



Available online at

<http://journal.pusbindiklatren.bappenas.go.id/>

Research Paper

Institutional Readiness for Amdalnet Implementation in Environmental Approval Services

A STOPE Assessment in East Java

Dewi Erianik^{1*}, Muhammad Bisri², Arief Tri Hardjoko³, and Juwita Ratna Dewi⁴

^{1,3}Master Program in Environmental Resource Management and Development, University of Brawijaya, Indonesia

²Water Resources Engineering, Faculty of Engineering, University of Brawijaya, Indonesia

⁴Environmental Science, Graduate School, University of Brawijaya, Indonesia

*Corresponding author: erianikdewi@student.ub.ac.id

Abstract

Amdalnet is Indonesia's national digital platform for environmental approval services. Instruction of the Minister of Environment 01/2025 requires regional governments to fully adopt it by 1 June 2026. Subnational readiness remains understudied. This study assesses East Java's provincial institutional readiness and identifies leading and supporting sub-domains in each STOPE (Strategy, Technology, Organization, People, Environment) dimension, using questionnaires, interviews, and document review, supported by descriptive quantitative analysis. Readiness reached 75.34% (Ready), highest in Strategy (79.69%) and lowest in Organization (73.96%). The Relative Importance Index shows the highest-ranking components of each dimension were ICT Leadership, ICT Basic Infrastructure, ICT Regulations, ICT Education and Training, and General Infrastructure. The results indicate transitional institutional readiness where formal compliance has been reached but coordination, personnel, and resource systems remain under consolidation. To achieve higher digital maturity, the province needs to strengthen coordination, technical competence, and financial planning, and engage with the central government on system infrastructure.

Keywords: Amdalnet; digital transformation; environmental approval digitalization; provincial government; transitional institutional readiness.

ARTICLE INFO

Received: January 12, 2026

Received in revised form:

April 15, 2026

Accepted: August 30, 2026

doi: [10.46456/jisdep.v7i2.1244](https://doi.org/10.46456/jisdep.v7i2.1244)



This is an open access article under the CC BY-SA license

© Erianik et al (2026)

THE JOURNAL OF INDONESIA SUSTAINABLE DEVELOPMENT PLANNING

Published by Centre for Planners' Development, Education, and Training (Pusbindiklatren), Ministry of National Development Planning/National Development Planning Agency (Bappenas), Republic of Indonesia

Address: Jalan Proklamasi 70, Central Jakarta, Indonesia 10320

Phone: +62 21 31928280/31928285

Fax: +62 21 31928281

E-mail:

journal.pusbindiklatren@bappenas.go.id

Supported by Indonesian Development Planners Association (PPPI)

Please cite this article in APA Style as:

Erianik, D., Bisri, M., Hardjoko, A. T., & Dewi, J. R. (2026). Institutional Readiness for Amdalnet Implementation in Environmental Approval Service: A STOPE Assessment in East Java. *The Journal of Indonesia Sustainable Development Planning*, Vol 7(2), 305-323. <https://doi.org/10.46456/jisdep.v7i2.1244>

1. Introduction

Environmental approval is a preventive instrument of environmental governance that enables the government to assess environmental feasibility, control potential impacts, and consider economic development versus environmental protection before the activity occurs (Effendi et al., 2021; Nur et al., 2021; Sukananda & Nugraha, 2020). As investment activity grows and environmental legislation becomes more complex, this function is under increasing pressure to be efficient, transparent, accountable, and legally certain (Janssen & Estevez, 2013). Governments throughout the world have reacted to comparable challenges by adopting digital transformation. This is not only the adoption of new technology but the restructuring of governance processes, inter-agency communication, and service delivery (Janssen & Estevez, 2013). The Electronic-Based Government System (SPBE) in Indonesia, which aims to provide more integrated, efficient, and accountable public services, facilitates this change (Salam et al., 2025; Wahyudin et al., 2024).

Amdalnet is the national platform used to carry out this transformation in the environmental sector. This platform combines several stages- screening, document preparation, technical review, evaluation, verification, and approval issuance- into one integrated system. The purpose is to speed up the administrative process and strengthen governance in this sector (Mohammad et al., 2025a). This situation changed significantly after the Instruction of the Minister of Environment/Head of the Environmental Control Agency issued Instruction No. 01 of 2025. Based on this instruction, Amdalnet is no longer just a voluntary technological option. It has become a compulsory administrative obligation that all regional governments must fully adopt by 1 June 2026. This new mandate becomes the starting point of the main issue discussed in this study. The question is no longer whether Amdalnet functions as a system, but whether the institutions required to operate it, particularly at the subnational level where environmental approval is directly administered, are structurally prepared to do so.

Provincial environmental agencies bear this responsibility directly, coordinating regulators, project proponents, environmental consultants, and technical review teams within a single service chain. East Java Province offers a strategic case because its environmental approval service transitioned from a regional platform, the Jatim Online Single Submission (JOSS), to the nationally integrated Amdalnet, a process of institutional adaptation rather than a simple application transfer. The scale of this adaptation is not trivial. Environmental approvals processed by the province rose from 78 in 2023 to 113 in 2024 and 154 in 2025, a 97.44% increase within two years, intensifying pressure on organizational capacity, human resources, digital infrastructure, and inter-agency coordination at the same time as the compliance deadline approached.

Institutional readiness, defined as the extent to which an organization possesses sufficient strategic, technological, organizational, human, and environmental capacity to adopt, implement, and sustain a change initiative, is theorized as a precondition for this kind of transformation (Keramati et al., 2018). Because this capacity is decomposed across the Strategy, Technology, Organization, People, and Environment (STOPE) dimensions (Al-Osaimi et al., 2006), readiness is not expected to reside in any single dimension. Strategic commitment is theorized to set the direction that shapes technological investment and organizational arrangement; technological infrastructure is expected to be the operational precondition that enables the service delivery people must be trained to use, and the external environment is theorized to moderate how far internal readiness can translate into functioning practice (Al-Osaimi et al., 2006, 2008; Bakry, 2004). Wibowo et al. (2025) Applied the Partial Least Squares Structural Equation Modeling and found that strategy, technology, organization, and people had significant positive impacts on the effectiveness of the sectoral e-catalog system in Indonesia. The results differed for the environment dimension, which did not show a significant effect. This might suggest that internal conditions play a bigger role when the use of a digital system is already required by regulation, rather than being voluntarily adopted. This lack of readiness on these interrelated dimensions can result in delays, fractured implementation, user resistance, and limited use of digital technology (Wahid et al., 2024). In this study, the five STOPE dimensions are not viewed as separate scores. They are considered connected when interpreting the readiness level and the leading sub-domain in each dimension.

A lot of research has already applied the STOPE Framework to check digital readiness in Indonesian public institutions. But one pattern keeps showing up. These studies mostly treat the five dimensions as separate scores tied to a single application. None of them really examine a nationally mandated system embedded within a regulatory, environmental-governance service chain. Isti'anah & Harmawan (2024)

looked at 35 civil registration staff in Jombang Regency. They found that People was the strongest dimension while Strategy lagged behind, and they linked this gap to the lack of a documented ICT roadmap. [Pramono \(2021\)](#) Assessed e-readiness across all 16 sub-district offices in Semarang and found that, although most offices reached the ready or highly ready category across nearly every STOPE domain, periodic evaluation of ICT management within the Organization domain was often irregular, carried out only when problems surfaced rather than on a routine schedule, a governance gap that stood out against comparatively higher scores recorded for the Technology domain. [Abidin et al. \(2021\)](#) Applied STOPE to an integrated information system at a state university. Strategy came out on top again. [Zubaidah et al. \(2024\)](#) ran a qualitative case study on a public-complaint application in Indragiri Hulu Regency. There, Organization and People sub-domains fell behind Strategy, mostly due to weak public-private cooperation and skills gaps. Outside Indonesia, [Mengesha et al. \(2022\)](#) combined STOPE with a mixed-methods design to assess cloud-computing readiness at an Ethiopian telecommunications operator. This confirmed that triangulating survey, interview, and document data makes STOPE-based readiness claims more credible, regardless of which design combines them. Most recently, [Wibowo et al. \(2025\)](#) assessed how STOPE dimensions influence system effectiveness using inferential statistics. This moved beyond descriptive readiness scoring, though their setting was procurement rather than environmental governance. For Amdalnet specifically, [Mohammad et al. \(2025a\)](#) used the DeLone and McLean Information System Success Model to poll 125 consultants, reviewers, and system administrators nationwide. System quality and service quality significantly predicted user satisfaction and continued use. Information quality did not. Adoption seemed driven more by regulatory compliance than by perceived usefulness.

Taken together, these studies reveal three research gaps that this study is positioned to fill. First, the empirical evidence on Amdalnet is mainly about system performance and user-level results ([Mohammad et al., 2025a](#)), leaving institutional readiness, the organizational precondition for implementation, largely unexamined. Second, there is still not a lot of evidence from provinces that they are ready for a nationally required digital platform. As of now, most STOPE uses have been for local or district services, non-regulatory systems, or district or municipal services ([Abidin et al., 2021](#); [Isti'annah & Harmawan, 2024](#); [Pramono, 2021](#); [Zubaidah et al., 2024](#)), not for platforms for mandatory environmental governance run by provincial line agencies. Third, past studies on STOPE in the past, even those that used inferential methods ([Wibowo et al., 2025](#)), have not examined environmental approval services. Because environmental approval functions as a preventive risk-control instrument rather than a purely administrative step, slow or largely symbolic digitalization in this sector risks weakening not just service efficiency but environmental risk management itself.

