

Community E-Readiness in Adopting Technology: Evaluation of the Implementation of Digital Population Identity Application in Ternate City, Indonesia

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ABSTRACT:

The implementation of the Digital Population Identity (IKD) application by the Ternate City Population and Civil Registration Service (DUKCAPIL) is an effort to modernize public administration in supporting the digitalization of population services in Indonesia. This study aims to evaluate the e-readiness of the government and the community in adopting IKD technology, using six main indicators: E-Leadership, Culture, E-Governance, Human Resources, ICT Infrastructure, and Business Climate. A qualitative approach with a descriptive method is used to explore the social phenomena that occur, through in-depth interview techniques, observations, and Focus Group Discussions (FGD). The results of the study show that innovative e-leadership and technology-based service strategies, such as the "Dukcapil Nongki" program and outreach services, have increased the use of IKD by 16% of the total population. However, the transformation of digital culture still faces challenges, especially in the elderly and people who are less familiar with technology. Although the technological infrastructure and basic human resource competencies are adequate, obstacles such as outdated hardware and limited internet access in remote areas affect the effectiveness of IKD implementation. Collaboration between government, society, and the private sector creates a conducive business climate to support the digitalization of public services. This study recommends strengthening human resource training, hardware rejuvenation, and expanding socialization strategies to increase the adoption of IKD. In addition, further studies on the long-term impact of IKD implementation on administrative efficiency and public satisfaction as well as comparative analysis of implementation in other regions are needed to enrich the development of e-governance in Indonesia. These findings are expected to be a guide for the development of technology-based public service innovations in the future.

1. Introduction

Amid the rapid development of information and communication technology (ICT), the world is experiencing very significant changes, especially in aspects of people's daily lives. One of the most noticeable changes is the transformation in the field of communication and access to information. Ease and speed in accessing information and communicating are currently inseparable needs from people's lives. The government, as the organizer of public services, is required to continue to adapt and innovate to provide effective, efficient, and responsive services to the needs of the community. In response to this, the government is trying to take advantage of technological advances by introducing various innovations in public services, to make it easier for the public to access government services more quickly and precisely.

The development of e-government in Indonesia began with the issuance of Presidential Instruction Number 3 of 2003 concerning the National Policy and Strategy for E-Government Development. Since then, efforts to develop electronic-based government have continued, to improve the quality of public services through the use of information technology. Within this framework, all public institutions, the community, and the business world can optimally utilize government information and services anytime

and anywhere. With the development of electronic administration systems, government work processes and management become more efficient, organized, and transparent .

The rapid development of information technology in Indonesia has encouraged the government to adopt various innovations in the public administration sector. One significant effort made by the government is through the development of the Digital Population Identity (IKD) application by the Population and Civil Registration Service (Dukcapil). This innovation is a form of modernization of population administration in Indonesia, which aims to make it easier for the public to access population administration services digitally. With IKD, the public no longer needs to take care of various population documents face-to-face but can access these services through information technology-based applications that can be downloaded on mobile devices.

The Ternate City Government is also not left behind in adopting technology to improve public services. The Ternate City Government has introduced the IKD application as part of an effort to modernize the population administration system in the region. The implementation of the IKD application in Ternate City is expected to provide convenience for the public in accessing population services, such as making KTP, Family Cards, and various other civil certificates, more practically and efficiently.

The main objective of the implementation of IKD is to make it easier for the public to obtain population administration services, as well as reduce the need for time-consuming face-to-face services. However, although the introduction of the IKD application offers various benefits, its implementation does not always run smoothly. Several challenges arise, both in terms of technical readiness and public awareness in utilizing this application. Many people, especially those from the elderly or those who are less familiar with digital technology, still have difficulty using the IKD application. In addition, although this application has been introduced, public awareness of how to use it and its benefits is still limited. Therefore, socialization and education to the public are very important so that they can understand and utilize this application properly.

For this reason, it is necessary to evaluate the implementation of the IKD application in Ternate City, especially regarding the readiness of the government and the community to adopt this technology. One important aspect of this evaluation is the concept of E-Readiness, which includes the readiness of infrastructure, hardware, and software, and the readiness of the community in utilizing information technology in public services. E-Readiness is an important indicator to measure the extent to which the community and government can optimize the use of information technology in improving the quality of public services. The importance of E-Readiness in the implementation of the IKD application can also be seen from several policies that have been issued by the government, such as the Regulation of the Minister of Home Affairs Number 7 of 2019 concerning Online Population Administration Services, which regulates population administration services that can be accessed online. In addition, the Circular of the Director General of Population and Civil Registration of the Ministry of Home Affairs Number 443.1/2978/Dukcapil on March 16, 2020, which regulates population administration services during the Covid-19 pandemic, also accelerates the digitalization process in public services. Thus, E-Readiness is a key factor in the success of the implementation of IKD in Ternate City .

