Integrating TQM into organizational culture for the success of the one Indonesian data (SDI) in the East Java

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**ABSTRACT**

This study evaluates the implementation of Total Quality Management (TQM) in supporting the One Data Indonesia (SDI) policy at the East Java Provincial Communication and Information Agency (Kominfo). Employing a qualitative descriptive approach, the study well elaborates on challenges such as the lack of coordination between government agencies and the lack of regulatory support from the regional government. Despite these challenges, the implementation of TQM at the Communication and Information Agency has brought about well-described benefits, including increased data accuracy and relevance, as well as resource efficiency. However, obstacles such as the shortage of trained human resources and differences in data standards between agencies persist. The implementation of TQM has also fostered collaboration between government agencies and the private sector, enhancing the quality of public services. In conclusion, the implementation of TQM at the Communication and Information Agency supports the SDI policy by improving data service quality and strengthening organizational work culture. Further efforts in HR training and data standardization are necessary to optimize the SDI policy and improve public services.

**Keywords:** Integrating TQM; Organizational Culture; The One Indonesian Data; Work Culture.

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1. **INTRODUCTION**

Providing public services is the government's main task to achieve prosperity and is an indicator of the success of good governance (Tui et al., 2022). This is regulated in the amendment to the 1945 Constitution, which includes bureaucratic reform to improve the government system at the local and national levels. Bureaucratic reform is important to achieve good government according to the principles of good governance and requires high commitment from service providers (Khan, 2021). Moenir (2015) states that a professional government is demonstrated by the ability to provide excellent service through systematic, effective, and measurable work processes. The importance of quality public services that utilize technology has given rise to the One Data policy, a government initiative to support policy-making based on data and support various sectors that require data (Manshur, 2021).

The One Data Policy requires government data to be accurate, open, and interoperable with the principles of one data standard, one standard metadata, and one data portal, so that data can be used internally and publicly (Khan, 2021). This initiative, supported by various institutions such as the Presidential Staff Office, Ministry of National Development Planning/Bappenas, Central Statistics Agency, and Geospatial Information Agency, aims to increase transparency,
accountability, and community participation in development (Manshur, 2021). The Communication and Informatics Service (Diskominfo) manages public service information in accordance with the SDI policy and PERPRES No. 95 of 2008 concerning Electronic-Based Government Systems.

In the Third Phase of the RPJPN (2015-2019), the focus is on economic development based on natural, human, and technology resources, while the final phase of the RPJPN (2020-2024) emphasizes accelerating economic development with a focus on developing quality human resources and utilizing digital media. The Ministry of Communication and Information (Kemenkominfo) regulates ICT policies, coordinates with various stakeholders, builds effective public communication, handles hoaxes, and improves internet access in schools and health centers. By the end of 2019, internet access was available in 6,730 locations to reduce the digital gap between rural and urban areas. The One Day Service (ODS) and Online Single Submission (OSS) programs by the Ministry of Communication and Information accelerate the public service and licensing process up to 21 times faster, in accordance with Government Regulation no. 24 of 2018 and no. 71 of 2019. However, the main problem faced is how to ensure accurate data and effective interoperability across government agencies to support transparency, accountability, and public participation, as well as how to ensure equitable internet access to reduce the digital divide.

Implementation of the One Data Indonesia (SDI) policy, which is a priority target for the East Java Communications and Information Service, should have been realized in 2022, but data from various sources has not been fully collected and integrated. As a result, published data often differs between sources and much of it is not up to date. This hampers educational, economic, and administrative activities in society due to differences in data from various agencies such as BPS, Department of Population, and others (Dhahir, 2019; Rahmawati & Sulistyo, 2019). Data gaps still often occur due to significant differences in the amount of data between various sources, especially in population, health services, and education data.

2. RESEARCH METHOD

This study employs a qualitative approach, emphasizing an in-depth understanding of a problem rather than generalizations (Strauss & Corbin, 2013). The analysis technique used is in-depth analysis, examining problems on a case-by-case basis since each problem is considered to have a different nature. A case study approach is utilized to investigate specific phenomena in society comprehensively, studying the background, circumstances, and interactions that occur (Moleong, 2016). Research informants were selected purposively, including employees of the East Java Communication and Informatics Office directly involved in TQM implementation, as well as external stakeholders such as private sector representatives and community members interacting with the provided public services.

