

**UNIVERSITI TEKNOLOGI MARA**

**TECHNICAL REPORT**

**AN INTUITIONISTIC FUZZY ANALYTIC HIERARCHICAL PROCESS  
(IFAHP) APPROACH IN SOLVING THE MARKETING  
PLATFORM SELECTION PROBLEM**

**NUR AISHAH BINTI MOHD ALI - 2019685386**

**FADILAH BINTI JAMALUDIN - 2019614986**

**NUR SABRINA BINTI RIDZWAN - 2019892602**

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## ABSTRACT

A suitable marketing strategy through social media platform is vital for an organisation where they include the business in today's global market to approach a huge number of customers. There are so many choices that a business organisation can implement to increase their business marketing on social media. Nevertheless, it is very challenging for them to make the best decision to select the most suitable social media platform. From this perspective, fuzzy set theory is the familiar theory that can be used to handle uncertainty and ambiguity in making a decision and vagueness of human judgment. Selecting the best social media platform based on criteria requires both qualitative and quantitative analysis. In this study, Intuitionistic Fuzzy Analytic Hierarchical Process (IFAHP) is proposed as an amendable method to determine the weights of criteria and alternatives priorities in a structured pairwise comparison matrices as its capability to be accomplished with a short period of time and reduce the hesitancy of the decision-makers. The objectives of this study are to present IFAHP method as a Multi-Criteria Decision Making (MCDM) tool for the social media marketing platform selection problem as well as to conduct the sensitivity analysis of the IFAHP model in measuring the consistency of the ranking of social media marketing platform in various condition. Three decision-makers were chosen to provide the linguistic judgment information using seven criteria via a set of questionnaires. Both Facebook and Instagram were selected as the most preferred social media marketing platform with the highest weight among all four alternatives, followed by Tik Tok and Twitter. Meanwhile, security, advertisement and analytic were ranked as the most important criteria since the final entropy weights are the highest compared to the other criteria, followed by sale, audience, content and easy to use. IFAHP method provides a better representation of the social media marketing platform selection process, giving it a significant advantage over the AHP method and FAHP method since it takes into account the ambiguity of expert judgments.