The novelty here is twofold. Empirically, this study offers the first STOPE-based institutional readiness assessment of a provincial environmental agency during the compulsory transition to Amdalnet. Conceptually, it moves past descriptive readiness scoring by introducing transitional institutional readiness, an interpretive lens for cases where a uniformly Ready classification across dimensions reflects compliance with a regulatory deadline rather than settled institutional practice. This contrast reflects the difference between formal conformity and substantive change in institutional theory ([Aksom & Vakulenko, 2023](#); [Meyer & Rowan, 1977](#)). Similarity can be found in other contexts, for example, the use of open data by the Saudi Arabian government as a sign of a slow transition from secrecy to openness ([Altayar, 2018](#)), or the demonstration of digital transformation in Indonesian local governments, which has been shown to increase citizen trust long before participation follows ([Nurlinah et al., 2025](#)).

This research fills these gaps by examining the institutional readiness of the East Java Provincial Government for Amdalnet implementation using the STOPE Framework. The goals are: (1) to assess the level of institutional readiness of the East Java Provincial Government in five dimensions of STOPE; (2) to identify the leading and supporting readiness sub-domains in each dimension based on the ranking of their relative importance; and (3) to interpret the resultant readiness pattern from the perspective of transitional institutional readiness. The findings will provide empirical evidence for subnational readiness within the framework of mandatory digital transformation, as well as STOPE-based readiness research on environmental governance, and offer evidence-based priorities for improving environmental approval digitalization at the provincial level.

2. Methods

2.1 Study Area and Research Design

The research was conducted at the Environmental Agency of East Java Province, Indonesia. This agency has the environmental approval services based on provincial authority. It was chosen as the research location for two reasons. First, it has a strategic role in implementing Amdalnet as the national digital platform for environmental approval services. Second, it is currently in the process of moving from the regional JOSS to the nationally integrated Amdalnet platform.

This study used a qualitative case study design, in which descriptive quantitative data served as a supporting analytical instrument rather than as an independent, statistically driven strand of inquiry (Crowe et al., 2011). The case study design was chosen because institutional readiness for Amdalnet implementation is a complex, context-bound phenomenon embedded in the everyday practice of a specific provincial agency, a condition better understood through in-depth, triangulated qualitative inquiry than through statistical generalization. Within this design, quantitative data were collected first, from the eight Primary Informants, using the STOPE Framework developed by Al-Osaimi et al. (2006) to produce descriptive readiness scores and, subsequently, Relative Importance Index rankings at the sub-domain level. These descriptive figures were not intended to test statistical or causal relationships. They summarized informant perceptions systematically and structured the qualitative inquiry that forms the primary basis for interpretation. The sub-domains ranked highest and lowest within each dimension were used to structure the semi-structured interview guide, so that Key and Supporting Informants were asked to explain, confirm, or contest the specific sub-domains the descriptive data had flagged as relatively stronger or weaker. Key and Supporting Informants were then purposively selected to represent the institutional actors best positioned to explain those results, covering the central policy and system-operator perspective, the consultant and project-proponent user perspective, the AMDAL review perspective, and the cross-sector technical perspective. The meaning of the readiness patterns, including the leading sub-domains and the relationships among STOPE dimensions, was ultimately established through qualitative interpretation of institutional context and through triangulation of interview and documentary evidence, not through the descriptive quantitative data alone. This design combines a systematic summary of informant perceptions with an in-depth, contextually relevant account of institutional practice.

2.2 Participants and Data Collection

Participants were selected using purposive sampling based on their involvement in environmental approval services and Amdalnet implementation. The quantitative assessment focused on 8 officials of the Environmental Agency of East Java Province directly responsible for these services. The qualitative data were gathered from internal and external stakeholders, such as representatives from the Ministry of Environment/Environmental Control Agency, environmental consultants, project proponents, AMDAL reviewers, and technical government agencies.

Table 1. Informant Groups and Their Roles in Assessing Institutional Readiness for Amdalnet Implementation

No.	Informant Group	Role	N	Description
1	Environmental Agency of East Java Province Staff	Primary Informants	8	Staff directly engaged in the delivery of environmental approval services and Amdalnet implementation, including strategic, technical and administrative duties.
2	Ministry of Environment/Environmental Control Agency	Key Informants	2	Policy Officer and Operator of the Amdalnet System, providing insight into policy development, system design, and planned regional rollout.
3	Environmental Consultant	Supporting Informant	2	User of environmental document preparation and submission.
4	Project Proponent	Supporting Informant	2	User of Amdalnet environment Approval Series.
5	AMDAL Reviewer	Supporting Informant	1	The reviewer is required to review the content of environmental documents.
6	Technical Government Agency	Supporting Informant	2	Member of a cross-sector technical review team for the environmental approval assessment process.

Source: Author analysis, 2026.

The eight Primary Informants listed in Table 1 constitute the entire population of staff in the Environmental Sector Division (Bidang Tata Lingkungan) of the East Java Provincial Environmental Agency who were directly engaged in environmental approval services and Amdalnet implementation at the time of data collection. No eligible official was excluded. This is a total population census, or in the Indonesian methodology literature, sampling jenuh, because the population was small and all the eligible members of the population were included, not a probability sample from a larger pool (Sugiyono, 2017, as cited in Lanan & Sudarso, 2024). Accordingly, the quantitative results should be read as a description of this specific institutional unit rather than as an estimate generalizable to a wider population. Eligibility for the quantitative assessment required that an official first worked in the unit responsible for environmental approval services within the East Java Provincial Environmental Agency, specifically the units handling the preparation, verification, or assessment of environmental documents. Second, the official needed direct operational experience with Amdalnet as a system operator, validator, document assessor, or technical staff member. Third, the official needed sufficient understanding of the Amdalnet-based environmental approval process to judge institutional readiness across the STOPE dimensions. Fourth, the official needed at least one year of relevant work experience in environmental approval services, so that responses reflected the operational condition of the service rather than a newcomer's impression. Key and Supporting Informants were selected using purposive sampling, which is based on the rationale that the selection of participants should match the study's aim of obtaining information-rich, role-relevant perspectives rather than statistical representativeness (Campbell et al., 2020; Palinkas et al., 2015). We included two informants for each of the environmental consultant, project proponent, and technical government agency categories, while one informant represented the AMDAL reviewer category. In each case, informants were selected as practical representatives of a distinct stage in the Amdalnet-based approval process rather than as a source of statistical variation within that category, consistent with adequacy criteria used in comparable small-sample qualitative and mixed-method institutional studies (Saunders et al., 2018). Data collection was accomplished over a two-month period, from April to May 2026. The questionnaire assessed institutional readiness across the STOPE dimensions. Semi-structured interviews were conducted in Bahasa Indonesia to gain a deeper understanding of experiences of implementation, institutional challenges, and readiness factors. The primary informants were interviewed in person at the Environmental Agency of East Java Province, while key and supporting informants were interviewed online via Zoom. All interviews were recorded with the agreement of the informants, and then transcribed verbatim and subjected to thematic analysis. Documentary evidence was gathered from regulations, technical guidelines, standard operating procedures, implementation reports, and institutional documents on the environmental approval services and the Amdalnet implementation.

Data of the questionnaire for STOPE readiness evaluation were gathered among the Primary Informants only at the Environmental Agency of East Java Province. Conversely, interviews with Key Informants and Supporting Informants were conducted for source triangulation, to corroborate the quantitative findings and provide contextual explanations of institutional readiness for Amdalnet deployment.

2.3 Research Instrument

The questionnaire was developed based on the STOPE Framework proposed by Al-Osaimi et al. (2006). The framework was operationalized into five dimensions, conceptual sub-domain aspects, and 21 questionnaire items representing institutional readiness for Amdalnet implementation in environmental approval services. The conceptual aspects are presented in Table 2, while the operational indicators used for questionnaire measurement are presented in Table 3.

Table 2. STOPE Dimensions, Sub-Domains, and Aspect Assessed

STOPE Dimension	STOPE Sub-Domain*	Aspect Assessed
Strategy	ICT Leadership	Leadership commitment and executive involvement in Amdalnet implementation (Al-Osaimi et al., 2006; Dahlan & Hartanto, 2023; Zubaidah et al., 2024).
Strategy	ICT Future Development Plans	Strategic direction and development planning for Amdalnet (Al-Osaimi et al., 2006; Dahlan & Hartanto, 2023; Isti'annah & Harmawan, 2024).
Technology	ICT Basic Infrastructure	Readiness of technological infrastructure supporting Amdalnet (Al-Osaimi et al., 2006; Dahlan & Hartanto, 2023).
Technology	ICT e-Services Infrastructure	Reliability and stability of Amdalnet service infrastructure (Al-Osaimi et al., 2006; Dahlan & Hartanto, 2023; Mohammad et al., 2025a).

