

Choice Modelling

This report summarizes the findings from implementing a multinomial choice model using Python. The model calculates the probabilities of different alternatives based on given parameters and independent variables.

Assumptions:

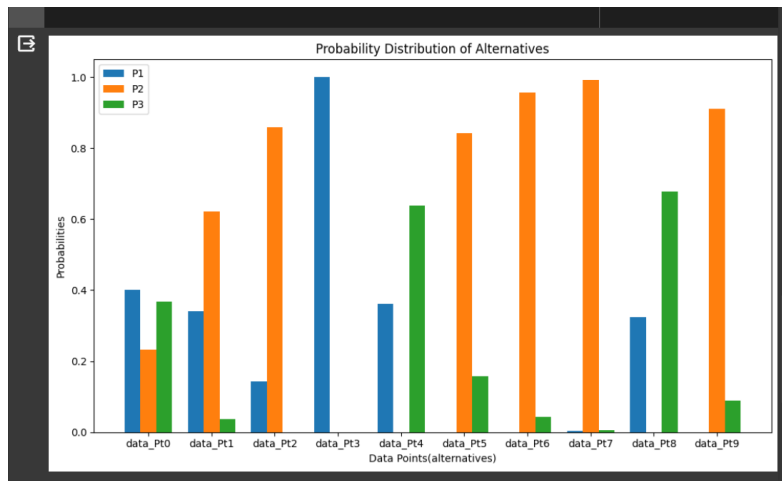
- Each alternative's utility depends linearly on independent variables with coefficients given in the parameters.
- The probabilities are calculated using the multinomial logistic function.
- We assume that given data is accurate and complete.

Findings:

- The probabilities were calculated using the multinomial logistic function, which considers the deterministic utilities of each alternative and normalizes them to obtain probabilities.
- The output probabilities are stored in a text file (output.txt) for further analysis.

Visualizations:

- In output it is observed that the sum of values of probabilities P1, P2 & P3 is equals to 1 for each alternative.
- Below is the attached graph for visualisation of output generated using matplotlib.



Conclusion:

The implementation of the given multinomial choice model provides a framework for calculating probabilities of different alternatives in a choice setting. By considering the deterministic utilities derived from parameters and independent variables, the model offers insights into the likelihood of selecting each alternative. Further analysis and interpretation can be conducted based on the output probabilities to inform decision-making processes.