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Determinants of Healthcare Workers' Acceptance of the e-Kohort Application

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A B S T R A C T

The Indonesian Ministry of Health has implemented the Maternal and Child Health Electronic Cohort (e-Kohort) application nationwide since 2020 to improve maternal and child health data management. This study analyzed factors influencing the implementation of the e-Kohort application in community health centers in Jambi City using the Human, Organization, and Technology Fit (HOT-Fit) framework. A quantitative cross-sectional design was employed, involving all 78 healthcare workers usinh the application. Date were collected through a valid and reliable questionnaire and analyzed using WarpPls 8.0. The findings showed that technology and human factors had significant positive effects on application implementation (p=0,001), while information quality, user satisfaction, and organizational environment received the highest ratings. These findings dupport strategies to strengthen succesfull digital health implementation.

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INTRODUCTION

Maternal and neonatal mortality remain major public health challenges, particularly in low- and middle-income countries. According to the World Health Organization (WHO), most maternal and infant deaths are preventable through quality healthcare services supported by accurate, complete, and timely health information (World Health Organization, 2025). In Indonesia, reducing maternal and infant mortality remains a national priority under the Sustainable Development Goals (SDGs). However, Jambi Province continues to report maternal mortality rates above the SDG target, highlighting the need to strengthen maternal and child health services and improve health information systems (Badan Pusat Statistik, 2023).

To improve maternal and child health data management, the Indonesian Ministry of Health introduced the Maternal and Child Health Electronic Cohort (e-Kohort) application in 2020 (USAID Jalin, 2021). The application enables electronic recording, monitoring, and reporting of maternal and child health services, thereby supporting evidence-based planning and decision-making. Nevertheless, its implementation has not been optimal. Preliminary findings in Jambi City revealed incomplete data entry, delayed reporting, and inconsistencies in recorded information, limiting the effectiveness of the system in supporting maternal and child health programs.

Previous studies have shown that the success of health information systems is influenced by technological quality, user characteristics, and organizational support (Hizriansyah et al., 2023; Pradnyani et al., 2024; Sudipa et al., 2023). However, most studies on the e-Kohort have focused on technology acceptance or technical performance, with limited attention to the combined effects of human, organizational, and technological factors. The Human, Organization, and Technology Fit (HOT-Fit) framework provides a comprehensive approach for evaluating these dimensions simultaneously, yet its application to the e-Kohort remains limited, particularly in primary healthcare settings.

This study contributes to the literature by applying the HOT-Fit framework to examine the determinants of healthcare workers' acceptance of the MCH e-Cohort application in community health centers (Puskesmas) in Jambi City. The findings are expected to provide evidence for improving digital health information system implementation and to support decision-making for maternal and child health programs.

LITERATURE REVIEW

Human, Organization, and Technology Fit (HOT-Fit) Framework

The Human, Organization, and Technology Fit (HOT-Fit) framework was developed by Yusof et al. (2008) to evaluate the success of health information systems. The framework extends the Information System Success Model by emphasizing that successful implementation depends on the alignment of three dimensions: technology, human, and organization. The technology dimension includes system quality, information quality, and service quality. The human dimension focuses on users' perceived benefits and satisfaction with the system,

while the organizational dimension consists of organizational structure and organizational environment. These dimensions interact to determine whether a health information system can be successfully accepted and implemented.

The HOT-Fit framework has been widely applied to evaluate health information systems because it provides a comprehensive assessment that considers technical, human, and organizational aspects simultaneously. Compared with models such as the Technology Acceptance Model (TAM), HOT-Fit offers a broader perspective by incorporating organizational readiness and support, which are particularly important in healthcare settings where technology implementation involves multiple stakeholders (Yusof et al., 2008).

Technology Factors and Healthcare Workers' Acceptance

Technology is a fundamental determinant of health information system acceptance. In the HOT-Fit framework, technology comprises system quality, information quality, and service quality. A system that is reliable, easy to use, produces accurate information, and is supported by adequate technical services is more likely to be accepted by healthcare workers. Previous studies have reported that technological quality significantly influences users' acceptance and successful implementation of digital health systems (Hizriansyah et al., 2023; Pradnyani et al., 2024; Sudipa et al., 2023).

