CASA0012 Dissertation Book

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CASA0012, MSc Spatial Data Science and Visualisation Dissertation

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This dissertation is submitted in part requirement for the
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Abstract

Some abstract text

Declaration

I, Zeqiang Fang, hereby declare that this dissertation is all my own original work and that all sources have been acknowledged. It is xxx words in length

Acknowledgements

I would like to thank blah blah

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Abbreviations

Term	Abbreviation
Digital Elevation Model	DEM
Digital Surface Model	DSM
Digital Terrain Model	DTM

Chapter 1

Introduction

1.1 Background

To be done

1.2 Research Question and Objectives

To be done

1.3 Report Structure

To be done

Chapter 2

Literature Review

2.1 Industry Cluster & Tech Cluster

Tech clusters like Silicon Valley play a central role for modern innovation, business competitiveness, and economic performance. This paper reviews what constitutes a tech cluster, how they function internally, and the degree to which policy makers can purposefully foster them. We describe the growing influence of advanced technologies for businesses outside of traditional tech fields, the strains and backlash that tech clusters are experiencing, and emerging research questions for theory and empirical work.

2.2 Cluster Dynamics

Industrial dynamics and clusters: a survey, regional research. This article reviews clusters and their impact on the entry, exit, and growth of firms, as well as the literature supporting the evolutionary dynamics of cluster formation. This extensive review shows strong evidence that clusters promote the entry of manufacturers, but the evidence that clusters can promote the growth and survival of firms is rather weak. From a number of open-ended questions, this

research extracts various future research paths that emphasize the importance of manufacturer heterogeneity and the exact mechanism that supports the localized economy.

2.3 Location Quotient

On average, companies in large cities are more productive. There are two main explanations: corporate choice (big cities strengthen competition and only allow the most productive people to survive) and agglomeration economies (big cities promote interaction and increase productivity), which may be strengthened by the natural advantages of localization. In order to distinguish them, we nested a general version of the easy-to-handle company selection model and a standard agglomeration model. Stronger choices in large cities cut the distribution of productivity to the left, while stronger gatherings move to the right and expand the distribution. Using this forecast, French firm-level data, and new quantile methods, we show that firm choices cannot explain differences in spatial productivity. The results are applicable to various departments, city size thresholds, institutional samples and regional definitions.

Chapter 3

Methodology

3.1 Research Framework

$$p = h\frac{c}{\varrho}$$

3.2 Data Source and Processing

3.2.1 Tech Firms Finding

3.2.2 Dynamics Measuring Index

3.3 Quatitative Analysis and Methods

3.3.1 Tech Cluster Identifying

3.3.2 Dynamics Analysis

3.3.3 Location Quotients

3.4 Limitations

3.5 Ethical Statement

Chapter 4

Results

4.1 Visualisation and Analysis of Tech Cluster

4.1.1 Distribution

4.1.2 Descriptive Analysis

4.2 Visualisation and Analysis of Dynamics

4.2.1 Regression

Chapter 5

Discussion

Short introduction to the chapter, reviewing the previous chapter and detailing what this one aims to achieve and build upon.

To be done

5.1 Research significance

5.1.1 Global development goals

5.1.2 Local policy

5.1.3 Academic research

5.2 Limitations

To be done

5.3 Transferability

To be done

Chapter 6

Conclusion

Short introduction to the chapter, reviewing the previous chapter and detailing what this one aims to achieve and build upon.

To be done

- Kerr, William R., and Frederic Robert-Nicoud. 2020. "Tech Clusters."Journal of Economic Perspectives, 34 (3): 50-76.https://www.aeaweb.org/articles?id=10.1257/jep.34
- Frenken, K., Cefis, E., & Stam, E. (2015). Industrial Dynamicsand Clusters: A Survey. Regional Studies, 49(1), 10-27.doi:10.1080/00343404.2014.904505Frenken K., Cefis E. and Stam E.
- Combes, P.-P., Duranton, G., Gobillon, L., Puga, D. and Roux, S. (2012),The Productivity Advantages of Large Cities: Distinguishing AgglomerationFrom Firm Selection. Econometrica, 80: 2543-2594.https://doi.org/10.3982/E

Appendix A Research log

subsection

sub sub section

Date	Task
31st May 2020	data search, commenced literature review
7th June 2020	revised literature in the direction of x

Appendix B Proposal