

Analysis of Rural Business Performance

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Executive Summary

Statistics Canada released the Rural Canada Business Profiles (RCBP) database for the first time on March 11, 2022. This database contains counts and financial data on small businesses and medium businesses in Canada for 2017, 2018 and 2019, aggregated by industry, geography, location, and some other relevant variables. This capstone project is expected to explore the new database along any dimensions and variables to gain some insights on the rural Canada business performance, then to augment findings by comparing RCBP with other public datasets.

We utilized Pandas and NumPy in Python to preprocess the 36 tables and total 859 variable columns in RCBP database, extracting 37 key variables from revenue, expense, profit/loss and financial ratios aspects. Using Altair in Python and Tableau, we explored and visualized the performance of the key variables in industry, geography, location, Incorporation status, and time dimensions, and delivered an analytical paper. By tableau, we developed the RCBP dashboard to intuitively demonstrate the results. Based on the key variables, we used multilinear regression models and backward selection to detect the relationship between net profit/loss and other key variables and do the cross-analysis between unemployment rate and RCBP database. Lastly, using Dash in Python, we implemented an overview dashboard to visualize the RCBP database and other related datasets.

Based on the analysis, some characteristic findings are concluded:

- Agriculture, forestry, fishing and hunting industry had the greatest amount while the worst profit in rural areas
- Management of companies and enterprises was the most liquid and solvent industry in rural areas
- The distribution of direct and indirect expense in small and medium businesses had the opposite structures
- Alberta, Ontario and Quebec were the top three economically active provinces for small rural businesses
- The Cross-analysis model indicates that as the total number of profitable businesses increases, the unemployment rate will decrease and if the debt-to-equity ratio is higher, the unemployment rate will be lower

These findings can be the directions for future work. Some studies on demographic, sociological, and ethnocultural fabric might be connected with these findings and be utilized to obtain more insights.