H1: Technology factors positively influence healthcare workers' acceptance of the e-Kohort application.

Human Factors and Healthcare Workers' Acceptance

Human factors refer to users' perceptions of the benefits obtained from using the system and their level of satisfaction. When healthcare workers perceive that the e-Kohort application improves their work efficiency, facilitates data recording, and supports service delivery, they are more likely to accept and continue using the application. Higher user satisfaction also encourages sustained system utilization and contributes to successful implementation. Previous studies have consistently shown that perceived benefits and user satisfaction are important determinants of health information system acceptance (Hizriansyah et al., 2023; Yusof et al., 2008)

H2: Human factors positively influence healthcare workers' acceptance of the MCH e-Cohort application.

Organizational Factors and Healthcare Workers' Acceptance

Organizational factors include organizational structure and organizational environment, such as leadership support, policies, training, communication, and resource availability. Successful implementation of digital health applications requires organizational commitment to ensure that healthcare workers receive sufficient guidance and support during system adoption. A supportive organizational environment encourages users to integrate the application into routine healthcare services. Previous research has demonstrated that organizational support is a critical factor influencing the

successful implementation of health information systems (Pradnyani et al., 2024; Yusof et al., 2008).

H3: Organizational factors positively influence healthcare workers' acceptance of the e-Kohort application.

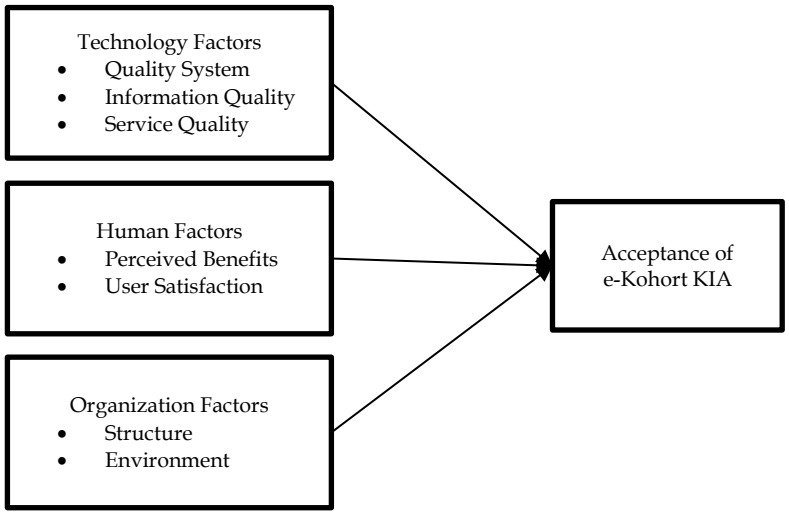

Figure 1. Conceptual Framework

METHODOLOGY

This study employed a quantitative cross-sectional design to examine the determinants of healthcare workers' acceptance of the Maternal and Child Health Electronic Cohort (e-Kohort) application. The study was conducted in all community health centers in Jambi City, Indonesia. The study population consisted of healthcare workers responsible for operating the e-Kohort application. A total sampling technique was applied, resulting in 78 respondents who met the inclusion criteria.

Data were collected using a structured questionnaire based on the Human, Organization, and Technology Fit (HOT-Fit) framework. The technology factor was measured by system quality, information quality, and service quality; the human factor by perceived benefits and user satisfaction; and the organizational factor by organizational structure and organizational environment. Prior to data collection, the questionnaire was tested for validity and reliability.

Data were analyzed using descriptive statistics and Partial Least Squares Structural Equation Modeling (PLS-SEM) with WarpPLS version 8.0. Descriptive analysis was used to describe respondents' characteristics and study variables, while PLS-SEM was applied to examine the relationships between the technology, human, and organizational factors and healthcare workers' acceptance of the e-Kohort application. Statistical significance was determined at $p < 0.05$.

