

Industrial composition, remote working, and Mobility Changes in Canada and the US during the COVID-19 pandemic: A SHAP value analysis of XGBoost Predictions

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ABSTRACT

This chapter aims to explore the determinants of the reduction in workplace mobility during 2020 in 10 Canadian Provinces and 50 US states through the analysis of 29 variables representing regional industrial composition, remote working potential, government support policies alongside with other main socioeconomic and demographic attributes is used. The main empirical results are obtained through the use of an extreme gradient boosting machine algorithm followed by the analysis of Shapley Additive Explanations (SHAP) values. Spatial dependences are taken into account. Results suggest that regions where mobility was reduced more were those with a higher share of persons in jobs amenable to remote working and persons working in the information and communication and science and technology oriented sectors. Conversely, regions with larger shares of distributive trade, repairs, transport, accommodation, food services, finance and insurance sectors experienced increased workplace mobility.

Key words: Remote working, machine learning, mobility, sectors, employment, Canada, USA.

JEL Classifications: C81, J6, J40, J21, R11.