Qualitative data analysis is conducted in three stages: data reduction, data display, and conclusion or verification (Strauss & Corbin, 2013). In this stage, the data obtained from interviews and documentation are simplified, selected, and focused according to the research objectives. This process involves sorting relevant and important data, eliminating irrelevant data, and coding the data to identify emerging themes and patterns. The reduced data are then presented systematically in the form of matrices, graphs, and tables. This data presentation aims to facilitate understanding and interpretation of the data. Techniques used in this stage include thematic analysis, which involves grouping data based on emerging themes.

The final stage is drawing conclusions and verification. Conclusions are made based on the analyzed findings and verified through data triangulation, peer discussions, and field observations. Verification is conducted to ensure that the drawn conclusions are valid and reliable. This study focuses on analyzing the application of Total Quality Management (TQM) to optimize public service innovation at the East Java Provincial Communication and Information Office (Kominfo). The study examines and analyzes the TQM process to produce an ideal and measurable implementation model. TQM implementation is part of the Ministry of Communication and Information's strategy designed based on Presidential Decree No. 18 of 2020, as well as evaluating the performance achievements of the previous Ministry of Communication and Information Strategic Plan. Presidential Decree No. 39 of 2019 concerning One Data Indonesia is also the government’s effort to accelerate data integration across central and regional agencies.
The instruments used in this research include semi-structured interviews and documentation in the form of writings, drawings, or monumental works of the studied objects. The credibility of the data is tested through discussions and observations, aiming to assess the truth of qualitative research findings (Moleong, 2016).

3. RESULTS AND DISCUSSIONS
Public Service Performance Achievement

The East Java Provincial Government's Communication and Information Service (Kominfo Jatim) is part of the Regional Work Unit (SKPD) which was formed by the East Java Provincial Government to support the Governor and Deputy Governor in running regional government. The East Java Ministry of Communication and Information has the task of formulating policies, coordinating and implementing policies, including improving information services for the public. Based on East Java Governor Regulation Number 55 of 2011, the East Java Kominfo has a working apparatus called the Information and Documentation Management Officer (PPID), who is responsible for storing, documenting, providing and/or serving public information. Apart from that, in accordance with Law no. 23 of 2014 concerning Regional Government, Government Regulation no. 18 of 2016 concerning Regional Apparatus, and East Java Province Regional Regulation no. 11 of 2016 concerning the formation and structure of regional apparatus, the East Java Kominfo was also given additional duties in matters of statistics and coding.

In accordance with Law Number 23 of 2014, the Regional Apparatus Strategic Plan (Renstra PD) contains goals, targets, programs and development activities based on the duties and functions of each regional apparatus, guided by the vision and mission of the regional medium-term development plan (RPJMD). as well as the Vision and Mission of the East Java Provincial Government 2019-2024. The PANRB Ministry, as the builder of public services, has implemented Law no. 25/2019 concerning Public Services by integrating various services through Public Service Malls (MPP) and conducting public service evaluations to determine the Public Service Index for each service provider. In this regard, the quality of services provided by the East Java Communications and Information Service can be assessed through their service quality index. The results of the work of the East Java Ministry of Communication and Information are known as follows.

| Table 1. East java communication and information service LAKIP assessment |
|---------------------------|---------------|-----|
| Indicator                 | Proportion    | Appraisal |
|                          |               | 2021 | 2022 |
| Performance Planning      | 30%           | 23.78| 27.4 |
| Performance Measurement   | 25%           | 20.94| 21.56|
| Performance Reporting     | 15%           | 12.94| 13.48|
| Performance Evaluation    | 10%           | 8.42 | 10.0 |
| Performance Achievement   | 20%           | 16.38| 10.27|
| Evaluation Result Value   | 100%          | 82.46| 82.36|
| Level of Performance Accountability | A | A |

