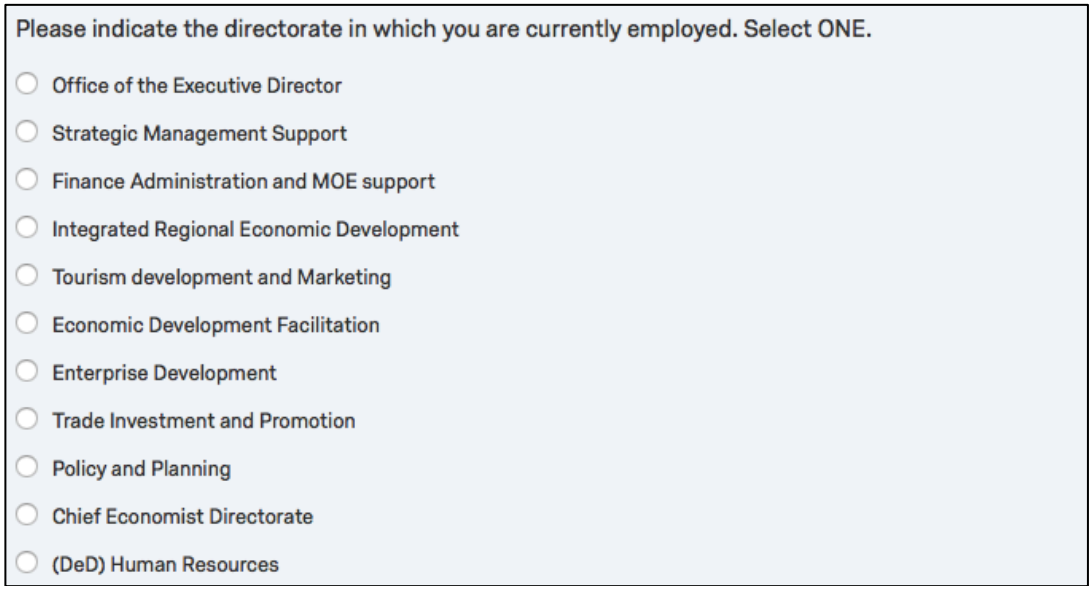
APPENDIX 2: RESEARCH INSTRUMENTS

Appendix 2A: Department of Economic Development City of Johannesburg (CoJ) Entrepreneurial Orientation

1. Please indicate your gender orientation



2. Please indicate the directorate in which you are currently employed. Select ONE.



3. Please indicate your number of years of service in the City of Johannesburg.

- ○ Less than 1 year
- ○ 1 - 5 years
- ○ 5 - 10 years
- ○ 10 - 15 years
- ○ 15 - 20 years
- ○ More than 20 years

4. In each of the statements below please select the number that best corresponds to your level of agreement with the statement.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
	1	2	3	4	5
Our department (DeD) regularly introduces new services and processes	○	○	○	○	○
Our department (DeD) places a strong emphasis on new and innovative services and processes	○	○	○	○	○
Our department (DeD) has increased the number of services offered during the past five years	○	○	○	○	○
Our department (DeD) is continually pursuing new opportunities.	○	○	○	○	○
Over the past five years, changes in our processes and services have been quite dramatic.	○	○	○	○	○
In our department (DeD) there is a strong relationship between the number of new ideas generated and the number of new ideas successfully implemented	○	○	○	○	○
Our department (DeD) places a strong emphasis on continuous improvement in service delivery and processes	○	○	○	○	○
Our department (DeD) has a widely held belief that innovation is an absolute necessity for the business future	○	○	○	○	○
Our leaders seek to maximize value from opportunities without constraint to existing models, structures or resources.	○	○	○	○	○

5. In each of the statements below please select the number that best corresponds to your level of agreement with the statement.

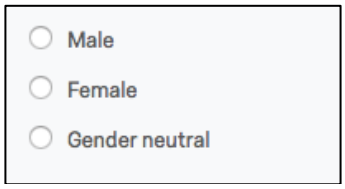
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
	1	2	3	4	5
Our department (DED) is very often the first one to introduce new services and processes.	○	○	○	○	○
Our department (DED) typically initiates actions that competitors respond to.	○	○	○	○	○
Our department (DED) continuously seeks new processes and services.	○	○	○	○	○
Our department (DED), monitors market trends and identifies future needs of our customers.	○	○	○	○	○

6. In each of the statements below please select the number that best corresponds to your level of agreement with the statement.

