

CHAPTER 1: INTRODUCTION

1.1 Research Background

Maternal health is still an important part of public health in Indonesia, especially in rural areas where getting medical care might be hard. The goal of Sustainable Development Goal (SDG) 3.1 is to lower the maternal mortality ratio (MMR) to less than 70 deaths per 100,000 live births. Indonesia's MMR is still very high, nevertheless, which shows that there are still big public health problems. The WHO and World Bank say that in 2021, Indonesia's MMR was 300 deaths per 100,000 live births, which is much higher than the SDG goal (WHO, 2023). There has been some progress over the years, but the trend is still not constant. For example, there was a dramatic surge in maternal deaths between 2007 and 2012, as seen in Figure below.

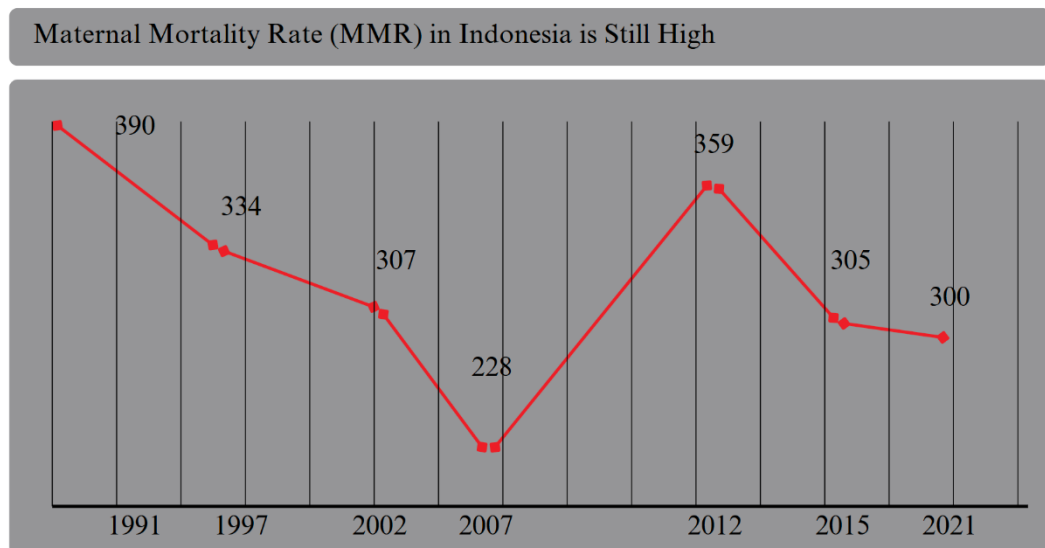


Figure 1 Maternal Mortality Rate (MMR) in Indonesia

Source: (Kementrian Kesehatan/Litbang MI)

Figure 1 shows how the Maternal Mortality Rate (MMR) in Indonesia has changed from 1991 to 2021. It shows that it is still hard to make big cuts in the number of maternal deaths. The numbers demonstrate that the number of deaths per 100,000 live births has changed over time. It started at 390 in 1991 and then steadily dropped to 334 in 1997 and 307 in 2002. The lowest rate on record came in 2007,

when it hit 228. This was a good sign at the time. But the trend changed quickly, rising to 359 in 2012. This showed that maternal health services and access to care were not working as well as they should have been. After that, things got a little better. The rate went down to 305 in 2015 and then to 300 in 2021. Even if things have gotten better recently, the MMR in Indonesia is still much higher than the Sustainable Development Goal (SDG) 3.1 objective of less than 70 fatalities per 100,000 live births. This highlights the ongoing challenge in improving maternal health, particularly in rural areas, especially in rural areas. Some of the reasons are that there aren't enough experienced delivery attendants, the health infrastructure isn't good enough, and mothers don't know enough about their health. This number shows how important it is to use technology to help pregnant women in underserved areas get better health education, emergency support, and also prenatal care (WHO, 2023; Fitriyani & Fauzi, 2020).