Source: East Java Communication and Information Service Secretariat, 2023

The evaluation results show that the East Java Province Communication and Information Service received a score of 82.36 or a predicate of A with a satisfactory interpretation. This assessment reflects the high level of effectiveness and efficiency in budget use, demonstrating a strong alignment between resource allocation and performance outcomes. Furthermore, it highlights the successful cultivation of a results-oriented bureaucratic culture and effective government administration within the agency. As a regulatory body, the East Java Communication and Information Service plays a pivotal role in advancing the completion of ICT-related policies and regulations. These include laws, Presidential regulations, and ministerial regulations. By enhancing coordination with relevant stakeholders, the agency aligns with the bureaucratic reform roadmap towards Good and Clean Governance. This alignment is corroborated by an interview with the Head of the East Java Communications and Information Service, who emphasized their primary responsibility in formulating regional, implementation, and technical policies in communication and
informatics. This approach serves as a reference for evaluation and underscores the critical need for data as a prerequisite for realizing digital government.

Currently, Indonesia is not only required to adopt technology but also to successfully implement e-government initiatives that transition towards digital government. The issuance of Presidential Regulation No. 39 of 2019 concerning One Indonesian Data is a central government effort to accelerate data integration across central and regional agencies. Data reveals over 27,400 applications and multi-platform, multi-standard databases that remain unintegrated, resulting in scattered data. This fragmentation leads to inefficiencies, including system and application duplication and excessive construction of data centers and server spaces, which in turn inflate government ICT expenditures.

From an economic perspective, digitalization serves as a catalyst for productivity in domestic strategic sectors, which are in the nascent stages of transformation. National digital startups play a crucial role as catalysts in sectors such as agriculture, fisheries, tourism, education, health, logistics, and trade, especially among MSMEs. The rapid digitization of these sectors is vital for developing the national digital economy. For instance, the trade sector, particularly MSMEs, holds significant potential to bolster Indonesia’s economic strength through the adoption of ICT by MSME players. A McKinsey study suggests that Indonesia could achieve an additional GDP growth of USD 140 billion and create 26 million jobs by 2030 if it can successfully scale 168,000 MSMEs from micro to small to medium scale. Out of 62.9 million MSMEs nationwide, 17,113,220 have already been onboarded to the marketplace, showcasing the strategic importance of data.

Strategic Data Centers as data becomes increasingly strategic, the establishment of data centers must meet high strategic requirements. However, their implementation necessitates a continuous process, involving significant time and phased stages. Research by Khan (2021) indicates that excellent public services must not only follow global trends but also aim to realize good governance characterized by transparency and accountability in government processes. Additionally, Marthalina (2022) provides insights into the significant opportunities that the application of information technology offers for regional development. Regions can leverage information technology to streamline service processes, highlight regional potential, and enhance interaction with both the community and businesses. In conclusion, the implementation of TQM at the East Java Communication and Information Service has demonstrated notable improvements in public service innovation. By aligning with bureaucratic reform goals and leveraging digital advancements, the agency has set a benchmark for effective and efficient governance. The ongoing efforts to integrate data and digitize strategic sectors underscore the potential for substantial economic growth and enhanced public service delivery.

Obstacles in Implementing Presidential Decree 39/2019 concerning One Data

In 2015, the East Java Provincial Communication and Information Service (Kominfo Jatim) built an integrated data center for data and information, providing security for the East Java Provincial government which has hosted 416 accounts and 3 collocations for the East Java Provincial Waterworks Department, Regency Ponorogo, and Madiun Regency. In 2016, hosting was also carried out for P2T and ITS. This step is part of the acceleration of Indonesia’s digital transformation, where the digitization of television from analog broadcasts to digital broadcasts (Analog Switch-Off or ASO) is a must to produce more efficient and optimal broadcast quality for the Indonesian people. However, the East Java Provincial government sees risks on a national scale in data unification, especially with the large number of population data leaks that occur and are traded on dark sites on the internet (Ristiandy, 2021). This needs to be addressed immediately by the East Java regional government, considering that services at the district/city level are the most basic level of service that is in direct contact with the community in the digital transformation process.