STOPE Dimension	STOPE Sub-Domain*	Aspect Assessed
Technology	ICT Provisioning	Alignment between system features and the environmental approval service workflow (Al-Osaimi et al., 2006; Mohammad et al., 2025a).
Technology	ICT Support	Technical support and system maintenance for Amdalnet (Al-Osaimi et al., 2006; Dahlan & Hartanto, 2023; Mohammad et al., 2025a).
Organization	ICT Regulations (Government)	Readiness of internal regulations and service standard operating procedures for Amdalnet (Al-Osaimi et al., 2006; Dahlan & Hartanto, 2023; Isti'annah & Harmawan, 2024).
Organization	ICT Cooperation	Internal organizational coordination in Amdalnet management (Al-Osaimi et al., 2006; Choi et al., 2016; Zubaidah et al., 2024).
Organization	ICT Management	Governance arrangements and role allocation in Amdalnet management (Acintya et al., 2022; Al-Osaimi et al., 2006; Haug et al., 2023).
People	ICT Awareness	Awareness of government personnel regarding the function and importance of Amdalnet (Al-Osaimi et al., 2006; Dahlan & Hartanto, 2023; Nani & Ali, 2020; Zubaidah et al., 2024).
People	ICT Education and Training	Training of government personnel in the use of Amdalnet (Al-Osaimi et al., 2006; Dahlan & Hartanto, 2023; Nani & Ali, 2020; Zubaidah et al., 2024).
People	ICT Qualifications and Jobs	Alignment between personnel competencies and environmental approval service responsibilities (Al-Osaimi et al., 2006; Dahlan & Hartanto, 2023; Zubaidah et al., 2024).
People	Management of ICT Skilled	Adequacy of performance and technical capacity of personnel managing Amdalnet (Al-Osaimi et al., 2006; Dahlan & Hartanto, 2023).
Environment	Knowledge	Institutional knowledge of technical guidelines, regulations, and Amdalnet-related information (Acintya et al., 2022; Al-Osaimi et al., 2006; Mohammad et al., 2025a; Nani & Ali, 2020).
Environment	Resources and Economy	Resource and funding support for Amdalnet implementation (Al-Osaimi et al., 2006; Dahlan & Hartanto, 2023).
Environment	Organization	Cross-institutional support and coordination within the Amdalnet ecosystem (Al-Osaimi et al., 2006; Chatzikostas et al., 2013).
Environment	General Infrastructure	Policy ecosystem and external institutional environment supporting Amdalnet, adapted from the General Infrastructure sub-domain (Al-Osaimi et al., 2006; Choi et al., 2016; Nani & Ali, 2020).
Environment	General Infrastructure	Contribution of Amdalnet to the smooth delivery of environmental approval services within business licensing processes (Al-Osaimi et al., 2006; Mohammad et al., 2025a, 2025b).

Source: Adapted from Al-Osaimi et al. (2006).

Table 3. STOPE Dimensions, Sub-Domains and Operational Indicators for Measuring Institutional Readiness

STOPE Dimension	STOPE Sub-domain	Operational Indicator
Strategy	ICT Leadership	The commitment of the Environmental Agency leadership to support Amdalnet implementation in environmental approval services under the authority of the East Java Provincial Government.
Strategy	ICT Leadership	The active involvement of work unit leaders in decision-making and problem resolution related to Amdalnet implementation.
Strategy	ICT Future Development Plans	The integration of Amdalnet implementation into work plans and performance targets of relevant work units in a clear and measurable manner.
Strategy	ICT Future Development Plans	The availability of medium- and/or long-term development plans to optimize Amdalnet utilization in alignment with national systems and policies.
Technology	ICT Basic Infrastructure	The adequacy of hardware, networks, and internet access to support the continuous operation of Amdalnet.
Technology	ICT e-Services Infrastructure	The stability, speed, and minimal technical disruptions of Amdalnet access during environmental approval service processes.
Technology	ICT Provisioning	The ease of use and functionality of Amdalnet features, including tracking, workspace, and notification functions, in supporting effective environmental approval services.
Technology	ICT Support	The availability and responsiveness of technical support, helpdesk, or IT support when users encounter problems in using Amdalnet.
Organization	ICT Regulations (Government)	The alignment of environmental approval service standard operating procedures with Amdalnet workflows, including the clarity of internal procedures used as service references.
Organization	ICT Cooperation	The clarity and effectiveness of coordination and collaboration among staff and divisions in managing Amdalnet.
Organization	ICT Management	The clear assignment and implementation of roles and responsibilities among officials involved in Amdalnet management.
Organization	ICT Management	The extent to which Amdalnet governance arrangements and business processes support timeliness and effectiveness in environmental approval services.

STOPE Dimension	STOPE Sub-domain	Operational Indicator
People	ICT Awareness	The level of understanding and awareness among government personnel regarding the functions, roles, and benefits of Amdalnet in environmental approval services.
People	ICT Education and Training	The availability and adequacy of training, technical guidance, or assistance for government personnel to use Amdalnet according to their duties and functions.
People	ICT Qualifications and Jobs	The alignment of government personnel technical competencies with their duties and responsibilities in Amdalnet management and environmental approval services.
People	Management of ICT Skilled	The adequacy of the number of personnel with Amdalnet-related technical competencies to meet operational and environmental approval service needs.
Environment	Knowledge	The availability, accessibility, understandability, and usability of Amdalnet guidelines, technical regulations, and information provided by MoE/ECA as working knowledge for government personnel.
Environment	Resources and Economy	The adequacy of budget allocation to support Amdalnet implementation, maintenance, and development.
Environment	Organization	The effectiveness of coordination between central and provincial governments in supporting smooth implementation and problem resolution in Amdalnet.
Environment	General Infrastructure	The support provided by national policies, institutional frameworks, and external working environments for effective Amdalnet implementation at the regional level.
Environment	General Infrastructure	The contribution of Amdalnet implementation to accelerating and facilitating environmental approval services as part of support for business activities and investment in the region.

Source: Adapted from Al-Osaimi et al. (2006), operationalized by the authors for the context of Amdalnet implementation

Prior to data collection, the questionnaire instrument was evaluated through expert judgment involving validators with relevant expertise in environmental governance, information systems, and research methodology. Content validity was assessed using Gregory's content validity test, which measures expert agreement through a 2×2 contingency matrix and is appropriate for evaluating the substantive relevance of adapted instrument items (Meivinia et al., 2023; Mirnawati et al., 2022; Putri et al., 2023). Reliability of the instrument was examined using Cronbach's Alpha to measure the internal consistency of items in the questionnaire. Interpretation of reliability refers to the level of reliability proposed by George and Mallery (2003) as cited in Panditawati & Hidayat (2024). Responses were scored on a five-point scale of readiness from 0, none, to 4, excellent.

2.4 Data Analysis

Data analysis was completed in three steps. First, the STOPE Framework was used to assess institutional readiness. Questionnaire outcomes were classified according to STOPE dimensions and sub-domains, and each sub-domain's measure value, describing its level of readiness, was calculated as the mean score of its indicators:

$$m = (\sum x_i) / n, \text{ The value of measure } m \text{ is the score of indicator } i \text{ and } n \text{ is the number of indicators.}$$

The sub-domain measurements were then combined into a readiness score for each STOPE dimension, calculated as the weighted sum of its sub-domain measures:

$$D = \sum w[d,j] \cdot M[d,j], \text{ where } D \text{ is the readiness score of STOPE dimension } d, M[d,j] \text{ is the measure value of sub-domain } j \text{ within dimension } d, \text{ and } w[d,j] \text{ is the weight of that sub-domain.}$$

Because no empirical evidence supported differential weighting of sub-domains, equal weight was assigned within each dimension ($w = 1/n_s$, where n_s is the number of sub-domains in a dimension) and across the five main dimensions, following the original STOPE framework. The overall institutional readiness score was calculated as:

$$STOPE = \sum_{i=1}^5 w(i) \cdot M(i), \text{ where } M(i) \text{ is the readiness score of domain } i \text{ and } w(i) \text{ is the domain weight.}$$

The score was then converted into a percentage. The percentage was interpreted using the CID Harvard e-readiness classification, as reported by Pramono (2021). This classification has four readiness levels, namely not ready, moderately ready, ready, and highly ready (see Table 4). From this stage, readiness profiles were obtained at the indicator, sub-domain, dimension, and overall levels. These profiles were then used to identify institutional strengths and readiness gaps before moving on to the prioritization analysis.

Table 4. Readiness Classification Used to Interpret STOPE Scores

Readiness category	Score range
Not ready	0–36%
Moderately ready	37–61%
Ready	62–86%
Highly ready	87–100%

Source: Adapted from the CID Harvard e-readiness classification, as reported by [Pramono \(2021\)](#).

