



**ASIAN CONFERENCE
ON BUSINESS, ECONOMICS
AND SOCIAL SCIENCES**

E - PROCEEDINGS ACBESS 2021



UNIVERSITI
TEKNOLOGI
MARA

Cawangan Melaka

JOINTLY ORGANIZED BY:



SUNWAY
UNIVERSITY
Business School



EDITORS

**Mohamed Saladin Abdul Rasool
Nor Tasik Misba
Noormala Rabu
Fadzlan Sufian
Abdul Rahim Ridzuan**

Incorporating Expert Judgement into Life Insurance and Life Takaful Companies' Efficiency Measurement Through DEA-AR/FAHP Approach

Nur Azlina Abd Aziz^{1*}, Nor Faradilah Mahad¹, Jamilah Mohd Mahyideen², Eley Suzana Kasim³

¹Faculty of Computer and Mathematical Sciences, Universiti Teknologi MARA Cawangan Negeri Sembilan, Malaysia,

²Faculty of Business and Management Universiti Teknologi MARA Cawangan Negeri Sembilan, Malaysia

³Faculty of Accountancy Universiti Teknologi MARA Cawangan Negeri Sembilan, Malaysia

*Corresponding Author: nurazlinaaziz@uitm.edu.my

Abstract: *Increased competition within the insurance industry has led to the critical need for insurance companies to utilise their resources efficiently. Data Envelopment Analysis (DEA) model has been widely used to measure the relative efficiency of these companies. However, a limitation of the conventional model indicates that certain crucial factors were ignored in the analysis resulting in unrealistic efficiency outcomes. Hence, the present study aims to provide a more robust efficiency measurement by incorporating the subjective value of judgement in the standard DEA through a hybrid model which integrates Constant Return Scale (CRS) model of DEA, Assurance Region Type I (ARI), and Fuzzy Analytic Hierarchy Process (FAHP) method. This proposed DEA-AR/FAHP model was applied on the data gathered from 22 Malaysian life insurance and Takaful companies between 2017 and 2018. Findings revealed that the model provides an improved efficiency assessment through the elimination of zero weights and hence deliver more realistic results.*

Keywords: Efficiency, Data Envelopment Analysis, Fuzzy Analytic Hierarchy Process