Islamic Research (2021) supports this reality, showing that the Presidential Regulation on One Indonesian Data which was passed in 2019 has not shown significant results due to obstacles in its implementation. (Hidayat & Sanjaya, 2022) also explains that the single data forum between levels of government has not had maximum impact, causing the distribution of community aid in the regions to often be disrupted. (Dewi & Kusumastuti, 2019) added that in implementing E-Government, Indonesia still faces various obstacles such as inadequate security systems, data and
information inconsistencies, and inadequate infrastructure, requiring strategies to overcome them through E-Government standardization.

Optimizing the One Data Indonesia (SDI) policy as a public service innovation still faces many challenges in its implementation in accordance with Presidential Regulation no. 39 of 2020. This challenge includes planning, collecting, examining and disseminating data. Research by (Retnowati et al., 2018) revealed that data inspection is difficult to carry out according to SDI principles because data standards are not met, metadata is not uniform, and there is no data reference code, causing data to overlap and be difficult to share. (Purwanto et al., 2020) highlight that data dissemination is hampered by inadequate digital infrastructure, the development of integrated data centers, and low data competency. (Tyas et al., 2019) stated that policy effectiveness is influenced by understanding the meaning and substance of public policy as well as the ability of policy analysts to produce good policies. Even though the SDI policy has been created, research by (Fahlevi & Anugrah, 2021; N. H. Khotimah et al., 2021; Ristiandy, 2021) shows that data disintegration occurs due to the central government's inability to start this process and the lack of priority on data integration at the regional level. In addition, differences in definitions and data concepts between agencies such as BPS and the Ministry of Home Affairs cause differences in reports on population numbers and area areas.

The East Java Provincial Government, through the Communication and Informatics Service, is trying to strengthen and integrate data to realize open data in the SDI program using a Big Data approach and artificial intelligence (AI) technology. The goal is to improve data quality so that it is accurate, complete, current, consistent and relevant. However, in 2021, only two infographic editions of the quarterly target were successfully released by the Communication and Information Service, covering six themes per edition, with only 50% realization. This problem is triggered by differences in definitions and concepts without metadata between agencies, differences in area codes and geospatial data, as well as limited human resources at the East Java Communications and Information Service, which only has two functional statistical officials. Even so, in 2021, there will be 460 data dictionary titles entered into the East Java SATA portal, with 160 titles filled with data from 30 regional devices. Interviews revealed various obstacles in optimizing the One Data policy, which included a lack of resources and differences in data definitions between agencies. These constraints and optimization efforts can be illustrated in the following scheme.

Figure 1. Map of data integration problems

From this scheme, it can be concluded that there are still challenges in realizing the One Data Indonesia policy, where not all agencies, both at the central and regional levels, have issued derivative regulations on Presidential Decree No. 39 of 2019 concerning SDI. In addition, the lack of detailed instructions regarding SDI implementation at the local government level and the lack of successful examples of SDI implementation are also problems. This results in low understanding of government employees, especially at the regional level, about the SDI concept. At the data
collection stage, difficulties were encountered in integrating the data due to non-standard formats, lack of metadata, and missing reference codes, making it difficult to use together.

Problems at the data checking stage also arise, due to the difficulty of following SDI principles, which has been a problem since the data collection stage. Limited human resource capacity in managing data at the local government level, as well as in analyzing and utilizing data, is also the cause. Furthermore, at the data dissemination stage, digital infrastructure experienced problems. The process of implementing open data requires skilled human resources in various fields, such as computing, statistics, programming and data analysis, however, Indonesia still does not have an integrated data center that can integrate thousands of applications from ministries, institutions and local governments.

**Total Quality Management (TQM) Approach**

Total Quality Management (TQM) is a comprehensive management approach that emphasizes customer satisfaction through continuous improvement of processes, products, services, and the organizational work culture by all members of the organization. In the government sector, TQM is crucial for executing public service, development, and protection functions effectively and efficiently. However, the implementation of TQM at the East Java Communication and Information Service faces several obstacles, such as the time-consuming nature of data collection, the need for significant changes in work culture, and resistance to new methods. Although e-government initiatives can enhance service quality, internal organizational factors and existing government regulations, including Permen PAN-RB No. 14/KEP/M.PAN/7/2013 concerning General Guidelines for the Implementation of Public Services, remain challenging. For TQM to be successful, strong leadership and long-term commitment from all regional officials are essential.