Second, to identify the leading and supporting readiness sub-domains within each STOPE dimension, the Relative Importance Index (RII) was used as a readiness-based prioritization index. Consistent with the non-causal purpose of this index, RII was not intended to measure the causal or substantive influence of each sub-domain, but only to compare its relative readiness position against other sub-domains within the same dimension based on respondents' assessment scores. The sub-domain occupying the highest relative position in each dimension is referred to throughout this study as the leading sub-domain, not a key factor, to avoid implying a causal relationship the method does not test. The RII was first calculated at the indicator level using the following formula:

$$RII_i = \Sigma W_i / (A \times N)$$

where RII_i is the RII value of indicator i , W_i is the total respondent score for indicator i , A is the highest possible score, and N is the total number of respondents. Since several STOPE sub-domains consisted of more than one indicator, the RII value of each sub-domain was calculated as the average RII of its corresponding indicators:

$$RII_{sd} = \Sigma RII_i / K$$

where RII_{sd} is the RII value of the sub-domain, RII_i is the RII value of each indicator within the sub-domain, and K is the number of indicators in the sub-domain. This procedure follows the use of RII in questionnaire-based prioritization studies and group-level factor assessment ([Boakye et al., 2023](#); [Ouansrimeang & Wisaeang, 2024](#); [Sourav et al., 2024](#)). Because sub-domain readiness scores in Table 7 and sub-domain RII values in this study were both computed as equally weighted averages of the same indicator-level responses, the two sets of figures are numerically identical when expressed as proportions. RII adds not a separate set of scores but an explicit, standardized ranking logic and an interpretive category, following the classification in Table 5, purpose-built to identify the leading sub-domain within each dimension, distinct from the readiness classification in Table 4 used at the dimension and overall level.

Table 5. Interpretation Criteria for RII Values

RII value	Category	Operational meaning in this study
0.80–1.00	Very high	The sub-domain indicates a very strong relative readiness position.
0.60–<0.80	High	The sub-domain indicates a strong relative readiness position.
0.40–<0.60	Moderate	The sub-domain indicates a moderate relative readiness position and requires further strengthening
0.20–<0.40	Low	The sub-domain indicates a weak relative readiness position.
0.00–<0.20	Very low	The sub-domain indicates a critical readiness gap.

Source: Adapted from [Boakye et al. \(2023\)](#); and [Ouansrimeang & Wisaeang \(2024\)](#).

The RII values were then ranked from highest to lowest within each dimension of the STOPE. The leading sub-domain was determined as the one with the highest RII value in each dimension and the rest of the sub-domains were interpreted as supporting readiness sub-domains. The ranking was conducted within each dimension rather than across all STOPE sub-domains to maintain consistency with the objective of identifying the leading sub-domain for each STOPE dimension. The RII results were subsequently confirmed through interview findings and documentary evidence, following the triangulation procedure described below, to strengthen the contextual interpretation of the leading and supporting readiness sub-domains.

Third, qualitative data obtained from interviews and documentary evidence were analyzed using thematic analysis ([Braun & Clarke, 2006](#)), following five procedural steps to keep the coding process transparent and auditable. First, every interview transcript was read in full for familiarization before coding began. Second, each transcript was coded in ATLAS.ti using a coding scheme structured around

the STOPE dimensions and sub-domains, so that a quotation could be traced back to the specific sub-domain it addressed, with additional inductive codes assigned where informants raised issues the initial framework did not anticipate. Third, related codes were grouped into categories and organized into basic, organizing, and global themes for each STOPE dimension following thematic network analysis (Attride-Stirling, 2001), which allowed patterns to be compared across internal and external informant groups. Fourth, coding completeness was checked across all transcripts before interpretation proceeded, and co-occurrence tables in ATLAS.ti were used to identify where themes from different informants converged on the same sub-domain. Fifth, documentary evidence, comprising regulations, technical guidelines, standard operating procedures, and implementation reports, was selected purposively for direct relevance to the STOPE sub-domain under discussion and coded using the same scheme, so document content could be compared against interview themes rather than treated as a separate line of evidence. Because the qualitative component served an explanatory rather than an independently exploratory purpose within this design, the adequacy of the qualitative data was judged using the principle of thematic saturation, the point at which additional coding no longer produced new categories relevant to a sub-domain (Saunders et al., 2018), rather than a predetermined informant count.

2.5 Triangulation of Quantitative and Qualitative Evidence

Quantitative findings from the STOPE assessment and RII analysis were then triangulated with the qualitative evidence at the sub-domain level. A quantitative ranking was treated as convergent when the coded themes from at least two informants, internal or external, supported the same interpretation. It was treated as complementary when external informant or documentary evidence added explanatory detail without contradicting the internal account, and as divergent when internal and external sources differed in emphasis or meaning. Divergent cases were retained and reported rather than resolved in favor of one source (Farmer et al., 2006), because the purpose of triangulation in this study was to strengthen the credibility of the readiness interpretation, not to force agreement between data sources. This triangulation procedure underlies the thematic confirmation presented in Table 9 and the discussion of leading and lower-ranked sub-domains in Sections 3.3 and 3.4.

3. Results and Discussions

3.1. Instrument Validity and Reliability

The expert judgment and Gregory's content validity test indicated that the questionnaire items were substantively relevant to the STOPE dimensions and the context of Amdalnet implementation. The content validity coefficient was $V_c = 0.952$, obtained from the Gregory contingency matrix calculation, and falls within the 0.80-1.00 range, indicating very high content validity (Mirnawati et al., 2022; Putri et al., 2023). The reliability test showed that the questionnaire had high internal consistency, with Cronbach's Alpha reaching 0.958 for 21 questionnaire items. However, the small number of respondents ($n=8$) means this coefficient should be viewed with caution. With so few observations, the estimate is imprecise and could shift meaningfully with a different set of eight respondents, so it is presented as evidence that the items cohered internally for this specific group rather than as a stable population parameter (Bonett & Wright, 2015). The content validity result, which does not depend on respondent sample size in the same way, therefore carries more weight than the Alpha coefficient in supporting the substantive relevance of the instrument.

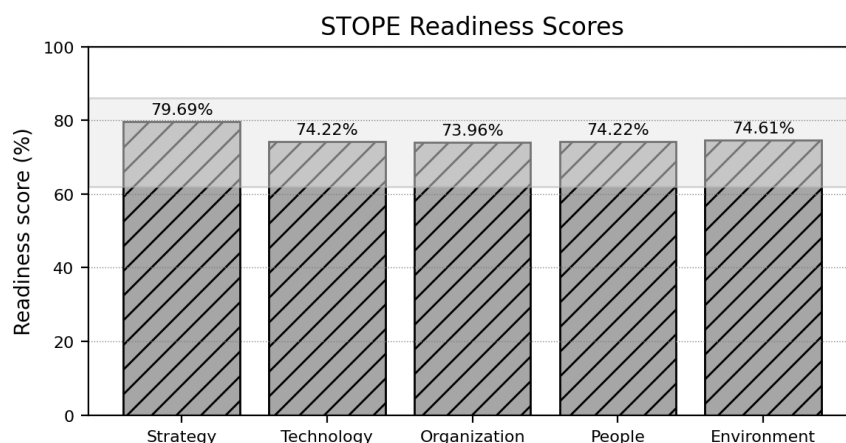
3.2. Overall Institutional Readiness for Amdalnet Implementation

The overall institutional readiness score for the Environmental Agency of East Java Province, based on the STOPE assessment, was 3.0136, or 75.34%. This score is in the Ready area. Table 6 shows the readiness score for each dimension of STOPE.

Table 6. Institutional Readiness Score by STOPE Dimension

Dimension	Score (0–4)	Percentage	Category
Strategy	3.19	79.69%	Ready
Technology	2.97	74.22%	Ready
Organization	2.96	73.96%	Ready
People	2.97	74.22%	Ready
Environment	2.98	74.61%	Ready
Overall STOPE	3.01	75.34%	Ready

Source: Author analysis, 2026.

**Figure 1.** Institutional Readiness Scores across STOPE Dimensions

Source: Author analysis, 2026.

All five dimensions are Ready. Scores are close, from 73.96% to 79.69%. The narrow range indicates that the readiness of institutions for the implementation of Amdalnet has evolved very balanced, covering factors of strategy, technology, organization, humans, and environment combined. Strategy received the greatest score and Organization the lowest, although the difference is slight: only 5.73 percentage points. With only eight respondents and a 0 to 4 rating scale, small shifts in individual scores can move a dimension's percentage by several points, so a 5.73 percentage point gap is not necessarily evidence that Organization is substantively weaker than Strategy. The narrow range more reliably indicates that no single STOPE dimension has been neglected relative to the others, a pattern consistent with a coordinated, top-down compliance effort rather than uneven, dimension-by-dimension development.

A uniform classification doesn't automatically mean full institutional maturity, though. Amdalnet adoption is a mandatory national policy, not something agencies picked up on their own. Hence, a Ready score might be an indication of the agency's compliance with the regulation rather than the institutional practice being in place yet (Dobrolyubova, 2021; Kuhlmann & Heuberger, 2021). This resonates with the classic explanation of decoupling in institutional theory, where formal structures introduced to gain legitimacy may run ahead of the routines and daily practices that actually make them work (Meyer & Rowan, 1977), especially in organizations under high regulatory pressure (Aksom & Vakulenko, 2023).

