**Jurnal Informatika dan Rekayasa Perangkat Lunak** ISSN 2656-2855
Vol. 8, No. 1, March 2026, Page. 165-175 e-ISSN 2685-5518

# Longitudinal Evaluation of the InaRISK Disaster Information System using the Public Satisfaction Index

**Findi Ayu Sariasih**
Department of Informatics, Faculty of Engineering and Informatics,
Universitas Bina Sarana Informatika
*Corresponding author: findi.fav@bsi.ac.id

***Abstract***

*This study aims to evaluate public satisfaction with the InaRISK application as a national disaster risk information system developed by the National Disaster Management Agency (BNPB). The research is a continuation of a previous study using the same measurement instrument, enabling a longitudinal comparison of service quality. The study applies the Public Satisfaction Index (Indeks Kepuasan Masyarakat/IKM) method based on the Regulation of the Ministry of Administrative and Bureaucratic Reform Number 14 of 2017, which measures nine service elements. Data were collected through an online questionnaire distributed via Google Forms to 2,448 respondents who participated in the InaRISK application socialization webinar in 2025. The results show that the Public Satisfaction Index in 2025 reached 84.54, categorized as "Good", which indicates an improvement compared to the previous study that obtained a score of 83.46. Among the evaluated service elements, service procedures obtained the highest score and was categorized as "Very Good", while response speed remained in the "Less Good" category. These findings indicate that the overall quality of InaRISK digital services has improved, although improvements in service responsiveness are still necessary to enhance user satisfaction more evenly. This study contributes to the evaluation of digital public services in disaster management systems through a longitudinal measurement approach.*

***Keywords:*** *digital public services, InaRISK application, Public Satisfaction Index, user satisfaction*

## INTRODUCTION

Indonesia is one of the countries with a high level of disaster risk due to its complex geographical and geological conditions. Various natural disasters such as earthquakes, floods, landslides, and volcanic eruptions frequently occur and pose significant threats to communities and infrastructure. To reduce disaster risks and strengthen mitigation efforts, the Indonesian government has implemented various disaster risk reduction strategies, including the development of digital information systems that enable the public to access disaster risk information more easily and efficiently.

To support disaster risk information dissemination, the Indonesian government through the National Disaster Management Agency (Badan Nasional Penanggulangan Bencana/BNPB) developed the InaRISK application. InaRISK is a national disaster risk information system that provides spatial and non-spatial data related to disaster risk across regions in Indonesia. The application can be accessed through web platforms and mobile devices, allowing users to obtain information regarding hazard maps, vulnerability levels, and disaster risk assessments in specific areas. The availability of this information is expected to improve public awareness and preparedness toward potential disasters (BNPB, 2023).

As a digital public service system, the InaRISK application is required not only to provide accurate information but also to deliver high-quality services that meet user expectations. In the context of e-government, user satisfaction is considered an important indicator of the success of digital public services because it reflects system effectiveness, ease of access, clarity of information, and public trust in government services (Heeks, 2006 ; Kenneth C. Laudon & Jane Price Laudon, 2020).

In Indonesia, the government has established the Public Satisfaction Index (Indeks Kepuasan Masyarakat/IKM) as an official instrument to evaluate public service quality through the Regulation of the Ministry of Administrative and Bureaucratic Reform (PermenPANRB) Number 14 of 2017. The IKM framework measures public perceptions of service performance based on nine key elements, namely service requirements, procedures, service time, cost or tariff, service product specifications, implementer competence, implementer behavior, complaint handling, and facilities and infrastructure. This framework serves as a national standard for evaluating public service performance across various government institutions (KemenPANRB, 2017).

The authors previously conducted a study evaluating user satisfaction with the InaRISK application using the IKM framework based on PermenPANRB Number 14 of 2017. The results indicated that the service quality of the InaRISK application was categorized as Good, with an IKM score of 83.46 (Sariasih et al., 2023). However, the study only represented user perceptions at a single period of measurement, and therefore it did not fully capture the dynamics of user satisfaction as the system evolves and the number of users continues to grow.

In information system development, continuous evaluation is essential to assess service performance and identify areas that require improvement. Longitudinal evaluation allows researchers to compare results across different time periods using the same measurement instruments, enabling a more objective analysis of changes in user satisfaction over time (Caruana et al., 2015 ; Menard, 2008).

Therefore, this study serves as a continuation of the previous research by conducting a new evaluation of the InaRISK application using the same IKM framework. The main difference in this study lies in the evaluation period and the characteristics of respondents. The 2025 evaluation involved 2,448 respondents who participated in the InaRISK application socialization webinar and completed an online questionnaire distributed through Google Form.

