

Analytic Hierarchy Process (AHP) in Multi Criteria Decision Making: A case of Locating The Operations of Low Cost Carrier In Malaysia

Nizamuddin Zainuddin , Dayang Shalbia Abdul Ghani , Adam Mohd Saifudin
University Utara Malaysia

Abstract. Decision making is an important rule for an individual or a group in an organization. However, decision making can sometime take a long time to be realized. The objective of this paper is to investigate if a different approach that is the Analytic Hierarchy Process (AHP) model is applicable in facilitating decision making particularly for decision makers who were faced with multiple criteria problem. In this paper, a group of decision makers (judgement sampling were used) were tasked to determine the location for the operation of low cost carrier comprising sites of which include the KLIA, Subang Airport and the Low Cost Terminal. The AHP was used as a decision making approach to investigate if it is applicable in addressing the multiple criteria decision making problem. The criteria that are taken into consideration in this study include the benefit and cost of each selected locations in term of economy, social and environment. The AHP allows decision to be constructed as hierarchies and each criterion can be assigned with a preference scale that is determined by the decision makers. The findings indicate that the approach facilitate decision making in a shorter period of time. In general, based on the preference scale assigned by decision makers to the identified criteria the Low Cost Terminal is highly preferred with an economic ratio benefit of 0.447 and social ratio benefit of 0.437. However, in term of environmental benefits with a ratio of 0.508, the KLIA was preferred by the decision makers over Subang Airport and the Low Cost Terminal. Overall the Low Cost Terminal is highly preferred with a ratio of 0.719, 0.488 and 0.454 for each criterion.

Keywords: Low cost carrier, AHP, multiple criteria, decision making, economic, social and environmental benefits