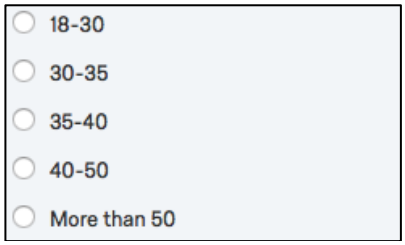
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
	1	2	3	4	5
When confronted with an uncertain decision, our department (DeD) typically adopts a bold posture in order to maximize the probability of exploiting opportunities.	○	○	○	○	○
In general, our department (DeD) has a strong, inclination towards high-risk projects.	○	○	○	○	○
Owing to the environment, our department (DeD) believes that bold, wide-ranging acts are necessary to achieve the business objectives	○	○	○	○	○
In our department (DeD) employees are often encouraged to take calculated risks concerning new ideas in the department.	○	○	○	○	○
The term " risk taker" is considered a positive attribute for employees in our department (DeD)	○	○	○	○	○

Appendix 2B: City of Johannesburg (CoJ) Entrepreneurial Ecosystem Performance

1. Please indicate your gender orientation.



2. Please indicate your age.



3. Please select ONE option that best describes your current employment status.



4. Please select ONE option that best describes your current entrepreneurial activity in any of the 7 regions City of Johannesburg.

- ○ Thinking about starting a business in the City of Johannesburg
- ○ Working on a business plan, business to operate in the City of Johannesburg
- ○ Looking for business opportunities in the City of Johannesburg
- ○ Just registered a business to operate in the City of Johannesburg
- ○ Business owner in the City of Johannesburg
- ○ Business owner looking for more opportunities in the City of Johannesburg

5. Please indicate at which growth phase or stage is the business

- ○ Conceptual Phase (Thinking about starting a business)
- ○ Business Plan Phase (Completing your business plan)
- ○ Registration Phase (Just registered your business)
- ○ Start-up Phase (The business is less than one year in operation)
- ○ Established business phase (The business is more than 3 and half years in operation)
- ○ Mid-Point Phase between Start up and Established Business (The business is more than 1 year but less 3 and half years)
- ○ Matured business (More than 7 years in operation)

6. Please indicate the number of employees in the business.

- ○ 0
- ○ 1
- ○ 1-5
- ○ 5-15
- ○ 15-30
- ○ 30-50
- ○ More than 50

7. In each of the following statements below please SELECT the NUMBER that best corresponds to your level of AGREEMENT with the statement.

	Disagree Strongly	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Agree Strong
	1	2	3	4	5	6	7
I am alert to business opportunities in the City of Johannesburg	○	○	○	○	○	○	○
I search systematically for business opportunities in the City of Johannesburg	○	○	○	○	○	○	○
I look for information about new ideas on products or services in the City of Johannesburg	○	○	○	○	○	○	○
I am regularly scanning the environment for business opportunities in the City of Johannesburg.	○	○	○	○	○	○	○

8. In each of the following statements below please SELECT the NUMBER that best corresponds to your level of AGREEMENT with the statement.

	Disagree Strongly	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Agree Strong
	1	2	3	4	5	6	7
I have set up an organization to pursue a business opportunity I perceived in the City of Johannesburg	○	○	○	○	○	○	○
Based on a business opportunity I perceived, I have developed a new market in the City of Johannesburg	○	○	○	○	○	○	○
I have put together an entrepreneurial team to pursue a business opportunity I perceived in the City of Johannesburg.	○	○	○	○	○	○	○
I have approached investors (eg angel investors or venture capitalists) to acquire funding for a business opportunity in the City of Johannesburg.	○	○	○	○	○	○	○

9. In each of the questions below please SELECT the NUMBER that best corresponds to your answer.

	Definitely, YES	Uncertain/ Not Sure	Definitely, NO
	1	2	3
Do you know of any current independent start-up business in any of the 7 regions of the City of Johannesburg?	○	○	○
Does your current job involve a start-up business in any of the 7 regions of the City of Johannesburg?	○	○	○
Are you an owner/manager of a business in any of the 7 regions of the City of Johannesburg?	○	○	○
Do you know of any Angel Investor in any of the 7 regions in the City of Johannesburg?. (An Angel Investor is commonly a wealthy individual that agrees to invest in a small start-up company that has little access to capital, they are focused on helping the start-up take the first steps, rather than profit)	○	○	○
Do you know any Entrepreneur in the last two years in any of the 7 regions of the City of Johannesburg?	○	○	○

