

Selection of a Notebook for ODL by Using The Fuzzy Analytic Hierarchy Process (FAHP) Method

Nor Asyikin Azhar¹, Noorzila Sharif²

¹*asyikin.azhar00@gmail.com*

²*noorzila@uitm.edu.my*

ABSTRACT

The Coronavirus (COVID-19) pandemic has impacted many individuals and organizations in Malaysia, and this situation has also forced the government to take action to impose a movement control order (MCO). Because of the COVID-19 issues, students need to learn using the online distance learning (ODL) method. This has become a challenge for students who have internet connection problems and do not have enough equipment to learn using ODL, so they must purchase a notebook based on the specification. Thus, the study is conducted to determine the factors that influence students' choices, compare all the factors that influence students' decisions, and formulate the Fuzzy Analytic Hierarchy Process (FAHP) method to choose the appropriate notebook. A logarithmic fuzzy preference programming (LFPP) based technology for FAHP priority derivation was proposed. It formulates the priorities of a fuzzy pairwise comparison matrix as logarithmic nonlinear programming and derives crisp priorities from fuzzy pairwise comparison matrices. Six criteria (price, weight, processor, RAM, memory, and hard disk) and five alternatives which are notebooks brands (Dell, HP, Lenovo, Asus, and Acer), were chosen in the study. Surveys and interviews were conducted and evaluated by decision-makers who are the notebook's users. Results showed memory is considered a prominent criterion in selecting a notebook. The consumers firstly preferred Asus, secondly Lenovo, thirdly Acer, fourthly HP and lastly Dell. Future work in this study may use other alternatives to be ranked by considering other top models.

Keywords: Notebook, Online Distance Learning (ODL), Fuzzy Analytic Hierarchy Process (FAHP)