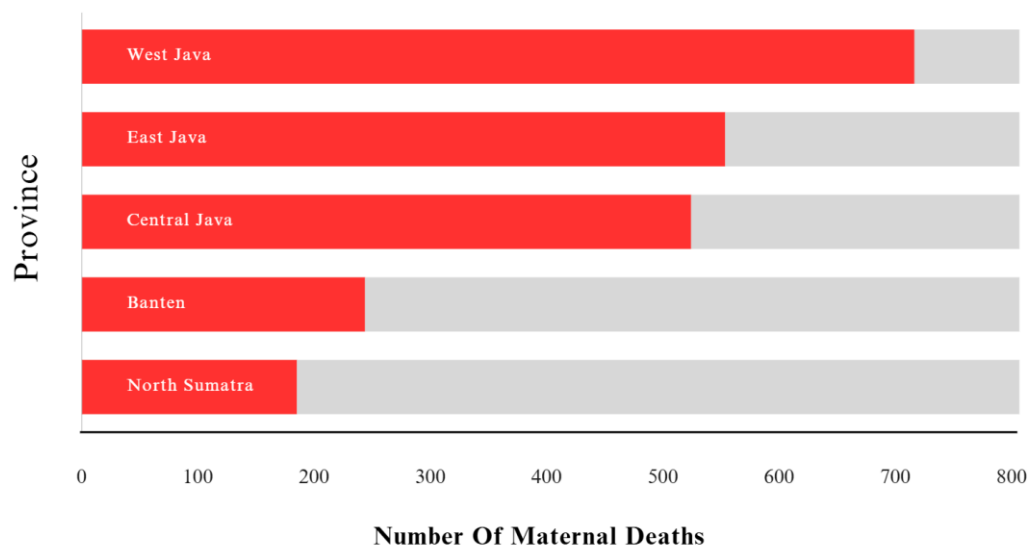


Figure 2 Number Of Maternal Deaths Base On Province In 2020

Source: (ICERM, 2023)

There are still differences in maternal health outcomes between provinces. Figure II.2 shows that West Java, East Java, and Central Java always have the most maternal deaths. These areas also have large rural populations with different levels of infrastructure, computer literacy, and access to healthcare. Socio-economic, cultural, and logistical challenges make these differences worse, making it hard for

pregnant women in rural areas to get good health care on time (Nugroho & Widodo, 2023; Suharto & Mulyani, 2022). Maternal health apps (mHealth apps) have been developed as a new way to fill these gaps. They offer digital platforms for prenatal education, health reminders, and emergency consultations.

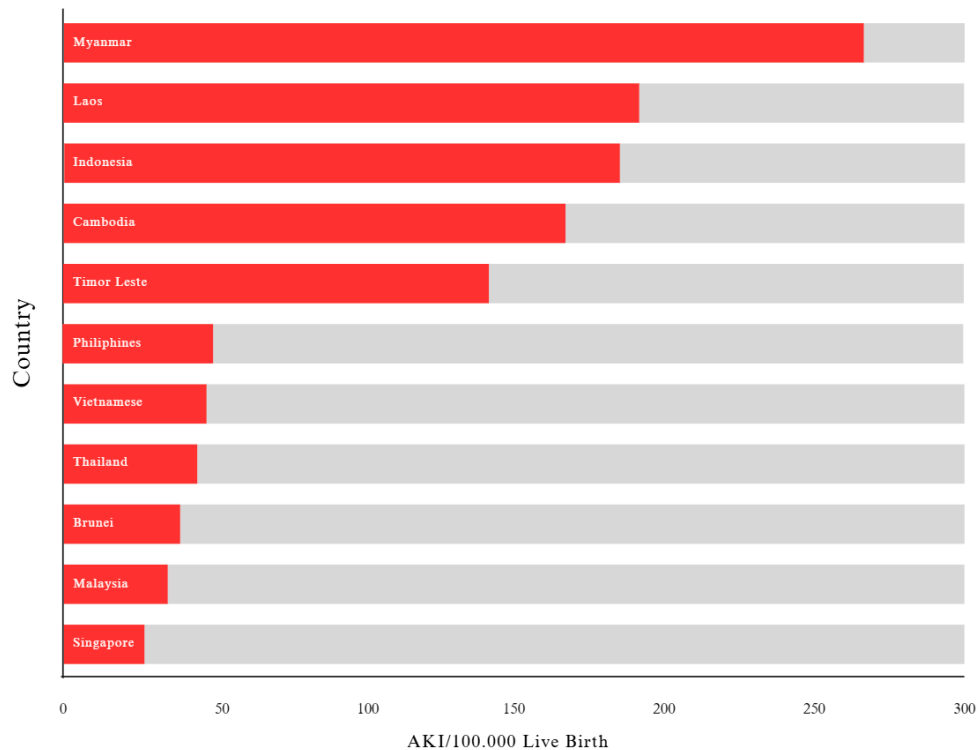


Figure 3 Comparative Maternal Mortality Rate in Southeast Asia

Source: (ICERM, 2023)

Figure 3 shows that Indonesia has the second highest MMR in Southeast Asia, behind only Myanmar and Laos. Indonesia needs scalable solutions like mobile health technology more than its neighbors Malaysia, Brunei, and Singapore, which have far lower MMR. But several things, including people, technology, and services, make it hard for these technologies to be widely used, especially in rural areas (Handayani et al., 2022; Kristianto & Kusuma, 2024). To make maternal health apps as useful as possible, it's important to understand how people use them.