The novelty of this study lies in the longitudinal evaluation of the InaRISK disaster information system using the Public Satisfaction Index (IKM) framework with a significantly larger number of respondents. This approach enables a comparative analysis of service quality improvements between evaluation periods and identifies specific service elements that still require enhancement.

Based on this background, this research aims to measure the level of public satisfaction with the InaRISK application in 2025 using the Public Satisfaction Index (IKM) method and to compare the results with the previous evaluation in order to identify improvements in service performance as well as aspects that still require further development.

## LITERATURE REVIEW

### 2.1 InaRISK Application

The InaRISK application was developed by the National Disaster Management Agency (Badan Nasional Penanggulangan Bencana/BNPB) as an information system designed to provide data and insights related to disaster risk across Indonesia. The platform can be accessed by the public through both web-based services and mobile devices, enabling users to obtain information regarding potential disaster risks in specific regions. This includes information on types of hazards, levels of vulnerability, and recommended mitigation measures that communities can undertake to reduce potential impacts.

The utilization of the InaRISK application represents one of the government's strategic efforts to enhance disaster literacy and encourage greater public participation in disaster risk reduction initiatives. Through this platform, communities are able to access timely and reliable information about potential hazards in their surrounding environment. The availability of such information is expected to improve public awareness and preparedness, thereby strengthening community resilience in facing possible disaster events.

### 2.2 Previous Studies

Several previous studies have examined public satisfaction with public services and digital information systems using various analytical approaches. Research conducted by Fadlilah et al. (2025) analyzed the level of public satisfaction with government service desk services using the Public Satisfaction Index (Indeks Kepuasan Masyarakat/IKM) method.

The findings indicate that the IKM measurement framework can provide a comprehensive overview of perceived service quality from the public perspective. Furthermore, the results can serve as an important reference for government institutions in evaluating and improving technology-based public service delivery.

Another study by Suarsana et al. (2023) developed a web-based system for measuring the Public Satisfaction Index within a local government environment. The study demonstrated that the digitalization of public satisfaction surveys facilitates a more efficient and systematic process for collecting and processing service evaluation data. The use of information systems also enables government agencies to continuously monitor service performance and improve service quality in a more structured manner.

Similarly, Anjaswari and Irmanda (2021) designed a web-based information system to conduct public satisfaction surveys related to public service delivery. Their study found that the integration of information technology in satisfaction surveys helps government institutions obtain evaluation data more quickly and accurately. As a result, the system supports evidence-based decision-making processes aimed at improving the quality of public services.

Research related to user satisfaction with digital applications has also been conducted by Yulianita et al. (2024), who analyzed user satisfaction and loyalty toward a prototype digital application using a system service evaluation approach. The results revealed that several factors play a crucial role in shaping user satisfaction, including system service quality, ease of use, and system responsiveness.

In the context of disaster information systems, Sariasih et al. (2023) previously conducted a study evaluating user satisfaction with the InaRISK application. The research applied the Public Satisfaction Index (IKM) method based on the Regulation of the Ministry of Administrative and Bureaucratic Reform Number 14 of 2017 to assess the service quality of the InaRISK application developed by the National Disaster Management Agency (BNPB). The results indicated that the level of public satisfaction with the InaRISK service was categorized as Good, with an IKM score of 83.46. However, the study only represented user perceptions at a single point in time and therefore did not provide insights into the development or improvement of InaRISK service quality over time.

Based on these previous studies, it can be observed that most research on user satisfaction with digital public services tends to focus on measurements conducted within a single evaluation period. Therefore, this study was conducted as a continuation of the previous research by applying the same measurement instrument to evaluate user satisfaction with the InaRISK application in a different period. Through this approach, the research is expected to provide a clearer understanding of changes and developments in user satisfaction toward the InaRISK application over time through a longitudinal evaluation perspective.

### 2.3 Public Satisfaction and Public Service Evaluation

Public satisfaction with government services is widely recognized as a key indicator for assessing the quality of public service delivery. It reflects the extent to which services provided by public institutions meet the expectations and needs of citizens as service users (Setyohadi et al., 2023). In the context of public administration, measuring public satisfaction plays an essential role in identifying strengths and weaknesses in service implementation.

Several studies across various public service sectors, including healthcare, administrative services, and local government services, highlight the importance of conducting satisfaction assessments on a regular basis. Periodic evaluation allows institutions to monitor changes in public perceptions over time and to assess whether improvements in service performance have been successfully implemented. Therefore, public satisfaction measurement has become an integral component of public service management and performance evaluation in many government institutions.