APPENDIX 3: UNIVERSITY LETTERS

Appendix 3A: Survey/ interview participant introduction

The Graduate School of Business Administration
University of the Witwatersrand, Johannesburg
2 St David's Place, Parktown Johannesburg, 2193 South Africa
PO Box 98, WITS, 2050

To Whom It May Concern:

SURVEY/INTERVIEW PARTICIPANT INTRODUCTION

Entrepreneurial orientation of the City of Johannesburg, South Africa, implications for metropolitan municipal entrepreneurial ecosystem performance

This is to confirm that Jones Malakoane is undertaking a bona fide academic project in partial fulfillment of the requirements of the Master of Business Administration (MBA) degree at the Graduate School of Business Administration, University of the Witwatersrand, Johannesburg (Wits Business School), provided the student can produce a valid student card that confirms his/her current registration.

Wits Business School MBA students are required to carry out an Applied Research Project on a topic of their choice, which typically requires data collection and analysis grounded in academic literature. The final project will be available to other scholars through the University library.

Should you have any queries regarding the project please contact the student, the project supervisor or the undersigned.

Student
Jones Malakoane
011 764 2243
083 418 3416
jonzy.malaks@gmail.com

Project Supervisor
Dr Murimbika
011 717 9999
083 613 6530
mcedward.murimbika@wits.ac.za

Yours sincerely,

Prof Anthony Stacey
Director: Postgraduate Student Research
011 717 3587
082 880 4531
Anthony.Stacey@wits.ac.za

Appendix 3B: Confidential disclosure undertaking

The Graduate School of Business Administration
University of the Witwatersrand, Johannesburg
2 St David's Place, Parktown Johannesburg, 2193 South Africa
PO Box 98, WITS, 2050

To Whom It May Concern:

CONFIDENTIAL DISCLOURE UNDERTAKING

Entrepreneurial orientation of the City of Johannesburg, South Africa, implications for metropolitan municipal entrepreneurial ecosystem performance

This is to confirm that Jones Malakoane is undertaking a bona fide academic project in partial fulfillment of the requirements of the Master of Business Administration (MBA) degree at the Graduate School of Business Administration, University of the Witwatersrand, Johannesburg (Wits Business School), provided the student can produce a valid student card that confirms his/her current registration.

Wits Business School MBA students are required to carry out an Applied Research Project on a topic of their choice, which typically requires data collection and analysis grounded in academic literature. The final project will be available to other scholars through the University library.

We would appreciate any assistance that you may be willing to give to our students in collecting data and preparing their final report. The data itself will remain confidential, the source of the data will not be disclosed and results will only be presented in a summarized format.

Should you have any queries regarding the project please contact the student, the project supervisor or the undersigned.

Student
Jones Malakoane
011 764 2243
083 418 3416
jonzy.malaks@gmail.com

Project Supervisor
Dr Murimbika
011 717 9999
083 613 6530
mcedward.murimbika@wits.ac.za

Yours sincerely,

Prof Anthony Stacey
Director: Postgraduate Student Research
011 717 3587
082 880 4531
Anthony.Stacey@wits.ac.za

APPENDIX 4: COVER LETTERS

Appendix 4A: Cover letter for entrepreneurial ecosystem performance research instrument.

Hi guys

Hope you all of you are well and in good health. Kindly assist me by completing my ARP research survey. The survey can be found by clicking the link below:

https://wits.eu.qualtrics.com/jfe/form/SV_6RKPbMMsfSHCNPD

The completion of this survey should take you approximately 10 minutes. Your participation in the survey is completely voluntary and your answers will be kept anonymous.

Should you have questions or queries feel free to contact me on 079 526 0636.

Regards,
Jones Malakoane
MBA Student: 511538

Appendix 4B: Cover letter for entrepreneurial orientation CoJ-DeD research instrument.

Hi guys

I am Jones Malakoane an MBA Student at Wits Business School, see the university letters attached. Kindly assist me by completing my MBA research survey. The survey can be found by clicking the link below:

https://wits.eu.qualtrics.com/jfe/form/SV_89cWky03pUpYl01

The completion of this survey should take you approximately 10 minutes. Your participation in the survey is completely voluntary and your answers will be kept anonymous. Feel free to forward this message both via e-mail or on WhatsApp (just copy and paste) or LinkedIn to some of your colleagues at CoJ Department of Economic Development.