RESULTS AND DISCUSSION

Descriptive Analysis

Descriptive analysis showed that all study variables received positive responses from healthcare workers. Among the technology indicators, information quality had the highest mean score (4.12), followed by service quality (4.05) and system quality (3.97). Within the human dimension, user satisfaction obtained a slightly higher mean score (4.09) than perceived benefits (4.04). For the organizational dimension, organizational environment (4.07) scored marginally higher than organizational structure (4.05). These findings indicate that respondents generally perceived the e-Kohort application positively

Table 1. Mean Scores of Study Variables

Variable	Indicator	Mean
Technology	System Quality	3.97
	Information Quality	4.12
	Service Quality	4.05
Human	Perceived Benefits	4.04
	User Satisfaction	4.09
Organization	Organizational Structure	4.05
	Organizational Environment	4.07

Measurement Model Assessment

The measurement model was evaluated using convergent validity, discriminant validity, and reliability analyses. All indicator loadings exceeded 0.70, while Average Variance Extracted (AVE) values ranged from 0.655 to 0.894, exceeding the recommended threshold of 0.50. Composite Reliability values ranged from 0.919 to 0.981, and Cronbach's alpha values ranged from 0.893 to 0.976, indicating satisfactory reliability

Table 2. Measurement Model Assessment

Variable	AVE	Composite Reliability	Cronbach's Alpha
Technology	0.755	0.973	0.970
Human	0.894	0.981	0.976
Organization	0.655	0.919	0.893
Acceptance of e-Kohort	0.754	0.955	0.944

Structural Model Assessment

The structural model demonstrated good explanatory power, with an R^2 value of 0.740, indicating that technology, human, and organizational factors explained 74% of the variance in healthcare workers' acceptance of the MCH e-Cohort application. The model also showed strong predictive relevance (Q^2 = 0.937). As presented in Table 3, technology factors had the largest effect on

acceptance (f^2 = 0.469), followed by human factors (f^2 = 0.404), whereas organizational factors showed a smaller effect (f^2 = 0.170).

Table 3. Structural Model Evaluation

Indicator	Value	Interpretation
R^2	0.740	Substantial explanatory power
Q^2	0.937	Strong predictive relevance
Technology (f^2)	0.469	Large effect
Human (f^2)	0.404	Large effect
Organization (f^2)	0.170	Medium effect

Hypothesis Testing

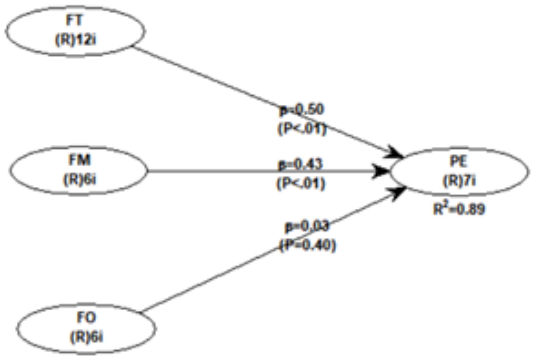

Figure 2. Path Analysis

The analysis revealed that **technology factors** significantly influenced healthcare workers' acceptance of the MCH e-Cohort application (β = 0.500, *p* = 0.001), supporting H1. Likewise**, human factors** had a significant positive effect on acceptance (β = 0.430, *p* = 0.001), supporting H2. However, **organizational factors** did not significantly influence acceptance (β = 0.027, *p* = 0.404); therefore, H3 was not supported.

Table 4. Hypothesis Testing

Hypothesis	β	p-value	Decision
H1 Technology → Acceptance	0.500	0.001	Supported
H2 Human → Acceptance	0.430	0.001	Supported
H3 Organization → Acceptance	0.027	0.404	Not Supported

Technology Factors and Healthcare Workers' Acceptance

This study found that technology factors positively influenced healthcare workers' acceptance of the e-Kohort application. This finding indicates that healthcare workers are more likely to accept the application when it provides reliable system performance, accurate information, and adequate technical support. Among the technology indicators, information quality received the highest evaluation, suggesting that respondents considered the application

capable of producing accurate, complete, and relevant information for maternal and child health services. High-quality information enhances users' confidence in the system and supports timely recording, reporting, and decision-making.