### 2.4 Public Satisfaction Index (IKM) Based on the Regulation of the Ministry of Administrative and Bureaucratic Reform No. 14/2017

The Indonesian government has established a standardized framework for evaluating public service quality through the

Regulation of the Ministry of Administrative and Bureaucratic Reform (PermenPANRB) Number 14 of 2017. This regulation introduces the Public Satisfaction Index (Indeks Kepuasan Masyarakat/IKM) as an official instrument for measuring citizen satisfaction with public service units. The regulation provides statistical and methodological guidelines to assess user perceptions of public services based on several key service elements considered important by the community (Siregar & Jaya, 2023).

In practice, the IKM assessment is typically conducted using a Likert-scale questionnaire, where responses are subsequently converted into a standardized index score ranging from 0 to 100. This conversion enables public service providers to classify service quality into several categories, such as poor, moderate, good, and very good. The IKM framework evaluates nine service elements, namely service requirements, procedures, service time, cost or tariff, service product specifications, implementer competence, implementer behavior, complaint handling, and facilities and infrastructure. Collectively, these elements represent the essential aspects of public service delivery from the perspective of service users (Siregar & Jaya, 2023).

Various empirical studies have applied the IKM framework to measure public satisfaction across different government service units, including village offices, integrated licensing services, and other administrative service institutions. The findings from these studies often reveal variations in IKM scores across different service elements and institutions. Such results are typically used as a basis for identifying areas requiring improvement and for formulating recommendations aimed at enhancing the quality of public service delivery (Mustamin et al., 2025).

### 2.5 Implementation of the Public Satisfaction Index in Service Quality Evaluation

The application of the Public Satisfaction Index (IKM) in various public service contexts in Indonesia demonstrates that the instrument serves as an effective quantitative tool for assessing service performance. By using standardized indicators, IKM enables government institutions to evaluate how well their services meet public expectations and to identify aspects that require improvement.

For example, several studies conducted in public health services and investment or statistical service institutions confirm the use of the IKM framework as a primary indicator for evaluating the quality of public services across different sectors (Peringki et al., 2024). The structured evaluation mechanism provided by IKM allows institutions to systematically assess multiple service elements and to monitor service performance more objectively.

Furthermore, research conducted in Banten Province illustrates the dynamic nature of the Public Satisfaction Index across several evaluation periods. The findings indicate that certain service elements, such as implementer competence, tend to achieve higher satisfaction scores compared to other elements, including service time and complaint handling. These elements are often perceived by the public as weaker aspects of service delivery that require further improvement (Kurnia et al., 2025).

### 2.6 Evaluation of Information System-Based Public Services

Public service evaluation is not limited to conventional administrative services but also extends to digital public services implemented through information systems or e-government platforms. In the context of information technology, user satisfaction is frequently associated with factors such as system usability, information quality, system performance, and overall user experience.

The IKM evaluation framework provides an approach that integrates user perceptions with nationally standardized service performance indicators. Through this approach, the evaluation process does not merely focus on the technical performance of the system but also considers how the system is perceived by the public as a government service platform. Consequently, the IKM framework can serve as a bridge between technological evaluation and public service performance assessment (Siregar & Jaya, 2023).

### 2.7 Relevance of IKM in Longitudinal Research

Longitudinal evaluation plays an important role in understanding how public perceptions of service quality evolve over time, particularly in the context of digital government services such as the InaRISK application. By applying a consistent measurement instrument

such as the Public Satisfaction Index (IKM), longitudinal studies enable valid comparisons across different evaluation periods. This approach makes it possible to identify trends in service quality, whether improvements or declines, based on user perceptions.

Research that utilizes the IKM framework in a longitudinal context also helps determine priority areas for service improvement and supports more effective public policy interventions (Kurnia et al., 2025). In the previous study conducted by Sariasih et al. (2023) on the InaRISK application, the IKM score was calculated and categorized according to the guidelines outlined in the Regulation of the Ministry of Administrative and Bureaucratic Reform Number 14 of 2017. The results of that study serve as a baseline evaluation that can be compared with the measurement results obtained in 2025 in order to analyze the development and effectiveness of InaRISK application services over time.

## METHOD

### 3.1 Research Type

This study adopts a quantitative descriptive comparative approach with a longitudinal perspective to examine changes in the Public Satisfaction Index (Indeks Kepuasan Masyarakat/IKM) related to InaRISK services between the previous evaluation period and the 2025 assessment. The evaluation of the IKM was conducted in accordance with the guidelines established in the Regulation of the Ministry of Administrative and Bureaucratic Reform (PermenPANRB) Number 14 of 2017, which serves as the official national standard for measuring the quality and public satisfaction of government services (KemenPANRB, 2017; Sariasih et al., 2023).