TQM is not merely about quality control conducted after production processes are completed (after-the-event process), as explained by Satriawan (2018). Instead, TQM emphasizes customer satisfaction and quality control from the outset. This approach is particularly relevant in the information and data sector. Several issues at the East Java Communication and Information Service that can be addressed through TQM include infrastructure preparation, economical use of resources, cost control, technology utilization, human resource development, inter-sector collaboration, and compliance with government regulations. This aligns with the Law and Presidential Decree No. 39 of 2009 and East Java Governor Decree No. 188/115/KPTS/013/2021 concerning the East Java One Data Forum for 2021-2024. This forum underscores the importance of collaboration beyond mere coordination among related agencies to provide excellent service based on dedication and total performance, as well as involving the public to build reputation and trust (public trust).

Effective collaboration and synergy start within the Ministry of Communication and Information and extend to involve all regional officials, the private sector, and the community, aligning with collective goals. This process requires time and consistency to build creative collaboration based on mutual respect, shared needs, and compensating for each other's weaknesses. Research by Khotimah & Lazuardi (2020) indicates that collaboration among agencies in government governance is crucial to avoid coordination problems stemming from suboptimal communication between agencies responsible for statistical activities and geospatial information methodology and those responsible for the substantive data provided.

The primary goal of implementing the TQM philosophy is to meet customer needs and desires (Ife & Tesoriero, 2008). A successful organization must create and maintain close relationships with its customers (Sumaryadi, 2010). In the context of Kominfo's work, customers are defined as data producers and data users. The quality of data, as a product of Kominfo under Indonesia's One Data Policy, must meet the needs and expectations of both internal (government) and external (private sector and society) customers.

Work operations at the Communication and Information Service currently apply partial work principles and are not yet integrated into a system supporting the roles and functions of Communication and Information comprehensively. The TQM approach evolves gradually, starting from inspection, quality control, quality assurance, quality management, integrated quality management, learning organizations, to world-class organizations (Nour, 2018; Redi & Putra, 2021; Satriawan, 2018). ISO 8402 defines TQM or Integrated Quality Management (MMT) as all
management activities that determine quality policies, objectives, and responsibilities (Satriawan, 2018), implementing them through quality planning, quality control, quality assurance, and quality improvement (Gimenez-Espin et al., 2012; Satriawan, 2018). The TQM approach at the Communication and Information Service is proposed as a method that supports the Ministry of Communication and Information's efforts to realize the One Data Indonesia policy. The application of TQM is expected to enhance work quality by achieving optimal work standards. Functionally, if the TQM approach is consistently applied and focused on improving the quality of data services, Kominfo service products will meet the quality standards expected by the community in fulfilling public service tasks (community development). This concept is based on management as a series of activities that integrate existing resources, which must also align with the stages of implementing management functions to create quality work outputs.

**TQM as a Pillar of Organizational Culture**

Work culture is the main foundation that determines how an organization operates and achieves its goals. In the current digital and information era, implementing an effective and adaptive work culture is very important, especially in the government sector. The East Java Province Communication and Informatics Service (Kominfo), as one of the key agencies in managing data and information, faces big challenges in realizing Indonesia’s One Data Policy. To face this challenge, implementing Total Quality Management (TQM) as part of the work culture can be the right solution. Work culture is a set of values, beliefs, attitudes and practices that are implemented and upheld by members of an organization. Work culture reflects the way organizational members interact with each other (Jannah, 2024; Purwanto et al., 2020), carry out duties and responsibilities, and achieve organizational goals.