The World Health Organization (WHO) and the World Bank say that Indonesia's maternal death rate has changed from 2018 to 2023. Some things have gotten better, but the rates are still higher than the Sustainable Development Goal

(SDG) 3.1 goal of fewer than 70 maternal deaths for every 100,000 live births. This difference that has lasted a long time shows how important it is to have focused therapies, especially in remote areas where getting good maternity care is hard. People in rural places can access the health care they need more easily with the use of information technology (IT), especially mobile health (mHealth) apps. Recent studies demonstrate that maternal health apps make it easier for women in rural areas to seek health care, learn more about their health, and get health care in a wiser way. (Fitriyani & Fauzi, 2020; Handayani, Meigasari, & Gunawan, 2022; Suharto & Mulyani, 2022). Health technology apps could be incredibly useful, but they aren't very popular in rural areas currently. These apps aren't as useful or acceptable because of a lack of knowledge, low digital literacy, perceived quality, trust issues, and social and cultural factors. Because there are so many complicated things that affect how people utilize technology, it's important to have a broad theoretical framework. System quality, information quality, service quality, use/intention to use, user satisfaction, and net benefits are the six interconnected dimensions that make up the IS Success Model, which was created by DeLone and McLean (1992, 2003). These factors offer a comprehensive perspective on how users assess and embrace information systems across a range of industries, including healthcare.

Researchers have tested the DeLone and McLean Information Systems (IS) Success Model (1992, 2003) in a number of fields, including health informatics, to provide a complete picture of how technology is being used. The IS Success Model and contextual insights combined provide us all we need to know about adoption, like how good the system is, how good the information is, and how pleased the users are. This gives us an idea of how likely users are to stay using maternal health apps and what they plan to do with them. (Riady, Susanto, & Kurniawan, 2025; Widodo & Rahmat, 2025). Because of this, it is important to look at everything that affects the use of maternal health apps in rural Indonesia with an integrated approach based on the IS Success Model. The Information System Success Model (ISSM) by DeLone and McLean (2003) was used to choose the variables for this study. The ISSM is a well-known way to measure how well information systems work and how successful they are in a number of fields, including healthcare. We chose the six

main dimensions—System Quality, Information Quality, Service Quality, Use/Intention to Use, User Satisfaction, and Net Benefits—because they cover all the technical and user-centered aspects of system adoption and impact. These factors are important for understanding how the quality of digital platforms and their content affects user behavior, contentment, and perceived benefit in rural areas when it comes to maternal health apps.

System Quality shows how reliable and easy to use the software is. Information Quality looks at how relevant, timely, and correct the content is. Service Quality looks at how well people are helped, which is especially essential in places that don't get enough help. Use/Intention to Use shows how likely people are to use the app and how willing they are to do so. User Satisfaction shows how people feel about using the system and how well it works, while Net Benefits show how people think it has helped them make better decisions, learn more about health, and have better overall maternal outcomes. Together, these factors make up a strong framework for looking at how well mHealth programs operate and how long they will last in rural Indonesia.

Maternal healthcare services in rural Indonesia have a lot of problems since the infrastructure isn't good enough, there isn't enough access to digital services, and the quality of care isn't good enough. These constraints have a direct effect on maternal mortality rates (MMR), which are still high in rural areas compared to metropolitan areas. Limited infrastructure, like lengthy distances to healthcare facilities and bad transportation, sometimes makes it hard to provide emergency obstetric care quickly. This is a major cause of unnecessary maternal fatalities. Also, the fact that pregnant women can't get to digital information and don't know much about health makes it harder for them to get timely, accurate, and useful information about prenatal care, warning signs, and nutrition, which raises the risk of difficulties.

Also, poor service quality, like health systems that don't respond, lack of sympathetic assistance, and broken continuity of care, makes people less likely to consistently use formal healthcare providers. These systemic inadequacies all add

up to the high MMR, which was 300 fatalities per 100,000 live births in 2021—far higher than the SDG goal of 70.