Through this approach, the study aims to identify changes in user satisfaction over time by comparing results obtained using the same measurement framework. The longitudinal perspective allows the analysis to capture trends in service performance and to determine whether improvements have occurred in the quality of InaRISK services from the perspective of users.

### 3.2 Population and Sample

The population in this study consists of all users of the InaRISK Web and InaRISK Personal services. The research sample for the 2025 evaluation includes 2,448 respondents who completed the survey questionnaire through an online form distributed via Google Forms.

The sampling technique applied in this study is non-probability sampling, specifically purposive sampling. Respondents were selected based on predefined criteria, namely individuals who participated in the InaRISK application socialization webinar and had prior experience accessing or using the InaRISK services. This sampling method was chosen because it aligns with the objective of the study, which focuses on evaluating the satisfaction level of users who have interacted with the InaRISK system.

### 3.3 Research Instrument

The research instrument used in this study is a structured questionnaire developed in accordance with the guidelines outlined in PermenPANRB Number 14 of 2017 for measuring the Public Satisfaction Index (IKM). The questionnaire measures user perceptions of service quality based on nine elements of public service that represent key aspects of service delivery.

These service elements have been widely adopted in previous public service evaluation studies and were also applied in earlier research on the InaRISK application. The use of the same measurement indicators enables a longitudinal analysis, allowing comparisons between the current evaluation and previous results (Sariasih et al., 2023).

The nine elements of the Public Satisfaction Index (IKM) evaluated in this study are as follows (Sariasih et al., 2023):

1. Requirements
2. Procedures
3. Service Time
4. Costs/Tariffs
5. Response Speed
6. Convenience
7. Content Quality
8. Product Suitability
9. Facilities and Infrastructure

### 3.4 Measurement of the Public Satisfaction Index (IKM)

The measurement of the Public Satisfaction Index (Indeks Kepuasan Masyarakat/IKM) in this study follows the guidelines outlined in the Regulation of the Ministry of Administrative and Bureaucratic

Reform Number 14 of 2017. The calculation procedure consists of several stages (Sariasih et al., 2023):

a) Rating Scale
Respondents were asked to evaluate each questionnaire item using a four-point Likert scale representing their level of satisfaction with the InaRISK services. The scale is defined as follows:
1 = Very Dissatisfied
2 = Dissatisfied
3 = Satisfied
4 = Very Satisfied
This scale is commonly applied in public service satisfaction surveys to capture users' perceptions of service performance.

b) Calculation of the Average Score for Each Service Element
For each IKM element, the average score was calculated based on the responses provided by the respondents. This average value represents the overall perception of users regarding the quality of each service component evaluated in the survey.

c) Conversion to a 0–100 Scale
To standardize the interpretation of satisfaction scores, the average values obtained from the Likert scale were converted into a 0–100 index scale using the following formula:

$$IKM\ Value = \frac{Average\ Respondent\ Score}{4} x\ 100$$

This conversion method is commonly applied in satisfaction surveys using a 1–4 Likert scale in order to standardize the score range to 100, thereby facilitating the classification of service quality categories (Survei Kepuasan Masyarakat (SKM) Direktorat Sistem Manajemen Investasi Triwulan II Tahun 2025, 2025).

d) Service Quality Classification
Based on the national guideline, the resulting IKM score is categorized into four service quality levels as follows: (KemenPANRB, 2017; Sariasih dkk., 2023
- A (Very Good): 88,31 - 100,00
- B (Good): 76,61 - 88,30
- C (Less Good): 65,00 - 76,60
- D (Poor): 25,00 - 64,99

### 3.5 Data Analysis Technique

Data analysis in this study was conducted through the following stages:

#### 3.5.1 Descriptive Analysis

Descriptive analysis was used to present the distribution of respondents based on demographic characteristics such as age, gender, and occupation. In addition, the average IKM score and the mean values of each service element were calculated for both the 2023 evaluation (previous study) and the 2025 evaluation period.

#### 3.5.2 Longitudinal Comparison

A comparative analysis between evaluation periods was conducted to identify changes in service performance over time. The comparison focuses on differences in the IKM values for each service element as well as the overall index score. Changes in service quality were interpreted quantitatively by examining the difference in scores between the two evaluation periods.

Previous studies have also applied the IKM framework using similar quantitative approaches to evaluate public service quality across various government institutions. For example, research on community empowerment and social welfare services in the Langkai Village Office demonstrated that the IKM method provides a valid and practical approach for assessing the quality of public service delivery (Siregar & Jaya, 2023).

### 3.6 Validity and Reliability

Although the research instrument used in this study is consistent with the instrument applied in the previous InaRISK evaluation, validity and reliability tests were conducted to ensure the consistency of the measurement when applied to a larger sample size of 2,448 respondents.

