

Fuzzy parametric sample selection model for non participation of married women in the labor force

L. MUHAMAD SAFIHH (*Mathematics Department, Faculty of Science and Technology, University Malaysia Terengganu, Malaysia, safihmd@umt.edu.my*)

YAYA SUDARYA TRIANA (*University Malaysia Terengganu, Malaysia, yst_2000@yahoo.com*)

U. MUDAH (*University Malaysia Terengganu, Malaysia, U_mudah@yahoo.com*)

W. N. HUDA (*University Malaysia Terengganu, Malaysia, nur_alhuda193@yahoo.com.my*)

Heckman (1974) developed a model called Heckman Sample Selection Model. This model has been widely used in various fields of econometrics especially in the labor force. However, this model involved uncertainty especially the parameters as well as the variables. The best approach is to take advantage of the tools provided by the theory of fuzzy sets. Fuzzy sets theory and its properties through the concept of fuzzy number, provide an ideal framework in order to solve the problem of uncertainty data. In this study, we introduced fuzzy concepts as a hybrid with parametric sample selection model especially for non participant called fuzzy parametric sample selection model. A numerical example is illustrated using Monte Carlo Simulation. The efficiency of this new model was carried out to compare with conventional Heckman Sample Selection Model using data set from Malaysian Family and Population Survey 2004 (MFPS 2004). This new hybrid model and finding would be beneficial in decision making, management, NGO's and Government as well as in social economy of a country.

Keywords: Fuzzy parametric Sample Selection Model, Fuzzy number, Uncertainty, Married Women, Malaysian Labor Force