In this case, the use of the Information Systems Success Model (ISSM) is suitable, although it is not meant to be a straight answer to the problem of maternal mortality. ISSM is not a tool for evaluating digital maternal health apps; instead, it is a way to look at how well they work in terms of system performance, service quality, user satisfaction, and perceived benefits. The model doesn't directly talk about deficiencies in infrastructure or clinical services, but it does give organized ideas on how digital technologies might make up for these gaps by improving how information is shared, how engaged users are, and how supported they feel. So, ISSM doesn't fix all of the problems with maternal health, but it does assist figure out how to make the most of one of the most scalable and immediate solutions: mHealth apps. DeLone and McLean's Information Systems Success Model (ISSM) as the main theoretical framework for this study instead of more common technology adoption models like TAM or UTAUT. ISSM takes a more complete, multidimensional approach by looking at not just user intention and happiness, but also system performance, service quality, and the net advantages that come from using the system. This is different from TAM and UTAUT, which mainly look at behavioral intention and technological adoption. This makes ISSM a better way to figure out how well information systems work in complicated, service-oriented settings like maternity healthcare.

In rural Indonesia, where users have to deal with not just behavioral problems but also technical, informational, and infrastructural issues, ISSM allows for a wider and more contextually relevant evaluation. For instance, rural users may feel satisfied not only because they plan to use the system, but also because they get timely information, the system is reliable, they feel emotionally safe, and they make better decisions. All of these things are measured by ISSM dimensions. ISSM also lets you combine subjective user views with objective system quality measures, which gives you a fuller picture than models that solely look at acceptance.

The goal of this study is to find out how each ISSM dimension—System Quality, Information Quality, Service Quality, Intention to Use, User Satisfaction, and Net Benefits—affects the overall adoption and perceived impact of maternal health applications. The goal is not only to measure acceptance, but to assess whether these digital tools genuinely contribute to improved maternal outcomes in underserved rural communities.

1.2 Research Questions

The creation of research questions is the first step in systematically testing and validating the suggested model in the context of maternal health applications. These questions are based on the main parts of the IS Success Model and how they affect how people conduct in rural Indonesian communities. The study's goals are to find answers to the following:

1. Based on the IS Success Model, what are the most important characteristics that will help rural Indonesian people use maternal health apps?
2. What effect do system quality, information quality, and service quality have on users' happiness and willingness to utilize maternal health apps?
3. What do rural users think are the net benefits of utilizing maternal health apps?
4. How does user satisfaction affect the link between system features (SQ, IQ, SVQ) and actual use?
5. How much do demographic and contextual factors (such education, access, and digital literacy) change these relationships?

These questions are meant to find the many different ways that technology quality, user perception, and usage intention are related. This will help build a more complete picture of the behavioral and technological factors that make it easier for people in poor rural areas to accept new technologies.

1.3 Research Objectives

The main goal is to look into how the IS Success Model elements work together to affect the use of maternal health apps in rural Indonesian communities. Also with specific Goals:

1. To examine the effect of system, information, and service quality on user satisfaction.
2. To analyze the relationship between user satisfaction and actual usage of maternal health applications.
3. To explore the perceived benefits and limitations of maternal health applications in rural communities.

1.4 Significance of the Study

Theoretical Importance by applying the IS Success Model to rural maternal health, which is an area of Indonesia that hasn't been studied much, this study helps to improve the model. It also helps create frameworks for adopting health-related technology in places with few resources. Practical Significance are the results can help policymakers create digital health programs that are culturally appropriate and can be used in many parts of the world. This research gives developers ideas for system features that make it easier to use and more interesting for those who live in using thhe

1.5 Scope of the Study

The study uses a structured scope based on theoretical, geographical, and methodological factors to set a clear limit and emphasis for the investigation. Listed below they consist of:

1. Population Focus, the study only looks at moms of reproductive age who live in rural parts of Indonesia. This is because maternal mortality is high and there is a demand for digital health solutions.
2. The study only looks at mobile-based maternal health apps and not other digital health tools like wearable technology or clinical decision systems.

3. The Information System Success Model is the only framework used in this study. It has six main parts: System Quality (SQ), Information Quality (IQ), Service Quality (SVQ), Use/Intention to Use, User Satisfaction, and Net Benefits.
4. Exclusions, The study does not include urban respondents, medical professionals, or non-mobile platforms on purpose so that the analysis can be more focused on rural maternal health.
5. Research Design, The study uses a quantitative, cross-sectional method with purposeful sampling and validated questionnaires.