Two statistical tests were employed to evaluate the quality of the questionnaire instrument:
- Construct Validity Test, conducted using item-total correlation analysis to determine whether each questionnaire item accurately represents the intended measurement construct.
- Reliability Test, performed using Cronbach's Alpha, with a threshold value of ≥ 0.70, to

assess the internal consistency of the instrument (Sariasih & Dewi, 2018).

These testing procedures are commonly used in survey-based research evaluating public service performance to ensure the reliability and validity of the collected data (Siregar & Jaya, 2023).

## 4. RESULTS AND DISCUSSION

### 4.1 Description of Research Respondents

This study involved 2,448 respondents who participated in a socialization webinar on the InaRISK application organized by the National Disaster Management Agency (BNPB). All participants completed the public satisfaction survey online through a Google Forms questionnaire after attending the webinar session. The respondent profile indicates that the collected data represent users who had received an initial explanation regarding the features, functions, and utilization of the InaRISK application.

Collecting data from participants who attended the socialization program is considered relevant in the context of evaluating digital public services, as respondents have already been exposed to the system being assessed. This approach helps ensure that the feedback obtained is based on users' understanding of the application and its services.

Furthermore, the use of respondents who have direct experience with a digital public service platform is commonly applied in studies evaluating public satisfaction with technology-based government services (Sururi, 2019).

The demographic characteristics of the respondents are presented descriptively in Table 1, providing an overview of InaRISK service users and serving as a basis for interpreting the results of the public satisfaction analysis.

Table 1. Respondent Demographic Characteristics

| Gender | Age Group | Occupation | COUNT of Occupation |
|---|---|---|---|
| Male | 17-25 Years | ASN | 62 |
| | | Others | 21 |
| | | Students | 26 |
| | | Employees | 5 |
| | | Entrepreneurs | 1 |
| | Count of 17-25 Years | | 115 |
| | 26-45 Years | ASN | 793 |
| | | Others | 190 |
| | | Students | 13 |
| | | Employees | 54 |
| | | TNI | 1 |
| | | Entrepreneurs | 8 |
| | Count of 26-45 Years | | 1059 |
| | 46-65 Years | ASN | 260 |
| | | Others | 49 |
| | | Polri | 1 |
| | | Employees | 31 |
| | | Entrepreneurs | 10 |
| | Count of 46-65 Years | | 351 |
| | 66-100 Years | Others | 1 |
| | | Employees | 2 |
| | Count of 66-100 Years | | 3 |
| Count of Male | | | 1528 |
| Female | 17-25 Years | ASN | 107 |
| | | Others | 10 |
| | | Students | 23 |
| | | Employees | 1 |
| | Count of 17-25 Years | | 141 |
| | 26-45 Years | ASN | 525 |
| | | Others | 84 |
| | | Students | 2 |
| | | Employees | 13 |
| | | Entrepreneurs | 1 |
| | Count of 26-45 Years | | 625 |
| | 46-65 Years | ASN | 125 |
| | | Others | 20 |
| | | Employees | 9 |
| | Count of 46-65 Years | | 154 |
| Count of Female | | | 920 |

The survey involved 2,448 respondents, consisting of 1,528 male respondents and 920

female respondents. The majority of respondents were within the 26–45 years age group, representing the productive age group that is actively engaged in professional and institutional activities.

In terms of occupation, most respondents were civil servants (ASN), followed by respondents categorized as others, private sector employees, students, and entrepreneurs. This distribution indicates that the InaRISK application is widely utilized by users working within government institutions, which is consistent with its function as a disaster risk information system used by stakeholders involved in disaster management.

The diversity of respondents' occupational backgrounds also suggests that the application has reached a broader user community beyond government institutions.

### 4.2 Public Satisfaction Index (IKM) Calculation Results

The measurement of public satisfaction in this study follows the framework established in the Regulation of the Ministry of Administrative and Bureaucratic Reform (PermenPANRB) Number 14 of 2017, which defines nine service elements as indicators for evaluating the quality of public services.

Each service element was assessed using a four-point Likert scale, after which the average score was calculated and converted into the Public Satisfaction Index (IKM) value.

The IKM value was calculated using the following formula:

$$IKM\ Values = \frac{3{,}38}{4} x\ 100 = 84{,}5$$

This calculation method has been widely adopted in studies evaluating public service performance in Indonesia and is considered effective in quantitatively representing community satisfaction levels (Sururi, 2019; Siregar & Jaya, 2023).