These findings support the HOT-Fit framework, which emphasizes that technology quality is a key determinant of information system success (Yusof et al., 2008). They are also consistent with previous studies reporting that system quality, information quality, and service quality positively influence the implementation of digital health information systems (Kasmianti & Iskandar, 2025; Saputra et al., 2025). However, the findings differ from those of (Putri & Aisyah, 2024), who reported no significant relationship between information quality, service quality, and user satisfaction. Such differences may be explained by variations in organizational settings, user characteristics, and the maturity of information system implementation.

Human Factors and Healthcare Workers' Acceptance

Human factors were also found to positively influence healthcare workers' acceptance of the e-Kohort application. This finding suggests that users are more willing to adopt the application when they perceive clear benefits and are satisfied with its performance. Respondents generally considered the application helpful in improving work efficiency, facilitating maternal and child health data management, and supporting routine service delivery. User satisfaction therefore plays an important role in encouraging continued system use.

The results are consistent with the HOT-Fit framework, which recognizes user perceptions and satisfaction as essential components of successful health information system implementation. Previous studies have similarly demonstrated that perceived benefits and user satisfaction contribute to sustained use of digital health systems (Hardiyanti & Kusumadewi, 2024; Saputra et al., 2025). Nevertheless, some studies have reported lower user satisfaction because of limited system functionality, adaptation challenges, and increased workload (Siswati et al., 2025). The positive findings in the present study may reflect the fact that healthcare workers in Jambi City have routinely used the e-Kohort application, allowing them to become familiar with its functions and recognize its practical benefits.

Organizational Factors and Healthcare Workers' Acceptance

In contrast, organizational factors did not significantly influence healthcare workers' acceptance of the e-Kohort application. This finding suggests that acceptance was driven more by the application's technical performance and perceived usefulness than by organizational support. Although respondents acknowledged support from health center management, leadership commitment, and organizational policies, these factors alone were insufficient to directly increase application acceptance.

This finding differs from several previous studies that identified organizational support as a critical determinant of successful health information system implementation (Putri & Aisyah, 2024; Wujani et al., 2024). One possible explanation is that the e-Kohort application has become a routine component of

maternal and child health services in Jambi City. Consequently, healthcare workers may evaluate the application primarily based on its usability and usefulness rather than organizational conditions. This interpretation is supported by studies indicating that organizational support alone cannot improve system acceptance without adequate technology quality and user readiness (Hasibuan Rayhan; Safitri, Dedek; Anastasya, Raihanis; Pertiwi, Cindy, 2024). Therefore, although organizational factors were not found to directly influence acceptance, continuous training, technical assistance, monitoring, and evaluation remain important to ensure the long-term sustainability of the e-Kohort application.

CONCLUSIONS AND RECOMMENDATIONS

This study examined the determinants of healthcare workers' acceptance of the Maternal and Child Health Electronic Cohort (e-Kohort) application using the Human, Organization, and Technology Fit (HOT-Fit) framework. The findings indicate that technology and human factors significantly influence healthcare workers' acceptance of the application, whereas organizational factors do not have a significant direct effect. These results suggest that improving system quality, information quality, service quality, perceived benefits, and user satisfaction is essential to strengthen the acceptance and successful implementation of the e-Kohort application.

Based on these findings, health authorities should prioritize continuous system improvement, technical support, and user-centered training to enhance healthcare workers' experience with the application. Although organizational factors were not found to have a direct influence, management commitment, monitoring, and regular evaluation remain important to ensure the sustainability of digital health information systems.

FURTHER STUDY

This study has several limitations. First, the study was conducted only in community health centers in Jambi City, which may limit the generalizability of the findings to other regions. Second, the study employed a cross-sectional design, preventing the assessment of changes in healthcare workers' acceptance over time. Future studies are recommended to include larger and more diverse samples from different provinces and to adopt longitudinal or mixed-methods approaches to provide a more comprehensive understanding of factors influencing the implementation and long-term sustainability of the e-Kohort application.

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