

Analysis of fuzzy Decision Making Trial and Evaluation Laboratory on
technology acceptance model

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Abstract

Traditional technology acceptance model (TAM) studies establish and verify the model of causal relationship between variables by factor analysis or structural equation modeling. However, some technology is highly complicated, not all respondents have thorough comprehension. Certain variables are not compatible with assumption of independence, and causal relationship cannot be analyzed accurately if mass samplings are difficult to obtain, resulting in mistaken conclusions. The study establishes TAM through the Decision Making Trial and Evaluation Laboratory (DEMATEL) method, which considers the influences of inconformity between variables. Respondents may completely understand the technology, but may not adequately express it through limitations of mass sampling. Score quantification through traditional investigation asks respondents to make a choice from limited wordings in order to stress maximum attribution without considering the fuzzy thinking of humans, resulting in an imprecise summary. This study adopts the fuzzy DEMATEL method to calculate the causal relationship and level of mutual effect, building on the technology acceptance model by applying the Product Life Cycle Management (PLM) system, providing administrator references to improve promotion of new technology to solve complicated and difficult problems in practice. The example of Product Life Cycle

Management adopted by the Taiwan
optronics manufacturing industry is used to explain the application and
effect of this theory. The research
found that the influence is similar to the TAM2 model based on the fuzzy
DEMATEL method. The major
difference is the subjective standard (X5) did not affect the impression
(X8), while the experience (X6)
directly affects the purpose of use (X1) and the purpose of use (X3) which
also affects useful knowledge
(X2).

Keyword : Technology acceptance model (TAM)