A similar story can be read in Indonesia. Nugroho & Purbokusumo (2020) showed that local government actors typically attain the perceived category of readiness for e-government projects; however, practical impediments at the implementation level are not removed. Orbawati et al. (2025) arrived at a similar conclusion that e-government readiness existed along with a shortage of ICT-qualified staff members and weak system integration between departments in Magelang City.

The STOPE result for East Java, read against these two Indonesian cases, is best described through what this study defines as transitional institutional readiness: an institutional condition in which formal compliance indicators, namely a mandatory regulatory deadline, baseline technological infrastructure, and initial procedural documentation, are already in place, while the organizational routines, coordination

mechanisms, and resource systems that would sustain the practice over time are still consolidating. Under this definition, the basic capital for implementation already exists in East Java, but governance procedures, inter-unit coordination, system stability, and personnel capacity still require deliberate strengthening before formal readiness converts into settled institutional practice.

3.3. Readiness at the Sub-Domain Level

Table 7. Institutional Readiness Score by STOPE Sub-Domain

Dimension	Sub-domain	Score (0–4)	Percentage
Strategy	ICT Leadership	3.31	82.81%
Strategy	ICT Future Development Plans	3.06	76.56%
Technology	ICT Basic Infrastructure	3.25	81.25%
Technology	ICT Provisioning	3.00	75.00%
Technology	ICT Support	2.88	71.88%
Technology	ICT e-Services Infrastructure	2.75	68.75%
Organization	ICT Regulations (Government)	3.13	78.13%
Organization	ICT Management	3.00	75.00%
Organization	ICT Cooperation	2.75	68.75%
People	ICT Education and Training	3.13	78.13%
People	ICT Awareness	3.00	75.00%
People	ICT Qualifications and Jobs	3.00	75.00%
People	Management of ICT Skilled	2.75	68.75%
Environment	General Infrastructure	3.19	79.69%
Environment	Organization	3.13	78.13%
Environment	Knowledge	2.88	71.88%
Environment	Resources and Economy	2.75	68.75%

Source: Author analysis, 2026. All sub-domains fall into the Ready category.

Within Strategy, ICT Leadership (82.81%) is far ahead of ICT Future Development Plans (76.56%). Internal sources were unified on this topic; there is a commitment to Amdalnet at the senior level. What is lacking is the transformation of medium- and long-term development planning into unit work plans and performance goals. This is consistent with the findings here and the finding of [Zubaidah et al. \(2024\)](#) that leadership direction is a determining condition of e-government readiness in Indonesian local government. A related pattern appears in [Isti'annah & Harmawan \(2024\)](#), where Strategy was actually the lowest-scoring dimension overall in their study. Yet even there, the specific gap they identified was the same one found here, a lack of documented ICT roadmap despite reported leadership commitment. This suggests the leadership-versus-planning split within Strategy may be a recurring pattern independent of how the Strategy dimension scores relative to other dimensions. This division is also seen in previous Indonesian e-government initiatives by [Nugroho & Purbokusumo \(2020\)](#) that rated actors highly on commitment but less well on future planning. It implies that such a division is not unique to East Java.

In Technology, the strongest sub-domain was ICT Basic Infrastructure at 81.25%, while ICT e-Services Infrastructure was the weakest at 68.75%. The gap reflects two different kinds of readiness rather than one simply outpacing the other. Basic infrastructure, hardware, network, and internet access, is largely a one-time investment: once procured, it does not need to be rebuilt for each transaction. Service-level reliability is different. It has to be sustained through continuous technical maintenance as usage grows, a condition that is arguably harder to satisfy than infrastructure alone. Informants who interact directly with document upload and data entry described this gap in operational rather than adoption terms: the system was not being rejected, but its stability and speed under routine use still needed reinforcement. Likewise, [Pramono \(2021\)](#) found that aggregate scores in the Technology domain were quite high in most Semarang sub-district offices, although a few concrete reliability problems were reported, concentrated at the service and support level rather than the basic infrastructure. These included a sub-district office rating its internal network connectivity as poor and a city-wide business-registration application that suffered repeated malfunctions across multiple sub-districts. A comparable national conclusion was reached by [Mohammad et al. \(2025a\)](#), who found that system quality and service quality, more than information quality, were the strongest predictors of user satisfaction with Amdalnet. Thus, making

Amdalnet's mandatory use a truly better service experience hinges less on further provincial infrastructure spending and more on sustained central government technical maintenance capacity, mediated through effective provincial escalation.

As for Organization, the highest score was ICT Regulations (78.13%) and the lowest was ICT Cooperation (68.75%). It seems that internal regulations and standard operating procedures have outpaced the coordination mechanisms needed to implement them. A similar pattern may be seen in [Dahlan & Hartanto \(2023\)](#), which analyzed the electronic signature program of the Government of Magelang City. This pattern aligns with statistical evidence from [Nani & Ali \(2020\)](#), who applied partial least squares to a sample of local government procurement units in Indonesia. They found that a clearly defined strategy and objectives, together with integration between organization and technology, were associated with stronger accountability, transparency, and effectiveness in digital public services. This aligns with the broader principle that environmental protection requires the rule of law and accountable institutional processes ([Purniawati et al., 2020](#)), which in the Amdalnet context means that digitalization can only strengthen environmental governance once these institutional foundations, not the technology itself, are firmly in place. Together, these studies indicate that the organizational foundation for Amdalnet is ICT Regulations and ICT Cooperation, which require ongoing investment in coordination processes that regulations cannot provide.

The best result in the People dimension was achieved in ICT Education and Training, at 78.13%. The lowest was 68.75% in ICT Skilled Personnel Management. There's training. What is still limited is the number of workers who are technically competent enough to handle Amdalnet themselves. [Hikmah et al. \(2022\)](#) found a similar difficulty at the Regional Development Planning Agency of DKI Jakarta Province, where personnel were trained on a knowledge management system but felt they needed continual mentoring from unit heads to use the system successfully. This is explained by the theory of diffusion of innovation [Vidiastuti et al. \(2023\)](#). They say that adopting a digital innovation is not a one-time training but a matter of regularly exposing it through communication channels over time.

Among sub-domains under Environment, General Infrastructure was the strongest (79.69%) and Resources and Economy the weakest (68.75%). The budget and financial assistance to Amdalnet just hasn't kept pace with the policies and organizing support around it. Environmental clearance is closely related to company licensing and the investment climate of the region ([Nur et al., 2021](#); [Sukananda & Nugraha, 2020](#); [Winarsi et al., 2023](#)). The slightly low score in Readiness in Resources and Economy is not a number, then. It is a structural danger because the infrastructure and human capability that support the other segments of STOPE are supported through finance.

3.4. Leading Sub-Domains within Each STOPE Dimension

Table 8. Leading Sub-Domains within Each STOPE Dimension Based on the Relative Importance Index

Dimension	Leading Sub-domain	RII	Category
Strategy	ICT Leadership	0.8281	Very High
Technology	ICT Basic Infrastructure	0.8125	Very High
Organization	ICT Regulations (Government)	0.7813	High
People	ICT Education and Training	0.7813	High
Environment	General Infrastructure	0.7969	High

Source: Author analysis, 2026.

The RII values for all seventeen sub-domains ranged from 0.6875 to 0.8281, which falls within the high and very high category generally used in RII-based prioritization studies ([Boakye et al., 2023](#); [Ouansrimeang & Wisaeang, 2024](#); [Sourav et al., 2024](#)). In other words, none of the sub-domains can really be ignored. All of them contribute to institutional readiness in some way. Still, the five sub-domains discussed above occupy the highest relative position within their own dimensions. The RII procedure used here is a within-dimension relative ranking of readiness scores, not a test of statistical or causal importance. A high RII value indicates that a sub-domain occupies a comparatively stronger position

relative to other sub-domains in the same dimension, not that it exerts greater influence over institutional readiness as a whole or over Amdalnet implementation outcomes. This study therefore refers to the highest-ranked sub-domain in each dimension as the leading sub-domain rather than a key factor, a terminological choice intended to avoid implying causality that the RII method does not support.

The RII ranking was not left on its own. Each leading sub-domain was cross-checked against the thematic codes generated in ATLAS.ti, and also against supporting documents, using the same convergence logic applied throughout the qualitative analysis. This cross-check was meant to strengthen the credibility of the ranking. Table 9 summarizes the results of this thematic confirmation.

