

Evaluation of the Utilization of Sidoarjo Prevent Mother and Child Death Rate (Si Cantik) Information System

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ABSTRACT

In 2017, there were 30 cases of maternal deaths in Sidoarjo (East Java Health Profile, 2017). Although the number of maternal deaths dropped to 23 cases in 2018, Sidoarjo was included in the top 5 cities with the highest maternal mortality in East Java (East Java Province Maternal Health Report, 2018). Health Department Sidoarjo reported 40% of maternal death caused by hemorrhage and 33% by pre/eclampsia. These factors can be prevented by early detection during antenatal and intrapartum care and timely referral. This research aimed to evaluate the Si Cantik information system through perceived organizational support and behavioral intention to use with TAM theory. It was observational research with a cross-sectional approach. The subjects were 30 midwives in one of the community healthcare in Sidoarjo. The variables examined were perceived organizational support and behavioral intention to use. Data collection was performed by questionnaires and analyzed by Regression. The result that the Perceived of Enjoyment variable directly influenced against BI with a path coefficient of 0.666, Personal Characteristic directly influenced against BI with a path coefficient of 0.076,

POS directly influenced against BI with negative direction and path coefficient of -0.012, PU directly influenced against BI with path coefficient of 0.148, PEOU directly influenced against BI with a path coefficient of 0.179. The conclusion that the Perceived of Enjoyment variable was the most influent factor determined the information system implementation of Sidoarjo Prevent Mother and Child Death Rate (Si Cantik) Information System.

Keywords: Si Cantik, Information System, Child, and Maternal Health)

I. INTRODUCTION

In 2015, The target of the maternal mortality rate (MMR) that has not been achieved. It was 102 per 100,000 live births, and the infant mortality rate (IMR) is 23 per 1,000 live births [1]. It requires immediate effort to reduce MMR and IMR [2]. In 2016, MMR increased, which showed the recording and reporting system improvement in Society activity. Sidoarjo has the third-highest infant mortality rate after Jember Regency. Apart from the high maternal

mortality rate, the infant mortality rate is also high [3]. The trend of maternal mortality in the Sidoarjo Regency has fluctuated and high. Sidoarjo was included in the top 5 cities/regencies in East Java, with the number of maternal deaths has reached 30 cases. In 2018, the Sidoarjo government succeeded in reducing the number of maternal deaths to 23 cases. Sidoarjo among the top 10 urban districts in East Java with the highest number of maternal deaths. In 2017, death was 90% in hospitals, and had passed the referral relay twice was 40% [3].

In December 2017, the health information systems (HIS) in Sidoarjo Regency Health Office had the Sidoarjo information system to Prevent Maternal and Child Mortality (Si Cantik). Those software has monitored maternal and child health. The software regarding data collection for pregnant women and mothers giving birth could be used online for District Public Health Services (Puskesmas) and Hospital on web and androids based. This system's operators were all midwives in Sidoarjo Regency, filling in data for midwives in all Puskesmas in Sidoarjo Regency using smartphones. In hospitals, they could use personal computers or laptops. The system works to start recording when the mother is tested positive for pregnancy until giving birth. Suppose the mother experiences complications in the middle of her pregnancy period. In that case, the midwife who checks and monitors the pregnant woman's development is obliged to make a planned referral immediately. The advantage of using the Beauty information system is that if pregnant women have high risks, they can be immediately identified and given interventions to prevent complications so that their safety is a top priority [4].

On April 21, 2018, the Sidoarjo Regency Health Office decided to disseminate the Si Cantik information system's implementation to all midwives in all Puskesmas throughout Sidoarjo Regency through socialization and training on data entry by system managers. On December

9, 2019, a Decree for Regent Regulation Formulation No. 800/170/438.5.2/2019. Reward and punishment was the impact of this regulation for health workers who optimize Si Cantik.

Based on the Focus Group Discussion (FGD) activity facilitated by Jalin-USAID, there was no evaluation of the Sicantik application's effectiveness. In contrast, the recording and reporting program's implementation through the Si Cantik application effectively reduced mother's and newborn's mortality rate in Sidoarjo. Evaluation of the Si Cantik application and its application has expected to be a new policy related to the use of applications and local indicators of the cause of death of mothers and newborns in Sidoarjo. This evaluation is carried out with the TAM theory. It was a behavior change model that includes perceived ease of use (PEOU), which means the level of ease felt when running information technology, perceived usefulness (PU). Perceived usefulness (PU) was the level of use of information technology felt by users. Attitude toward using (ATU) was the decision or rejection of the acceptance of information technology. Behavioral intention to use (BI) was to use information technology intention. The actual system use (AU) means that the real conditions of using the system [5], [6].

II. METHOD

This study evaluates the use of Si Cantik Application through Perceive Organizational Support, Perceived Usefulness, Perceived Ease of Use on Perceived Enjoyment, and Behavioral Intention to Use with the TAM theory. This study was an observational study with a cross-sectional approach. The research subjects were selected by simple random sampling with a sample size of 75 midwives in Puskesmas scattered throughout Sidoarjo. The data were collected using a questionnaire, and the data were analyzed using SEM PLS analysis.