#### 4.2.1 Service Quality Classification

The analysis of the Public Satisfaction Index (IKM) for InaRISK users was conducted using descriptive statistical analysis, where the average score obtained from the Likert scale was converted into a 0–100 index scale. Based on the national guideline, the service quality categories are defined as follows:

Table 2. Service Quality Classification

| IKM Score Range | Service Quality Category |
|---|---|
| 88,31 - 100,00 | A (Very Good) |
| 76,61 - 88,30 | B (Good) |
| 65,00 - 76,60 | C (Less Good) |
| 25,00 - 64,99 | D (Poor) |

This classification system is widely applied in public satisfaction surveys across Indonesia and is consistent with official government guidelines (KemenPANRB, 2017). Based on the calculation results, the total IKM score for InaRISK services in 2025 is 84.5, which falls within the "Good" service quality category according to the classification defined in PermenPANRB No. 14 of 2017 (Sariasih et al., 2023).

### 4.3 IKM Results for Each Service Element in 2025

Table 3 presents the calculated IKM scores for each individual service element of the InaRISK application in 2025.

Table 3. IKM Results for Each Service Element

| Elements | Average | IKM Score | Category |
|---|---|---|---|
| Requirements | 3,25 | 81,23 | Good |
| Procedures | 3,80 | 95,00 | Very Good |
| Service Time | 3,22 | 80,38 | Good |
| Costs/Tariffs | 3,71 | 92,82 | Very Good |
| Response Speed | 3,05 | 76,17 | Less Good |
| Convenience | 3,23 | 80,66 | Good |
| Content Quality | 3,31 | 82,64 | Good |
| Product Suitability | 3,24 | 80,92 | Good |
| Facilities and Infrastructure | 3,64 | 91,06 | Very Good |

The results indicate that overall user satisfaction with the InaRISK application falls within the Good category. Service elements with the highest scores reflect aspects of the system that are functioning effectively, whereas

elements with lower scores highlight areas that may require further improvement.

These findings are consistent with previous research emphasizing that analyzing IKM scores at the element level is essential for identifying specific weaknesses within public service delivery systems (Setyohadi et al., 2023).

### 4.4 Longitudinal Comparison of IKM Results (Previous Study vs. 2025)

This research represents a continuation of a previous study evaluating user satisfaction with the InaRISK application. Therefore, a longitudinal comparison was conducted to examine differences in the total IKM score between the two evaluation periods.

Table 4. Comparison of IKM Scores

| Research Period | Total IKM Score |
|---|---|
| Previous Study | 83,46 |
| 2025 Evaluation | 84,54 |

The results show that the IKM score in 2025 is higher than the score reported in the previous study, indicating an improvement in the perceived quality of InaRISK services.

A longitudinal evaluation approach such as this is recommended in IKM-based studies because it enables researchers to observe trends and developments in public service performance over time (Sururi, 2019 ; Mozin dkk., 2025).

### 4.5 Discussion

The findings of this study demonstrate that evaluating public satisfaction with the InaRISK application using the Public Satisfaction Index (IKM) approach provides a comprehensive overview of the service quality of disaster-related information systems.

Service elements such as requirements and procedures reflect the clarity of information provided to users and the accessibility of the system. Meanwhile, elements related to facilities and infrastructure are closely associated with the technical aspects of the application, including system stability, interface usability, and overall user experience.

The evaluation of digital public service applications has been widely conducted in the context of e-government implementation in Indonesia. For instance, a public satisfaction survey on the Magelang Smart Service application showed that digital platforms can serve as effective tools for delivering public services, although variations in user satisfaction may still occur across different service dimensions (Lestari et al., 2024).

Similarly, research evaluating the Public Satisfaction Index for the Online Single Submission (OSS) licensing system confirmed that digital public service platforms can be effectively assessed using the IKM framework, providing valuable insights into user perceptions regarding service procedures, accessibility, and overall utility (Wahyudi et al., 2024).

Furthermore, studies examining public perception of other government digital service applications indicate that while such systems generally improve access to public services, differences in satisfaction levels across user groups and service indicators still require detailed evaluation (Widagdhaprasana et al., 2025). Therefore, the results of this study support the argument that the IKM framework can be effectively applied to evaluate government digital services, including disaster management applications such as InaRISK.

From the perspective of Informatics research, these findings provide empirical evidence that satisfaction measurement based on national regulatory frameworks can serve as a valuable foundation for the continuous improvement and development of public information systems.

## CONCLUSION

This study extends previous research that evaluated public satisfaction with the InaRISK application using the Public Satisfaction Index (IKM) framework based on Regulation of the Ministry of Administrative and Bureaucratic Reform (PermenPANRB) No. 14 of 2017. By employing the same measurement instrument, the study enables a longitudinal evaluation of the service quality of the disaster information system developed by the National Disaster Management Agency (BNPB).