Table 9. Thematic Confirmation of Leading Sub-domain Based on ATLAS.ti Coding

Dimension	Leading Sub-domain (RII)	Complete ATLAS.ti Supporting Codes	Selected Representative Quotation	Convergence
Strategy	ICT Leadership	S-Digital Transformation Support; S-Leadership Commitment; S-Implementation Monitoring; S-Decision Making	"Unit leaders are actively involved in monitoring Amdalnet implementation, facilitating IT facilities, and actively coordinating with the central government whenever obstacles arise." (IU-6)	Convergent
Technology	ICT Basic Infrastructure	T-Technology Infrastructure; T-Device Availability; T-Internet Network Quality	"Overall, technology infrastructure readiness at the Environmental Agency of East Java Province is adequate to support Amdalnet operations. Computers, internet access, and internal networks are available, enabling environmental approval services to be delivered digitally." (IU-8)	Convergent
Organization	ICT Regulations (Government)	O-SOP Adjustment; O-Service SOP; O-Internal Regulation	"Internal SOPs and regulations currently accommodate Amdalnet implementation reasonably well, but continuous refinement is still required to keep pace with system development and support more effective, efficient, and standardized environmental approval services." (IU-2)	Convergent
People	ICT Education and Training	P-Training; P-Mentoring; P-Technical Guidance	"The training and mentoring provided have been helpful in improving staff capacity to operate Amdalnet. However, given dynamic feature updates and regulatory changes, continued training and periodic mentoring are still needed." (IU-1)	Convergent
Environment	General Infrastructure	E-Policy Support; E-Business Licensing; E-Investment Support	"Digitalization centralizes and simplifies environmental approval processes and integrates them with the OSS system to provide faster, more transparent, and accountable licensing services, while improving public access to information." (IP-KLH-2)	Convergent

Source: Author analysis based on questionnaire, interview, ATLAS.ti coding, and document review, 2026. Quotations are translated from the original Indonesian transcripts and cited by anonymized informant code.

When all five aspects are considered combined, the quantitative RII ranking and the qualitative thematic coding lead in the same direction. First, the strategy. The RII rating of ICT Leadership aligns with the S-Leadership Commitment code, repeatedly mentioned in the testimonies of internal and external informants, the identified unit leaders who actively monitor, facilitate, and coordinate the process. Technology T-Technology Infrastructure code supports the premise that devices, network, and internet access are the operational base of Amdalnet. This code also found signal constraints to be a frequent maintenance issue, which does not contradict the RII result so much as add detail. For Organization, the O-SOP Adjustment code highlights that SOP alignment with Amdalnet is still in progress, not finished. This supports the transitional reading of the Organization score above. In People, the P-Training code confirms that training needs are ongoing, not satisfied by a single session. And for Environment, the E-Policy Support code links General Infrastructure to integration with the national OSS licensing system. This

suggests that provincial readiness in this dimension is highly contingent on ongoing support from the national government.

All of this convergence across RII, ATLAS.ti coding and supporting documents should not be interpreted as evidence of full maturity in any sub-domain. It demonstrates that the quantitative ranking of leading sub-domains is not merely an artifact of the measurement instrument. This is consistent with a pattern found in the qualitative data as well.

3.5. Convergence and Divergence in the Readiness Evidence

Read across all five dimensions, the pattern of quantitative and qualitative evidence does not point in a single direction. For the leading sub-domains identified in Strategy, Technology, Organization, People, and Environment, quantitative rankings and qualitative themes converge, as detailed in Section 3.4. For several lower-ranked sub-domains, however, the picture is more divergent. ICT Cooperation, ICT e-Services Infrastructure, Management of ICT Skilled Personnel, and Resources and Economy all still fall within the Ready classification at 68.75%, yet the qualitative narrative behind each score, discussed dimension by dimension in Section 3.3, describes conditions that a formal Ready label does not fully convey: coordination mechanisms that have not kept pace with the regulations meant to guide them, service infrastructure whose stability remains a recurring concern, a headcount of technically competent staff that has not kept pace with the growing caseload, and budget support that has not kept pace with the policy commitments built around it. The quantitative classification and the qualitative account are not contradictory in the sense of disagreeing about direction; both point to weakness in the same sub-domains, but they diverge in what that weakness means. A percentage-based classification built on a four-tier scale is not sensitive enough to distinguish a sub-domain that is adequate but unglamorous from one that is a structural bottleneck, and the interviews suggest that at least two of these four, ICT Cooperation and Resources and Economy, function closer to the latter. This divergence between formal readiness classification and substantive institutional practice is itself evidence that the STOPE result should be treated as transitional rather than settled.

3.6. Synthesis

The readiness assessment and the analysis of leading readiness sub-domains jointly describe the digitalization of environmental approval at the provincial level as an interconnected structure of strengths and weaknesses, not a single conclusive success or failure. Read together, the pattern across dimensions looks top-down rather than evenly distributed, though this study did not test that pattern as a causal chain. Leadership commitment, the leading sub-domain in Strategy, is the sub-domain most consistently associated, in both the RII ranking and the interview data, with the mandate's political priority within the agency and with the baseline technological infrastructure and initial regulatory alignment the agency has already achieved. What has not followed as clearly, at least not fully, is the routinization of that priority into everyday coordination, staffing, and budget practice: specific sub-domains within Organization, People, Technology, and Environment, detailed below, even though each dimension's overall score remains close to the others. This pattern is consistent with, though it does not itself prove, an institutional dynamic described elsewhere in the literature, in which attention and authority move faster through an organization than the operational systems needed to sustain them (Aksom & Vakulenko, 2023; Altayar, 2018; Dobrolyubova, 2021). None of the STOPE dimensions functions autonomously; they depend on one another, and ICT Cooperation, ICT e-Services Infrastructure, Management of ICT Skilled Personnel, and Resources and Economy all rated relatively low. Of these, ICT Cooperation, Management of ICT Skilled Personnel, and Resources and Economy fall within the province's own institutional authority, and they point to coordination mechanisms, personnel capacity, and budgetary planning as the areas most in need of deliberate provincial attention. ICT e-Services Infrastructure is a different case. Because Amdalnet's service-level infrastructure is centrally hosted and maintained by the Ministry of Environment/Environmental Control Agency, this particular gap sits outside the province's direct authority and is better addressed through sustained coordination and escalation toward the central government than through provincial-level technical intervention. For East Java's readiness to move beyond a transitional state as Amdalnet shifts from compulsory adoption toward routine institutional

practice, both tracks, strengthening what the province directly controls and strengthening its channel of influence over what it does not, appear necessary.

This study is an extension of the framework of STOPE-based e-readiness research already established in Indonesian local government. The readiness of e-government actors was studied by Nugroho & Purbokusumo (2020). Electronic signature services were examined by Dahlan & Hartanto (2023). Nani & Ali (2020) reviewed e-procurement systems. Isti'anah & Harmawan (2024) studied civil registration services. Municipal e-government was covered by Orbawati et al. (2025) and Pramono (2021). Zubaidah et al. (2024) investigated of e-government readiness at the regional level, and Hikmah et al. (2022) researched of knowledge management systems. This study adds an application of STOPE to environmental governance, a sector where this sort of readiness research remains limited, even as regulatory pressure to digitalize environmental approval continues to grow nationwide (Mohammad et al., 2025a). One point of tension with prior evidence is worth noting. Wibowo et al. (2025) found that the Environment dimension had no significant statistical effect on system effectiveness in their procurement setting, and read this as a sign that internal dimensions may matter more once adoption is mandatory. The present study's descriptive findings do not directly contradict that result, since RII measures relative readiness position rather than statistical influence, but they do show Resources and Economy, a sub-domain within Environment, as one of the weakest-rated sub-domains overall, even though the Environment dimension as a whole scores among the higher of the five. Read together, the two studies suggest that a dimension can register as institutionally under-resourced even where it does not statistically predict short-term system effectiveness, a distinction future inferential research on Amdalnet could test directly. Here, the transitional character of readiness aligns with something in the international governance literature. Several scholars have cautioned against treating regulatory compliance as the same as institutional maturity (Dobrolyubova, 2021; Janssen & Estevez, 2013; Kuhlmann & Heuberger, 2021). Recent evidence from Gowa Regency shows a comparable gap between improved digital services and the citizen participation those services were meant to enable (Nurlinah et al., 2025).

For provincial governments, and particularly for the East Java Provincial Environmental Agency, these results provide an empirical framework for where to focus within their own authority: governance coordination, workforce capacity, and budgetary planning as Amdalnet deployment grows further. Because service-level infrastructure maintenance falls under the central government's jurisdiction, the more relevant provincial task in that area is sustained escalation and coordination with the Ministry of Environment/Environmental Control Agency rather than direct technical intervention.

From the policy perspective, the readiness of the province for Amdalnet should not be viewed only from the implementation of the system or the fulfillment of formal requirements. A more integrated institutional strategy is required to strengthen digital environmental approval services. Local SOPs should be harmonized with national processes. Because service-level technical maintenance of Amdalnet lies with the central government rather than the province, provincial coordination channels for escalating and resolving these issues need to be clearer and faster, not just initial infrastructure procurement at the provincial level. People need continual capacity building, not a one-time push. Coordination between units needs to be clearer. More certainty about funding to run the system is needed.

Conclusion

This study assessed the institutional readiness of the East Java Provincial Environmental Agency for Amdalnet implementation and identified the leading readiness sub-domain within each STOPE dimension. Its central contribution, however, is conceptual rather than numerical: a uniformly Ready classification across all five dimensions does not, by itself, indicate institutional maturity. This study defines transitional institutional readiness as an institutional condition in which formal compliance indicators, such as a mandatory regulatory deadline, baseline technological infrastructure, and initial procedural documentation, are already met, while the organizational routines, inter-unit coordination mechanisms, technical staffing, and resource systems that would sustain digital adoption over time are still consolidating. East Java's readiness profile fits this condition: the province has secured the formal conditions for Amdalnet adoption, while the substantive, everyday practice of running the system is still being built.