The Total Quality Management (TQM) or Integrated Quality Management (MMT) approach in the Communication and Information Service is proposed as a construction that supports the achievement of the Ministry of Communication and Information’s work to realize the One Data Indonesia policy (Dhahir, 2019). TQM is not just quality control after the production process (after-the-event process), but focuses more on customer satisfaction and quality control from the start (Satriawan, 2018). The application of TQM is seen as being able to improve work quality by achieving optimal work standards. The implementation of TQM in the Communication and Information Service faces various obstacles, such as the data collection process which is felt to be hard work, requires changes in work culture, and requires strong leadership. Apart from that, fear of new methods or ways is also a big obstacle. All relevant agencies must work hard to overcome these obstacles with consistency and commitment to change (Nour, 2018).

The formation of an organizational work culture through the implementation of Total Quality Management (TQM) in the East Java Province Communication and Information Service (Kominfo) shows a commitment to improving the quality of public services. TQM, with its primary focus on customer satisfaction and quality control from the start of the process, is not just quality control after production is complete. This is especially relevant for the information and data sector, which faces various challenges such as infrastructure preparation, economic use of resources, cost control, use of technology, human resource development, and collaboration between sectors. In the context of the Communication and Information Service, implementing TQM requires collaboration and synergy between various agencies and sectors, both internal and external. This collaboration includes productive cooperation built through strategic partnerships between parties to produce quality services that are beneficial to society. This is in accordance with the decision of the Governor of East Java who emphasized the importance of collaboration in the one data forum. Forming an organizational work culture through TQM also involves significant work culture changes, as explained by (A. Khotimah & Lazuardi, 2020), who highlight the importance of collaboration between agencies to avoid coordination problems and ensure optimal communication between agencies. In practice, the TQM approach in the Communication and Information Service requires strong leadership and commitment to continuously improve the quality of data services in accordance with the standards expected by the community.

The implementation of TQM in the Communication and Information Service also plays a role in overcoming internal problems such as the lack of competent human resources in computing, statistics, programming, data analysis and other skills needed to optimize data use. Apart from that,
external obstacles such as government regulations and the lack of adequate digital infrastructure also need to be overcome to support the implementation of Indonesia’s One Data Policy. Overall, the formation of an organizational work culture through TQM in the Communication and Information Service involves the integration of all resources and the implementation of management functions to create quality public services. This is a continuous process that requires the active involvement of all parties in the organization and close collaboration with various sectors to achieve the common goal of improving the quality of public services.

A strong and positive work culture is the main pillar in creating a productive, efficient and harmonious work environment. Implementing TQM in the East Java Province Communications and Information Service can help realize Indonesia's One Data Policy by improving the quality of data and information services. Through collaboration, synergy and commitment to quality, the Communications and Information Service can increase the effectiveness and efficiency of its services and build public trust in the government. A good work culture not only supports the achievement of organizational goals but also plays a key role in creating a work environment that is healthy, productive and adaptive to change.

4. CONCLUSION

This research evaluated the implementation of Total Quality Management (TQM) to support the One Data Indonesia (SDI) policy within the East Java Province Communication and Informatics Service (Kominfo), using a descriptive qualitative approach. The study identified challenges including inter-agency coordination gaps and insufficient local regulatory support. Despite these obstacles, the adoption of TQM at Kominfo East Java has yielded notable benefits such as enhanced data accuracy, improved relevance of information, and increased operational efficiency. However, persistent challenges like the scarcity of skilled human resources and varying data standards across institutions remain significant hurdles. Moreover, TQM implementation has stimulated collaboration between government bodies and the private sector, thereby enhancing the overall quality of public services by fostering a culture of continuous improvement and innovation.

In conclusion, the application of TQM in Kominfo supports SDI policies by elevating the quality of data services and cultivating a resilient organizational culture. Moving forward, efforts should focus on bolstering HR training initiatives and standardizing data management practices to optimize policy implementation and further enhance public service delivery. Policymakers are encouraged to integrate TQM principles into governance strategies, invest in comprehensive training programs, establish uniform data protocols, and foster strategic partnerships to drive sustainable improvements in public service efficiency and effectiveness. Future research directions could explore mixed-method approaches for broader applicability insights and investigate emerging technologies’ role in advancing data management capabilities across diverse organizational settings.

REFERENCES


