

Evaluation of I-Kelahiran, A Health Informatics System in Sabah State Health Department – A Structural Equation Modeling

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Abstract

I-Kelahiran (Inovasi-Kelahiran) is a health informatics system that manages birth and immunisation data, developed and implemented in Sabah to address birth discrepancy, delayed reporting of high-risk pregnancy, and immunization coverage. This study aimed to evaluate the conceptual framework and the factors that determine the information system success of I-Kelahiran among the nurses in the Sabah State Health Department. It was a cross-sectional web-based study, conducted in 21 hospitals and 292 health clinics. A total of 1,200 nurses participated, with a mean age of 31.96 years (SD=7.76) and the majority of them were community nurses. About 93.8% of them had good computer literacy. Individual Impact ($p=0.011$) and Organizational Impact ($p=0.0019$) were seen to have significant association towards the nurse's place of work, and computer literacy had a significant association towards organizational impact ($p=0.046$). A structural equation modeling indicated that only perceived ease of use & importance of system are good predictors in outcome evaluation of I-Kelahiran while Individual Impact & Effectiveness are good domains to measure the overall outcome of I-Kelahiran (Chi-Square/df=2.850, Comparative Fit Index [CFI]= 0.991, Tucker-Lewis Index [TLI]= 0.989, Root Mean Square Error of Approximation [RMSEA]= 0.939). Future study is needed to study the complex external factors that lead to this information success model in Malaysia.

Keywords: Health information systems; Hospital information system; Structural Equation Modeling

Introduction

Sabah is one of the states of Malaysia, located on the Northern Borneo. It has a diverse ethnicity with an estimation of 42 ethnic groups with over 200 sub-ethnic groups with their own language. Based on the 2015 census, the state's population is 3,900,000 [1]. According to the national data, the reduction in the maternal mortality rate has been progressing well from 44 maternal deaths per 100,000 live births in 1991 to 29 deaths in 2019 [2].

Nevertheless, it has been a significant challenge over the years to improve maternal health care and achieving 100% immunization coverage for the Sabah State Health Department & Ministry of Health. In June 2012, I-Kelahiran (Inovasi Kelahiran) was implemented as part of the effort by the Sabah State Health Department to intervene in the issues of birth discrepancy, delayed reporting of high-risk pregnancy and immunization coverage within the state. It is a computerized birthing system that creates an online storehouse of information for tracking and reporting, with the purpose of reducing duplication, cost and time, and eliminates delays and confusion associated with the