Choice Modelling Report

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The first step I took was to convert the lists into Numpy arrays for easy handling and fast calculations.

I have written this code with the following assumptions:

- When Sero is filled with 0 and its dimensions are different from AV3, we will use a vector of ones of dim(AV3) to make further computations possible.
- While calculating utilities, I assumed that the first coefficient of beta given is multiplied by vector of ones to make the computation possible. We have also made sure that len(X1)==len(S1) so that we can compute V1 and similar assumption for V2 and V3
- While calculating probabilities, I have assumed that AV * exp(V) means dot product between AV and V

I have also included error handling in both deterministic_utilities and calculate_probabilities functions.

I found out that we can do vector operations much faster on numpy arrays than on lists. For large datasets, the time complexity of vector operations on lists is O(n) while for numpy arrays, it is O(1) or O(logn) for most cases.

I have added appropriate comments and docstrings for both the functions.

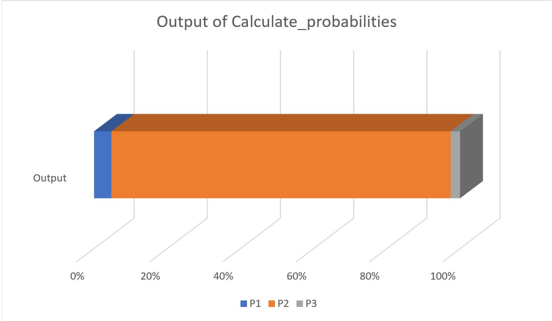

Figure 1: Plot of the probabilities of the three choices