This study offers three distinct contributions. Empirically, it provides one of the first STOPE-based institutional readiness assessments of a provincial environmental agency undergoing a compulsory transition to a nationally mandated digital platform. Theoretically, it extends STOPE-based readiness research by identifying transitional institutional readiness as an interpretive category for cases in which formal compliance and substantive institutional maturity have not yet converged. Practically, it indicates that provincial governments undergoing comparable mandatory digital transformations should treat governance coordination, technical personnel capacity, and budgetary planning as priorities equal to infrastructure and training, while escalating central-government-dependent components rather than attempting to resolve them unilaterally. These conclusions should be read within the boundaries of a single provincial case observed during a specific transition window just before the national compliance deadline, and should not be generalized to other provinces or to Amdalnet's post-implementation performance. Future work applying this framework across multiple provincial cases, or tracking readiness against actual service performance as Amdalnet matures nationwide, would help establish how representative this transitional pattern is.

Limitations

This study has several limitations. The quantitative assessment involved eight primary informants from a single provincial environmental agency, which limits how far the readiness scores can be generalized beyond the study site. As a case study conducted during the transition from JOSS to Amdalnet, the findings reflect a specific, time-bound institutional condition rather than a stable post-implementation state. The Relative Importance Index was used descriptively to rank sub-domains within each dimension, not to test causal relationships among readiness sub-domains, consistent with the interpretation of RII results as relative rankings throughout this study. Future studies could address these limitations by including multiple provincial or district cases and by applying inferential methods once Amdalnet implementation has matured nationwide.

Declaration of Generative AI Use

During the preparation of this manuscript, the author(s) used Claude (Anthropic) to assist with language editing, structural revision, and verification of supporting literature in response to peer review comments. All research design, data collection, analysis, interpretation, and scientific conclusions presented in this article are entirely the authors' own work. After using this tool, the author(s) reviewed and edited the content as needed and take full responsibility for the content of this publication.

Author Contributions

The first author conceptualized the study, designed the methodology, collected and analyzed the data, and prepared the original draft. The remaining authors provided supervision, refined the conceptual framework, and reviewed and edited the manuscript. All authors have read and agreed to the published version of the manuscript.

Funding Statement

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Conflict of Interest

The corresponding author, Dewi Erianik, is an employee of the Environmental Agency of East Java Province, the institution examined in this study; however, she was not one of the eight Primary Informants surveyed and interviewed for the STOPE assessment and served solely as a researcher throughout data collection and analysis. The remaining authors declare no conflict of interest. To help mitigate potential bias arising from the corresponding author's institutional affiliation, her role in this study was supervised academically by the co-authors at University of Brawijaya, and findings were triangulated across multiple

internal and external informant groups independent of the corresponding author, rather than relying on the corresponding author's own institutional perspective as a data source.

Acknowledgments

The author would like to thank the Environmental Agency of East Java Province, the Ministry of Environment / Environmental Control Agency, and all research informants for their help and useful insight throughout this study. Thanks also to the academic supervisors and expert validators for their guidance throughout the process.

References

- Abidin, R. J., Irfan, M., Alam, C. N., & Azis, M. A. (2021). Level of readiness of users of integrated information systems at UIN Sunan Gunung Djati Bandung using framework Strategy, Technology, Organization, People, Environment (STOPE). *IOP Conference Series: Materials Science and Engineering*, 1098, 32112. <https://doi.org/10.1088/1757-899X/1098/3/032112>
- Acintya, A., Dewiulansari, Ali, S., & Hapsari, F. U. (2022). Sustainable Manufacturing Practices in Micro, Small, Medium Enterprises (MSMEs): Evidence from Indonesia. *Journal of Sustainability Science and Management*, 17(10), 98–120. <https://doi.org/10.46754/jssm.2022.10.008>
- Aksom, H., & Vakulenko, V. (2023). Revisiting the scope and suggesting novel domains of institutional theory in the public administration research. *Teaching Public Administration*, 42, 230–250. <https://doi.org/10.1177/01447394231191935>
- Al-Osaimi, K., Alheraish, A., & Bakry, S. H. (2006). An Integrated STOPE Framework for e-Readiness Assessments. *Proceedings of the 18th National Computer Conference*, 19–29.
- Al-Osaimi, K., Alheraish, A., & Bakry, S. H. (2008). STOPE-based Approach for e-Readiness Assessment Case Studies. *International Journal of Network Management*, 18(1), 65–75. <https://doi.org/10.1002/nem.657>
- Altayar, M. S. (2018). Motivations for Open Data Adoption: An Institutional Theory Perspective. *Government Information Quarterly*, 35(4), 633–643. <https://doi.org/10.1016/j.giq.2018.09.006>
- Attride-Stirling, J. (2001). Thematic networks: An analytic tool for qualitative research. *Qualitative Research*, 1(3), 385–405. <https://doi.org/10.1177/146879410100100307>
- Bakry, S. H. (2004). Development of e-government: a STOPE view. *International Journal of Network Management*, 14(5), 339–350. <https://doi.org/10.1002/nem.529>
- Boakye, M. K., Adanu, S., Adu-Gyamfi, C., Asare, R. K., Asantewaa-Tannor, P., Ayimah, J. C., & Agbosu, W. (2023). A Relative Importance Index Approach to On-Site Building Construction Workers' Perception of Occupational Hazards Assessment. *La Medicina Del Lavoro*, 114. <https://doi.org/10.23749/mdl.v114i3.14240>
- Bonett, D. G., & Wright, T. A. (2015). Cronbach's Alpha Reliability: Interval Estimation, Hypothesis Testing, and Sample Size Planning. *Journal of Organizational Behavior*, 36(1), 3–15. <https://doi.org/10.1002/job.1960>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., Bywaters, D., & Walker, K. (2020). Purposive Sampling: Complex or Simple? Research Case Examples. *Journal of Research in Nursing*, 25(8), 652–661. <https://doi.org/10.1177/1744987120927206>
- Chatzikostas, G., Boskidis, I., Symeonidis, P., Tekes, S., Pekakis, P., Bais, A., & Moutzi, V. (2013). eEnviPer: Environmental Permits over the Cloud. *Procedia Technology*, 8, 508–511. <https://doi.org/10.1016/j.protcy.2013.11.068>
- Choi, H., Park, M. J., Rho, J. J., & Zo, H. (2016). Rethinking the Assessment of e-Government Implementation in Developing Countries from the Perspective of the Design--Reality Gap: Applications in the Indonesian e-Procurement System. *Telecommunications Policy*, 40(7), 644–660. <https://doi.org/10.1016/j.telpol.2016.03.002>
- Crowe, S., Cresswell, K., Robertson, A., Huby, G., Avery, A., & Sheikh, A. (2011). The Case Study Approach. *BMC Medical Research Methodology*, 11, 100. <https://doi.org/10.1186/1471-2288-11-100>
- Dahlan, Y. K., & Hartanto, R. (2023). Framework for e-Readiness Analysis of the Electronic Signatures