The findings indicate that the IKM score in 2025 reached 84.54, which falls within the "Good" service quality category, and represents an improvement compared with the previous study, which reported an IKM score of 83.46. This increase suggests that the overall service quality of the InaRISK application has improved and that the platform has been able to maintain a

relatively high level of user satisfaction over time.

The element-level analysis reveals that service quality is not evenly distributed across all service dimensions. The service procedure element obtained the highest score (95.00) and was classified in the "Very Good" category, indicating that users perceive the application workflow, procedural clarity, and access mechanisms as easy to understand and operate. This result reflects the effectiveness of the system's procedural design as well as the success of socialization efforts aimed at introducing the application to users.

However, the study also found that the service response speed element received a score of 76.17, which falls into the "Less Good" category. This finding suggests that although the InaRISK application has been able to provide disaster-related information adequately, users still perceive limitations in terms of responsiveness, particularly regarding feedback mechanisms, handling of user inquiries, and complaint management.

Overall, the results confirm that InaRISK, as a public disaster information system, has demonstrated good service performance and a positive trend of improvement over time. Nevertheless, the disparity among service elements indicates that service quality enhancement should not only focus on procedural and technical aspects, but also on improving system responsiveness and user interaction mechanisms.

Based on these findings, it is recommended that the National Disaster Management Agency (BNPB) prioritize improvements in service response mechanisms, as this dimension still shows relatively lower performance. Strengthening more responsive and integrated feedback or complaint channels may help address this issue. Although the procedural aspects of the service have already achieved a very high performance level, continuous efforts to enhance the overall user experience remain important, particularly in assisting users when encountering difficulties in using the application.

Finally, the results of this IKM evaluation can serve as a strategic reference for the ongoing development and refinement of the InaRISK system. Future research may expand this study by integrating the Public Satisfaction Index approach with other evaluation methods such as usability analysis, user experience (UX) assessment, or information system evaluation frameworks, in order to provide a more comprehensive understanding of the factors influencing user satisfaction and the utilization of the InaRISK application.

## REFERENCES

Anjaswari, L. E., & Irmanda, H. N. (2021). Sistem Informasi Survei Kepuasan Masyarakat Terhadap Pelayanan Publik di Kecamatan Metro Pusat Berbasis Web. *Informatik : Jurnal Ilmu Komputer*, *17*(2), 132–141. https://ejournal.upnvj.ac.id/informatik/article/view/3468

Caruana, E. J., Roman, M., Hernández-Sánchez, J., & Solli, P. (2015). Longitudinal studies. *Journal of Thoracic Disease*, *7*(11), E537–E540. https://doi.org/10.3978/j.issn.2072-1439.2015.10.63

Fadlilah, N., Kristanto, T., & Alhari, M. I. (2025). Analisis Tingkat Kepuasan Masyarakat terhadap Pelayanan Service Desk Berdasarkan Indeks Kepuasan Masyarakat (IKM) di Dinas Komunikasi dan Informatika Kota Surabaya. *JIPI (Jurnal Ilmiah Penelitian Dan Pembelajaran Informatika)*, *10*(2), 1168–1177. https://doi.org/10.29100/jipi.v10i2.6136

Kenneth C. Laudon, & Jane Price Laudon. (2020). *Management Information Systems: Managing the Digital Firm* (16th, berilustrasi ed.). Pearson. https://books.google.co.id/books/about/Management_Information_Systems.html?hl=id&id=SZSpxAEACAAJ&redir_esc=y

Kurnia, N., Gunawan, G., Subhan, A., Septian, M. R., & Tania, R. (2025). Regional Expenditure and Public Satisfaction: A Study in Banten Province (2021–2024). *Jurnal Manajemen Pelayanan Publik*, *9*(3), 691–709. https://doi.org/10.24198/jmpp.v9i3.63016

Lestari, A., Anastasya, A. P., Iqbal, M., Ramadhan, O. O., Sholikhah, K., & Nugraha, J. T. (2024). Survei Tingkat Kepuasan Masyarakat terhadap Aplikasi Magelang Smart Service sebagai Upaya

Peningkatan Layanan E-Government. *Jurnal Mahasiswa Administrasi Negara (JMAN)*, *08*(01), 1–11.