These limits assist focus the analysis and make sure that the research stays relevant to the situation, based on theory, and useful for putting into practice in rural Indonesia for digital maternal health.

1.6 Root Cause Analysis

Understanding rural Indonesian maternal health challenges is necessary to support digital treatments. The government is trying to prevent maternal fatalities, but rural areas have systemic and behavioral challenges that make maternity care challenging. Root cause analysis shows infrastructure and knowledge shortages cause these challenges. Infrastructure issues include limited transportation, healthcare facilities, and inexperienced medical staff persist. Since remote pregnant women must commute far to clinics, many miss or are late for prenatal examinations. Lack of reliable, timely, and simple health information lowers maternal health awareness. Low digital literacy makes mHealth apps that fill these gaps harder to utilize. Apps without local content or user-friendly features are less effective in rural areas. People choose informal support networks over hospitals due of social and cultural conventions. These primary factors show digital solutions aren't enough. Rural women have specific infrastructure, information, and culture needs for maternal health apps. This study examines how system, information, and service quality affects how people utilize, are satisfied, and perceive profit from it using the Information System Success Model (ISSM).

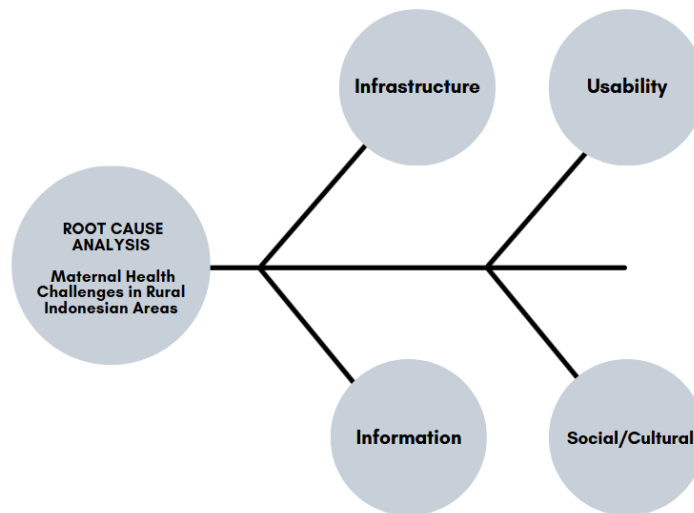


Figure 4 Root Cause Diagram

The figure above shows a Fishbone figure or Root Cause Analysis, which finds the main reasons why women in rural Indonesia have health problems. This visual model breaks down the components that contribute into four main groups: Infrastructure, Information, Usability, and Social/Cultural. It shows that the problem is complex and has many causes, including medical systems, technology obstacles, behavioral hurdles, and environmental barriers. To make maternal health apps more popular and useful, it's important to understand these groups so that you can create tailored, effective interventions.

1.7 Systematic of Writing

This thesis is set out in a way that gives a full picture of the research process, from finding an issue to making conclusions and suggestions. The chapters are set out like this:

CHAPTER I

INTRODUCTION

This chapter presents the study's history, research questions, aims, significance, and scope. This establishes the basis for comprehending the context and objective of examining maternal health application uptake in rural Indonesia via the IS Success Model framework.

CHAPTER II

LITERATURE REVIEW

This chapter talks about the theoretical background that is important to the study. It covers things like mobile health (mHealth), maternal health problems in Indonesia, problems with healthcare in rural areas, and the Information System Success Model (ISSM). It also talks about past studies, gaps in research, and how the conceptual framework was constructed.

CHAPTER III

RESEARCH METHODOLOGY

This chapter delineates the research design, encompassing the creation of the conceptual model, identification of variables, development of hypotheses, construction of the questionnaire, sampling methodologies, and analytical instruments employed, including SmartPLS and RStudio.

CHAPTER IV

DATA COLLECTION STAGES

This chapter talks about how to gather data, starting with sending out the questionnaire, screening the respondents, validating the indicators, and improving the research tools based on the ISSM framework.

CHAPTER V

ANALYSIS RESULTS AND DISCUSSION

This chapter shows the results of analyzing the data, which includes testing hypotheses, evaluating outer and inner models, and looking at many groups. The discussion part looks at the results in light of what was expected based on

theory and previous research, and also gives practical advice.

CHAPTER VI

CONCLUSION

AND

RECOMMENDATIONS

This chapter summarizes the key findings of the research, concluding how the IS Success Model dimensions influence the adoption of maternal health applications in rural Indonesia. It also provides recommendations for application developers, healthcare policymakers, and future researchers to improve digital health initiatives.