Should you have questions or queries feel free to contact me on 079 526 0636.

Regards,
Jones Malakoane

APPENDIX 5: CONSISTENCY MATRIX

Research Question: What is the relationship in practice between the metropolitan municipal Entrepreneurial Orientation and its local Entrepreneurial Ecosystem performance? The present study answers this question by exploring the relationship between the level of entrepreneurship in a government organisation, the City of Johannesburg metropolitan municipality Department of Economic Development Entrepreneurial Orientation and the performance of its local Entrepreneurial Ecosystem

Sub problems	Literature Review	Modified Hypotheses	Source of data	Type of data	Analysis
To determine the relationship between CoJ perceived EO innovativeness dimension and its perceived local EE performance.	(Schumpeter, 1934; Kimberley, 1981; Miller, 1983; Covin and Slevin, 1989; Lumpkin and Dess, 1996; Kurkertz et al., 2017; Shane and Venkataraman, 2000; Herrington et al., 2017; Kuratko et al., 2008; Rauch, Wiklund, Lumpkin and Frese 2009; Moreno and Casillas, 2008; and Kleinschmidt and Copper, 1991; Subramanian and Nilakanta, 1996)	**H1A:** There is a positive relationship between the perceived CoJ innovativeness and its perceived EE's entrepreneurial opportunity recognition.	EO research instrument survey questionnaire (Q4_1 – Q4_9)	Ordinal	Cronbach Alphas, Pearson Correlation, Kaiser-Meyer-Olkin Measure of Sampling Measure Adequacy and Bartlett's Test of Sphericity, Exploratory Factor Analysis, Welch's t-test.
			EE research instrument survey questionnaire (Q7_1 – Q7_4)		
		H1B: There is a positive relationship between the perceived CoJ innovativeness and its perceived EE's entrepreneurial opportunity exploitation.	EO research instrument survey questionnaire (Q4_1 – Q4_9)		
			EE research instrument survey questionnaire (Q8_1 – Q8_4)		
To determine the relationship between CoJ perceived EO proactiveness dimension and its perceived local EE performance.	(Cantillon, 1734; Miller, 1983; Covin and Slevin, 1989; Lumpkin and Dess, 1996; Venter et al., 2015Kurkertz et al., 2017; Shane and Venkataraman, 2000; Herrington et al., 2017, Kuratko et al., 2008; Casillas and	**H2A:** There is a positive relationship between the perceived CoJ proactiveness and its perceived EE's entrepreneurial opportunity recognition.	EO research instrument survey questionnaire (Q5_1 – Q5_4)	Ordinal	Cronbach Alphas, Pearson Correlation, Kaiser-Meyer-Olkin Measure of Sampling Measure Adequacy and Bartlett's Test of Sphericity, Exploratory Factor Analysis, Welch's t-test.
			EE research instrument survey questionnaire (Q7_1 – Q7_4)		
		H2B: There is a positive relationship between the perceived CoJ	EO research instrument survey questionnaire (Q5_1 – Q5_4)		

	Moreno, 2010; Rauch et al., 2009)	proactiveness and its perceived EE's entrepreneurial opportunity exploitation.	EE research instrument survey questionnaire (Q8_1 – Q8_4)		
To determine the relationship CoJ perceived EO risk-taking dimension and its perceived local EE performance.	(Penrose, 1959, Miller, 1983, Covin and Slevin; Lumpkin and Dess, 1996; Gupta and Pandit, 2012 Kurkertz et al., 2017; Shane and Venkataraman, 2000; Herrington et al., 2017, Kuratko et al., 2008; Rauch et al., 2009; Wiklund and Shepherd, 2005)	**H3A:** There is a positive relationship between the perceived CoJ risk-taking and its perceived EE's opportunity recognition	EO research instrument survey questionnaire (Q6_1 – Q6_5)	Ordinal	Cronbach Alphas, Pearson Correlation, Kaiser-Meyer-Olkin Measure of Sampling Measure Adequacy and Bartlett's Test of Sphericity, Exploratory Factor Analysis, Welch's t-test.
			EE research instrument survey questionnaire (Q7_1 – Q7_4)		
		H3B: There is a positive relationship between the perceived CoJ risk-taking and its perceived EE's entrepreneurial opportunity exploitation	EO research instrument survey questionnaire (Q6_1 – Q6_5)		
			EE research instrument survey questionnaire (Q8_1 – Q8_4)		