Mustamin, Nazwin, A. H., M. Wahyullah, & Asriani. (2025). Analisis Indeks Kepuasan Masyarakat (IKM) Terhadap Kualitas Pelayanan Pada PT. PLN (Persero). *Valid: Jurnal Ilmiah*, *22*(2), 173–184. https://doi.org/10.53512/valid.v22i2.525

Peringki, Soleh, A., & Fitriano, Y. (2024). Analisis Indek Kepuasan Masyarakat Terhadap Pelayanan Publik Pada Dinas Penanaman Modal Dan Pelayanan Terpadu Satu Pintu Kabupaten Bengkulu Selatan. *Tractare Jurnal Ekonomi-Manajemen*, *7*(1), 63–72. https://doi.org/10.62820/trt.v7i1

Sariasih, F. A., & Dewi, Y. N. (2018). Pengukuran Tingkat Kepuasan Pengguna Internet Non-Nasabah terhadap Website Bank Negara Indonesia (BNI) dengan Webqual4.0. *Cki On Spot*, *11*(2), 106–118. https://jurnal.stikomcki.ac.id/index.php/cos/article/view/42

Sariasih, F. A., Prayitno, E., Bahri, C., Armelsa, D., & Mutia, F. (2023). Evaluasi Aplikasi Inarisk Menggunakan Indeks Kepuasan Pengguna Berdasarkan Peraturan Menteri Pendayagunaan Aparatur Negara Dan Reformasi Birokrasi Nomor 14 Tahun 2017. *KESATRIA: Jurnal Penerapan Sistem Informasi (Komputer & Manajemen)*, *4*(3), 744–755.

Setyohadi, D. P. S., Chairina, R. R. L., Rachmanita, R. E., Riskiawan, H. Y., Putra, D. E., & Firgiyanto, R. (2023). Analisis Survei Kepuasan Masyarakat terhadap Pelayanan Publik Bidang Sosial di Kabupaten Jember. *AKSIOLOGI : Jurnal Pendidikan Dan Ilmu Sosial*, *3*(2), 25–38. https://doi.org/10.xxxxx/xxxxx

Siregar, H., & Jaya, I. (2023). IKM dalam Pelayanan Publik Bidang Pemberdayaan Masyarakat dan Kesejahteraan Sosial Kantor Kelurahan Langkai. *Jurnal Administrasi Publik (JAP)*, *9*(1), 60–70.

Suarsana, I. K., Putra, I. G. J. E., & Paramitha, A. A. I. I. (2023). Rancang Bangun Sistem Pengukuran Indeks Kepuasan Masyarakat (IKM) Berbasis Web di Pemerintah Kabupaten Badung. *JINTEKS (Jurnal Informatika Teknologi Dan Sains)*, *5*(4), 618–625. https://jurnal.uts.ac.id/JINTEKS/article/view/3385

Sururi, A. (2019). Mengukur Indeks Kepuasan Masyarakat (IKM) terhadap Pelayanan Publik pada Organisasi Sektor Publik Kelurahan. *JURNAL NATAPRAJA: Kajian Ilmu Administrasi Negara*, *7*(1), 105–120. https://doi.org/https://doi.org/10.21831/jnp.v7i1.24769

*Survei Kepuasan Masyarakat (SKM) Direktorat Sistem Manajemen Investasi Triwulan II Tahun 2025*. (2025, October 1). Https://Djpb.Kemenkeu.Go.Id/Direktorat/Smi/Id/Data-Publikasi/Laporan-Hasil-Survey-Layanan/251-Survei-Kepuasan-Masyarakat-Skm-Direktorat-Sistem-Manajemen-Investasi-Tw-Ii-Tahun-2025.Html?Utm_source=chatgpt.Com.

Wahyudi, Y. I., Zainal, N. H., & Afrisal, A. F. (2024). Indeks Kepuasan Masyarakat Terhadap Pelayanan Perizinan Berbasis Aplikasi OSS Di Dinas Penanaman Modal Dan Pelayanan Terpadu Satu Pintu Kabupaten Pinrang. *Publician: Journal of Public Service, Public Policy, and Administrastion*, *3*(1), 44–50. https://doi.org/10.56326/jp.v3i1.4135

Widagdhaprasana, M., Sukarno, A. W., & Suci, P. L. N. (2025). Menuju Pelayanan Digital Berkualitas: Survei Persepsi Masyarakat terhadap Pelayanan Digital Pemerintah Kota Yogyakarta Tahun 2024. *Jurnal ISO: Jurnal Ilmu Sosial, Politik Dan Humaniora*, *5*(1), 15. https://doi.org/10.53697/iso.v5i1.2274

Yulianita, I., Zunaidi, R. A., & Putra, P. S. (2024). Analisis Tingkat Kepuasan dan Loyalitas Pengguna pada Prototype Aplikasi ITTS-Mart dengan Menggunakan Model E-Servqual. *Jurnal Teknologi Sistem Informasi Dan Aplikasi*, *7*(2), 737–751. https://doi.org/10.32493/jtsi.v7i2.38974