Path Modelling of Antecedent of Diabetes Mellitus on Blood Glucose Measurements

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Abstract. Diabetes Mellitus (DM) is one of the non-communicable diseases and public health problems facing the worldwide population that includes Malaysia. Hitherto, the prevalence of DM becomes worsening with an estimated of 3.4 million Malaysians are diabetes sufferers and expectedly increasing year by year. Thus, this study is of great importance by regressing the medical factors that affect the blood glucose level using structural equation modelling (SEM). The SEM with partial least squares (PLS) estimation was applied to a secondary data of 644 respondents, aged $\geq$ 18 years in Malaysia. The data were collected in 2011 by Ministry of Health Malaysia (MOH). The variables under study are blood glucose level, cholesterol level (CL), systolic blood pressure (SBP), diastolic blood pressure (DBP), waist circumference (WC) and body mass index (BMI). From the modelling analysis, it showed that the cholesterol level (CL), systolic blood pressure (SBP) and waist circumference (WC) showed a positive significant relationship $p < 0.01$ (one-tailed) in influencing the blood sugar level. Whereas, diastolic blood pressure (DBP) is positively significant at $p < 0.05$ (one-tailed) and body mass index (BMI) is significant at $p < 0.10$ (one-tailed) towards blood glucose level. In conclusions, the findings from this study revealed the most salient predictors for blood glucose level which are CL, SBP and WC for diabetes mellitus among adults.

Keywords: diabetes mellitus; blood glucose level; structural equation modelling (SEM)