Universiti Teknologi MARA

Ranking of Used Cars Brands and Its Criteria by using Fuzzy TOPSIS and Fuzzy AHP

Nur Amira Shuhada Binti Mohd Basri
2016694766

Report submitted in fulfillment of the requirements for Bachelor of Science (Hons.) Management Mathematics Faculty of Computer and Mathematical Sciences

November 2018

STUDENT'S DECLARATION

I certify that this report and the research to which it refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

…………………………………

NUR AMIRA SHUHADA BT MOHD BASRI

2016694766

NOVEMBER 30, 2018

ABSTRACT

Decision making on selection of used cars is quite difficult since there are many brands in the market and criteria such as price, engine speed, fuel systems, cost of ownership and safety provided by the car need to be considered. In addition, people do not buy a car or change their car frequently. Many multi-criteria decision making could be applied in this kind of problem. In this case study, Fuzzy Technique for Order Preference Similarity to Ideal Solution (TOPSIS) is applied to rank the brands of used cars and Fuzzy Analytic Hierarchy Process (AHP) is used to determine the most preferred criteria of used car. The primary data collected from the experts was analyzed. The findings show that PROTON is in the highest ranking while Toyota is in the lowest ranking. It also shows that fuel system is the most preferable criteria according to the buyers from decision makers' perspectives.

TABLE OF CONTENTS

CHAPTER FOUR: RESULTS AND DISCUSSIONS

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS