

## **EVALUATION OF ONLINE FOOD DELIVERY APPLICATIONS AMONG UiTM PERLIS STUDENTS USING FUZZY ELECTRE**

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**ABSTRACT** - Recent technological advancements have led to the widespread accessibility of online food delivery platforms, driven by the growing demand for fast and convenient meals. However, consumers often face challenges in choosing the best online food delivery application due to the numerous criteria that need to be considered. This study aims to identify the most important criterion for selecting online food delivery applications and rank the most preferable online food delivery applications. The focus is on comparing Foodpanda and Grabfood as alternative to be ranked in this study based on specific criteria such as food prices, delivery costs, available promotions, and user-friendliness of the applications. The finding shows that the most importance criteria is price of the food followed by delivery cost and the least importance in choosing online food delivery applications is user-friendliness of the applications. The study's results indicate that Grabfood is the most preferred online food delivery application, thereby both objectives were achieved. The findings obtained showed that the fuzzy ELECTRE successfully overcomes confusion in choosing the best online food delivery. The study's findings benefit to many stakeholders, and this enables them to focus their efforts on the most popular online food delivery applications.

**Keywords:** Online food delivery applications, Fuzzy ELECTRE, ranking, UiTM Perlis students

### **1. INTRODUCTION**

The rising availability of online food delivery platforms creates a dilemma for students in choosing the most preferred online food delivery applications that meet their satisfaction. Moreover, consumers encounter difficulties in choosing and comparing the best applications as numerous criteria need to be taken into consideration. In addition, online food delivery application advertisements can influence and mislead consumers with discounts and promotional codes. However, the terms and conditions accompanying these offers are often poorly disclosed in the ads, causing confusion and misunderstanding among consumers. This study aims to determine the most important criterion for choosing online food delivery applications and to rank online food delivery applications among UiTM Perlis students.

### **2. METHODOLOGY**

The data was collected by distributing a questionnaire to 219 students from UiTM Perlis. This study focus on ranking two alternatives (Foodpanda and Grabfood) of online delivery applications among UiTM Perlis students based on specific criteria which are price of the food, delivery cost, promotion available, and applications user-friendliness. Data for this study was collected by asking the respondents to rate the importance of criteria for choosing online food delivery application and the performance of alternatives based on criteria by using linguistic variables. This study is analyzed by using the method of Fuzzy Elimination and Choice Expressing Reality (ELECTRE) which consists of 15 steps. The ELECTRE method was introduced in Europe by three French scholars (Benayoun, Roy and Sussmann) in 1966 (Hu et al., 2018). The ranking of online food delivery applications was chosen based on outrank the most of other alternatives with the highest rank in the last step.

### **3. RESULTS AND DISCUSSION**

The finding shows that the most importance criteria is price of the food since it has the highest fuzzy weight of criteria for choosing online food delivery applications followed by delivery cost with the second highest weight. The criterion that has the lowest weight is user-friendliness of the applications. Thus, user-friendliness of the applications is the least important criterion for choosing online food delivery applications. According to Fuzzy ELECTRE results, Grabfood ranking as the most preferred online food delivery applications among UiTM Perlis students over Foodpanda based on specified criteria.

#### **4. NOVELTY OF RESEARCH / PRODUCT**

Fuzzy ELECTRE was used in this study because it provides transparent results that can be easily interpreted by decision-makers (Zardari et al., 2015). Fuzzy ELECTRE allows each criterion can be assessed using its own specific measurement scale or unit (Vahdani et al., 2013). By following the approach of ranking online food delivery applications using Fuzzy ELECTRE, students can focus their attention on the top-ranked platforms instead of getting overwhelmed by a vast number of available applications. Ranking online food delivery applications provides students a clear information the most suitable applications that align with their satisfaction. This information will help students in identifying applications that offer quick and convenient meal options since students often have busy schedule.

#### **5. CONCLUSION**

This study proves that Fuzzy ELECTRE is a good method to rank online food delivery applications since it can handle the subjectivity and ambiguity inherent in human thoughts. For future research, we should widen the scope of this study conduct the study from different geographical locations to analyze the differences in rankings of online food delivery applications. A future study might be comparing the ranking of online food delivery applications between Universiti Teknologi MARA (UiTM) Perlis students and Universiti Malaysia Perlis (UniMAP) students.

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