Canadian Innovation Supercluster Initiative, an empirical analysis

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Research Question

How does the development and introduction of the Canadian "Innovation Supercluster Initiative" (ISI) development regions affect economic growth

1 Motivation and Contribution

Regional policy and development are of ever-growing importance in Canada. With the recent introduction of Bill C-5, inter-provincial trade will be supported as it has not been before. The introduction of the Canadian Innovation Supercluster Initiative (ISI) aims to assist in the development of 5 major industries. These industries include Digital Technologies, Protein Industries, Advanced Manufacturing, Scale AI, and Ocean.

Analyzing the impact of these development areas will allow us to judge the efficacy of said policies and determine whether they are a worthwhile use of government expenditure.

Currently, there are two important papers to highlight. "The Economics of Place-Making Policies" (Kline, Patrick [2014]) focuses on the concepts of place-based policy as an idea, rather than a specific analysis of ISIs. "The Innovation Superclusters Initiative in Canada: A new policy strategy?" (Doloreux, David [2022]) focuses rather on the theoretical ideas behind ISIs and the framework set by the Government of Canada.

2 Data

This paper will use data from Statistics Canada to supply data on economic growth. This will include GDP per capita data across a specified time horizon required for the analysis. Statistics Canada is the primary source for Canadian economic statistics, and the quality of data is high.

Data outlining the ISIs, such as the amount of money supplied, location of the supercluster and other important factors, will be retrieved through the Government of Canada website.

2.1 Issues

A major issue that may present itself in this research is the newness of the program. This initiative was first proposed in 2018. Since then, progress has been made in all areas of the ISI and should result in a measurable impact. However, because of the newness of the data, there is no direct analysis completed yet. While this may create a data collection issue, it exemplifies the importance of this study.

3 Identification

This paper will analyze the impact of the introduction of the Canadian Innovation Supercluster Initiative on economic growth, specifically on GDP. I use a difference-in-difference framework, which will look at pre- and post-treatment economic growth. Where treatment is defined as the introduction of the ISIs. This model will also include both location and year fixed effects to account for other factors of economic status. A general area of impact will also need to be determined to analyze region of impact. Some ISIs, while impacting a localized area, may also impact national growth. The identification assumption is that the introduction of ISIs will lead to positive economic growth in surrounding areas, conditional on controls.

The equation used in the estimate will be as follows:

$$GDP_{it} = \alpha + \beta\left(HasISI_i \times PostIntro_t\right) + \gamma_i + \delta_t + \varepsilon_{it} \tag{1}$$

where, GDP_{it} is the outcome for place i in year t, $HasISI_i$ is a binary variable that indicates whether a place is ever treated, and $PostIntro_t$ is a binary variable that indicates the post-initiative period. Their result, $HasISI_i \times PostIntro_t$, identifies the treatment effect β. Place fixed effects γ_i control for local differences, while year fixed effects δ_t capture economic changes in year i that can impact the output, and ε_{it} is the error term.

3.1 Issues

The main area of concern for the identification is the impact of other economic variables that can affect GDP. To account for this, fixed effects are used to account for the impact of those variables. However, they may still stand to cause an indirect impact when regressed on the impact of the ISIs.

References

Doloreux, D., & Frigon, A. (2021). The innovation superclusters initiative in Canada: A new policy strategy? Science and Public Policy, 49(1), 148–158.

Glaeser, E., & Gottlieb, J. (2008). The Economics of Place-Making Policies.

Kline, P., & Moretti, E. (2013). People, Places and Public Policy: Some Simple Welfare Economics of Local Economic Development Programs.