- Implementation in Local Government : A Case Study of Magelang City Government. *2023 2nd International Conference on Computer System, Information Technology, and Electrical Engineering (COSITE)*, 102–107. <https://doi.org/10.1109/COSITE60233.2023.10249952>
- Dobrolyubova, E. (2021). Measuring Outcomes of Digital Transformation in Public Administration: Literature Review and Possible Steps Forward. *NISPAcee Journal of Public Administration and Policy*, 14, 61–86. <https://doi.org/10.2478/nispa-2021-0003>
- Effendi, H., Mursalin, & Sonaji, R. (2021). Dinamika Persetujuan Lingkungan dalam Perspektif Peraturan Pemerintah Nomor 22 Tahun 2021 dan Peraturan Turunannya. *Jurnal Pengelolaan Lingkungan Berkelanjutan*, 5(3), 759–787.
- Farmer, T., Robinson, K., Elliott, S. J., & Eyles, J. (2006). Developing and Implementing a Triangulation Protocol for Qualitative Health Research. *Qualitative Health Research*, 16(3), 377–394. <https://doi.org/10.1177/1049732305285708>
- Haug, N., Dan, S., & Mergel, I. (2023). Digitally-induced change in the public sector : a systematic review and research agenda. *Public Management Review*, 00(00), 1–25. <https://doi.org/10.1080/14719037.2023.2234917>
- Hikmah, A. N., Candradewini, & Miradhia, D. (2022). Kesiapan Sumber Daya Manusia dalam Penerapan Sistem Knowledge Management pada Badan Perencanaan Pembangunan Daerah Provinsi DKI Jakarta. *JANE: Jurnal Administrasi Negara*, 13(2), 291–301.
- Isti'anah, S. N., & Harmawan, B. N. (2024). E-Readiness Aktor Pelaksana dalam Penerapan NING YAONAH. *Jurnal Kebijakan Publik*, 15(1), 356–363. <https://jkp.ejournal.unri.ac.id>
- Janssen, M., & Estevez, E. (2013). Lean government and platform-based governance: Doing more with less. *Government Information Quarterly*, 30, S1–S8. <https://doi.org/10.1016/j.giq.2012.11.003>
- Keramati, A., Behmanesh, I., & Noori, H. (2018). Assessing the impact of readiness factors on e-government outcomes: An empirical investigation. *Information Development*, 34(3), 222–241. <https://doi.org/10.1177/0266666916685603>
- Kuhlmann, S., & Heuberger, M. (2021). Digital transformation going local: implementation, impacts and constraints from a German perspective. *Public Money & Management*, 43, 147–155. <https://doi.org/10.1080/09540962.2021.1939584>
- Lanan, K. O., & Sudarso, A. P. (2024). Pengaruh Gaya Kepemimpinan dan Disiplin Kerja Terhadap Kinerja Karyawan pada PT. Wita Kharisma Jaya Bersama Jawa Barat. *Lokawati: Jurnal Penelitian Manajemen Dan Inovasi Riset*, 2(4), 306–316. <https://doi.org/10.61132/lokawati.v2i4.1056>
- Meivinia, A. P., Ardi, A., Zulyusri, Z., & Helsa, H. (2023). Validitas Instrumen Tes Keterampilan Berpikir Kritis pada Materi Virus di Fase E SMA/MA. *JRTI (Jurnal Riset Tindakan Indonesia)*, 8(1), 132–137. <https://doi.org/10.29210/30033074000>
- Mengesha, G. H., Musa, P. F., Negash, S., Leuleged, R., & Munchus, G. (2022). Assessment of readiness for launching cloud computing services: The case of Ethio-Telecom in Ethiopia. *Electronic Journal of Information Systems in Developing Countries*, 88(4), e12210. <https://doi.org/10.1002/isd2.12210>
- Meyer, J. W., & Rowan, B. (1977). Institutionalized Organizations: Formal Structure as Myth and Ceremony. *American Journal of Sociology*, 83(2), 340–363. <https://doi.org/10.1086/226550>
- Mirnawati, Sulfasyah, & Rahmawati. (2022). Validitas Buku Saku Digital Muatan Mata Pelajaran Bahasa Indonesia Kelas Lima Sekolah Dasar berbantuan Aplikasi Android. *DWIJA CENDEKIA: Jurnal Riset Pedagogik*, 6(2), 253–262.
- Mohammad, F., Sutjahjo, S. H., Effendi, H., Sitanggang, I. S., & Sasongko, D. P. (2025a). Assessing Amdalnet's Role in Digitalizing Environmental Approval in Indonesia: An Information System Success Model Approach. *Journal of Natural Resources and Environmental Management*, 15(6), 980–994. <https://doi.org/10.29244/jpsl.15.6.980>
- Mohammad, F., Sutjahjo, S. H., Effendi, H., Sitanggang, I. S., & Sasongko, D. P. (2025b). Transformasi Kerangka Hukum Lingkungan Indonesia melalui Next Generation Framework: Evaluasi Normatif-Praktis Tata Kelola Terpadu. *Bina Hukum Lingkungan*, 10(1). <https://doi.org/10.24970/bhl.v10i1.473>
- Nani, D. A., & Ali, S. (2020). Determinants of Effective e-Procurement System: Empirical Evidence from Indonesian Local Governments. *Jurnal Dinamika Akuntansi Dan Bisnis*, 7(1), 33–50. <https://doi.org/10.24815/jdab.v7i1.15671>
- Nugroho, R. A., & Purbokusumo, Y. (2020). E-Government Readiness: Penilaian Kesiapan Aktor Utama Penerapan E-Government di Indonesia. *IPTEK-KOM: Jurnal Ilmu Pengetahuan Dan Teknologi Komunikasi*, 22(1), 1–11.
- Nur, M. I., Fraiskam, N., Pangaribuan, R. F., & Samad, E. C. (2021). Persetujuan Lingkungan dalam Undang-

- Undang Cipta Kerja dan Dampak dari UU Cipta Kerja bagi Lingkungan. *Jurnal Syntax Admiration*, 2(12), 2353–2366. <https://doi.org/10.46799/jsa.v2i12.362>
- Nurlinah, Ansar, M. C., & Chowdhury, K. (2025). Impact of Government Digital Transformation on Citizen Trust and Participation: Evidence from Gowa Regency, Indonesia. *Frontiers in Human Dynamics*, 7, 1700582. <https://doi.org/10.3389/fhumd.2025.1700582>
- Orbawati, E. B., Nugraha, J. T., Fadlurahman, F., Mukti, A., & Sugiharti, R. (2025). Readiness of E-Government Implementation in Developing Countries in the Perspective of the Governmental Models: A Case in Indonesia. *Sosiohumaniora: Jurnal Ilmu-Ilmu Sosial Dan Humaniora*, 27(1), 587–595. <https://doi.org/10.24198/sosiohumaniora.v27i1.61819>
- Ouansrimeang, S., & Wisaeang, K. (2024). Analyzing the critical delay factors for construction projects in the public sector using relative importance index and machine learning techniques. *Journal of Infrastructure, Policy and Development*. <https://doi.org/10.24294/jipd.v8i8.6208>
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533–544. <https://doi.org/10.1007/s10488-013-0528-y>
- Panditatwa, P., & Hidayat, A. (2024). Education Marketing Mix for Private Vocational High Schools in Indonesia. *Jurnal Pendidikan Teknologi Dan Kejuruan*, 30(1), 78–97. <https://doi.org/10.21831/jptk.v30i1.67842>
- Pramono, S. E. (2021). Kajian Kesiapan (E-Readiness) Kecamatan dalam Penerapan E-Government Kota Semarang. *Jurnal Riptek*, 15(2), 8–18.
- Purniawati, Kasana, N., & Rodiyah. (2020). Good Environmental Governance in Indonesia (Perspective of Environmental Protection and Management). *The Indonesian Journal of International Clinical Legal Education*, 2(1), 43–56. <https://doi.org/10.15294/ijicle.v2i1.37328>
- Putri, S. M., Arsih, F., Fadilah, M., & Anggriyani, R. (2023). Validitas Instrumen Soal Tes Keterampilan Berpikir Kritis Siswa Kelas X pada Materi Komponen Ekosistem dan Interaksinya. *Jurnal Pendidikan Tambusai*, 7(3), 24253–24261. <https://doi.org/10.31004/jptam.v7i3.10451>
- Salam, R., Asmar, & Rosalin, S. (2025). Integrasi Teknologi dalam Pelayanan Publik sebagai Upaya Meningkatkan Resiliensi Organisasi Pemerintahan di Indonesia. *Pallangga Praja*, 7(1), 31–37.
- Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H., & Jinks, C. (2018). Saturation in Qualitative Research: Exploring Its Conceptualization and Operationalization. *Quality & Quantity*, 52, 1893–1907. <https://doi.org/10.1007/s11135-017-0574-8>
- Sourav, M. M. I., Abeer, A. A., & Bhuiyan, A. H. (2024). Quantifications of Service Quality Factors Using the Relative Importance Index Method for Passenger Ferry Service in Bangladesh. *Discover Civil Engineering*, 1, 7. <https://doi.org/10.1007/s44290-024-00008-8>
- Sukananda, S., & Nugraha, D. A. (2020). Urgensi penerapan Analisis Dampak Lingkungan (AMDAL) sebagai kontrol dampak terhadap lingkungan di Indonesia. *Jurnal Penegakan Hukum Dan Keadilan*, 1(2), 119–137. <https://doi.org/10.18196/jphk.1207>
- Vidiastuti, D. P., Darwin, M., & Ikhwan, H. (2023). Difusi dan Adopsi Inovasi SiBakul Markethub Free Ongkir DIY di Era Pandemi Covid-19. *Matra Pembaruan*, 7(1), 49–60. <https://doi.org/10.21787/mp.7.1.2023.49-60>
- Wahid, M., Rahman, S., Yusuf, M., & Busyairi, M. H. (2024). Unlocking Institutional Capacity for Sustainable E-Government Transformation. *Sinergi International Journal of Communication Sciences*, 2(3), 132–144. <https://doi.org/10.61194/ijcs.v2i3.682>
- Wahyudin, M., Devi, R. K., & Sensuse, D. I. (2024). Digital Transformation Readiness Model in Government. *Ranah Research: Journal of Multidisciplinary Research and Development*, 6(4).
- Wibowo, R., Saraswati, E., & Atmini, S. (2025). The Role of STOPE Framework in the Effectiveness of E-Catalog at the Ministry of Public Works and Public Housing. *Eduvest – Journal of Universal Studies*, 5(6), 6861–6876.
- Winarsi, S., Prihatiningtyas, W., Wahyuni, I., Fitriana, Z. M., & Rahman, A. (2023). The Current Position of Environmental Approval Post-Job Creation Law: Ensuring the Indonesian SDGs Achievement. *Russian Law Journal*, 11(2), 107–116.
- Zubaidah, E., Monalisa, Rusadi, S., & Handoko, T. (2024). E-Readiness Analysis to Accelerate Transformation Towards E-Government in Regional Government in Indonesia: Case Study of the Government of Indragiri Hulu Regency of Riau Province. *Jurnal Bina Praja*, 16(1), 37–53. <https://doi.org/10.21787/jbp.16.2024.37-53>