III. RESULT AND DISCUSSION

Characteristics of the majority of respondents aged 36-46 years. This data shows that the majority of midwives who became respondents were midwives of productive age. This data can be seen in Figure 1.1 below:

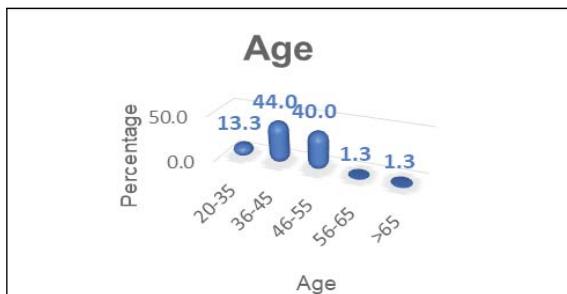


Fig. 1. Characteristics of Respondents

Apart from age, the characters seen in this study is the tenure as a midwife. The majority of respondents had a working period of 21-40 years (51%) and 10-20 years (35%). It can be seen in Figure 1.2 below:

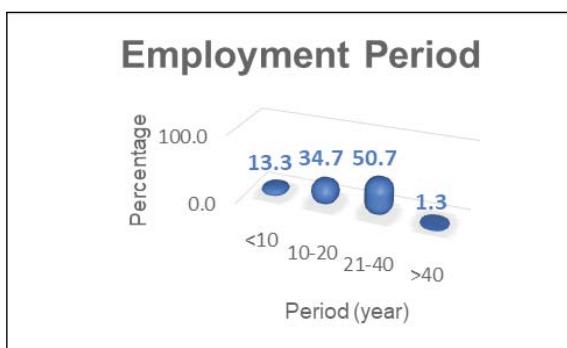


Fig. 2. Employment Period of The Respondents

All variables such as Perceived Organizational Support, Perceived Usefulness, Perceived Ease of Use on Perceived Enjoyment, and Behavioral Intention to Use analyze with SEM PLS. The Analyze result that six variables got significant. The variable that directly impacts Behavioral Intention to Use (BI) was the perceived organizational support (POS) path coefficient of 0.012, the demographic path coefficient of 0.076, PEOU path coefficient of 0.191, PU path coefficient of 0.148, PE

path coefficient of 0.666, and the personal characteristics path coefficient of 0.044. The figure showed below:

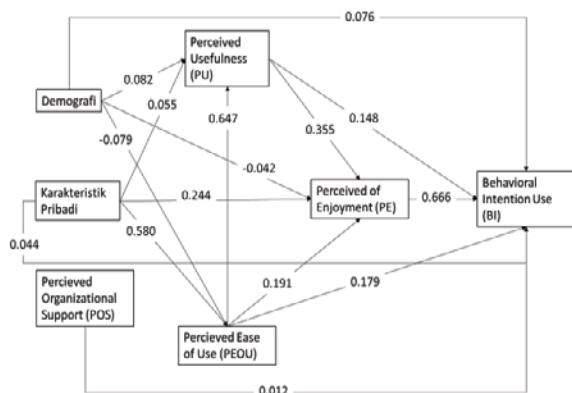


Fig. 3. SEM PLS of Behavioral Intention to Use

Most of the respondents have a long working period (21-30 years) and are in adult age criteria (41-49 years). Sufficient age and working period show that midwives have much experience in monitoring and recording pregnant women. It is the innovation of electronic-based recording technology, and midwives will have more opportunities to try to adapt and get to know Si Cantik. According to Krishan and Mary's research, the increase in age and working period allows a person to experience an increase in the opportunity for emotional maturity to grow, which affects the adaptation process in accepting stressors [7].

The results show that the perception that the Si Cantik application is complicated to use affects the intention to use the application. Research conducted by Ahmadi et al. states that the complexity of using the system is a critical factor that can influence a person's decision about the adoption of innovative technology. Complexity refers to the innovation was perceived as challenging to use and a lack of skills and knowledge [8].

This study showed that the midwife makes technological innovations on the application of the Si Cantik. Those affect the midwives' intention to use the application. Based on

innovation theory, which explains that people tend to react differently when a new idea, practice, the object appears because of their differences leading to the adoption of an innovation. Personal innovativeness toward information technology represents the extent to which someone is willing to try to use new information technology [6].

Perceived organizational support (organizational support) affects the intention to use the Beauty application. Research by Mitchell et al., Explains that organizational support for employees in appreciating contributions and concerns about welfare was rewarded with the hard work of these employees [9]. This statement means that organizational support to generate hard work for midwives in running the Si Cantik information system [10] [11].

Enjoyment, ease of using the application also affects the intention to use the application. This statement adjusted with Kurkinen research result, which defines the enjoyment of using technology, regardless of performance [10]. The perceived enjoyment is the most dominant dependence on usability and ease of use. Another study also states that Wang's perceived enjoyment will be a fundamental goal of using smartphone-based health applications; besides, the recreation function will also be an essential factor in adopting applications [11].

IV. CONCLUSION

The conclusion that the Perceived of Enjoyment variable was the most influent factor determined the information system implementation of Sidoarjo Prevent Mother and Child Death Rate (Si Cantik) Information System.

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Conflict of Interest: No Conflict of Interest

VI. REFERENCES

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