One indicator of the success of the implementation of e-government in Ternate City is the number of IKD application users that continues to grow. Although until now the number of IKD users in Ternate City is still relatively low, with around 2.33% of the total population, the socialization efforts that continue to be carried out by the Population and Civil Registration Service are expected to increase the number of IKD users in the future (Ternate Pemkot, 2023). The public needs to be given a deeper understanding of the benefits and conveniences offered by the IKD application so that they can switch from conventional services to digital services.

However, this process is not without challenges. One of the obstacles often faced is the lack of understanding of the community, especially parents or elderly groups, who are not yet familiar with digital technology. In addition, there are still difficulties in the procedural process that are considered complicated or unclear, which ultimately affects the quality of services provided. Therefore, this study aims to evaluate the readiness of E-Readiness in the implementation of the Digital Population Identity

(IKD) application in Ternate City, with a focus on the readiness of the government and the community to utilize this application.

This study is expected to provide a deeper understanding of the challenges and opportunities in the implementation of IKD, as well as provide recommendations for the Ternate City government to overcome existing obstacles and improve the quality of digital-based public services. Thus, this study can be a reference in efforts to develop better e-government in Indonesia, especially in improving more efficient, transparent, and accountable population administration services.

This study, it is expected to determine the extent of the readiness of the government and the community in using the Digital Population Identity (IKD) application, as well as the factors that influence the success of the implementation of this application. This is important to ensure that the information technology introduced can provide maximum benefits to the community while supporting the creation of a more responsive and efficient government in providing public services.

2. Methods

This research was conducted using a qualitative approach that aims to explore and describe the social phenomena (Nasution, 2024). that occur related to the implementation of the Digital Population Identity (IKD) application at the Ternate City Population and Civil Registration Service. This research was conducted for two months after the proposal seminar, providing enough time for researchers to collect data and analyze it in depth. The research location was chosen at the Ternate City Population and Civil Registration Service because this agency has implemented the IKD application to facilitate the creation of Population Cards (KTP), Family Cards (KK), and Birth Certificates online. Therefore, this study aims to evaluate the readiness of the community and government to adopt the IKD application in Ternate City.

This study uses a qualitative research type with a descriptive approach. The qualitative approach allows researchers to describe complex situations in a social context, while the descriptive approach is used to present the data obtained in an easy-to-understand narrative form (Fiantika Feny, Wasil Mohammad, 2022). The main focus of this study is to evaluate E-Readiness in the implementation of the IKD application at the Ternate City Population and Civil Registration Service. This evaluation was conducted by referring to six E-Readiness indicators consisting of E-Leadership, Culture, E-Governance, Human Resources, ICT Infrastructure, and Business Climate. These six indicators are used to measure the extent to which the government and society are ready to adopt and utilize technology in population administration services. The data sources used in this study consist of primary data and secondary data. Primary data were obtained directly from the research object through observation, interview, and Focus Group Discussion (FGD) techniques. Secondary data were obtained from documents and reports related to the implementation of the IKD application at the Ternate City Population and Civil Registration Service. Research informants consisted of officials and staff at the Population and Civil Registration Service and the community using the IKD application who were selected based on their knowledge and relevance to the research topic. The informants involved in this study were the Head of the Service, Secretary, Head of Data Utilization and Service Innovation, staff managing population administration information, and the community using the IKD application.

To obtain relevant and accurate data, researchers use various data collection techniques, including direct observation of the implementation of the IKD application, in-depth interviews with key informants to explore further information, and Focus Group Discussions (FGD) involving several informants to discuss the implementation of this application together (Saleh, 2017). These techniques are expected to provide a comprehensive understanding of the implementation of the IKD application and the factors that influence it. The collected data will be analyzed using an interactive data analysis model developed by Miles, Huberman, and Saldana in book (Abdussamad Zuchri, 2019). The data analysis process consists of three main stages, namely data condensation, data presentation, and conclusion. Data condensation is carried out by selecting and simplifying relevant data, data presentation aims to organize data that has been selected and simplified, while concluding is done by connecting data to draw findings that can explain the phenomena that occur. Through this process,

researchers can gain a deep understanding of E-Readiness in implementing the Digital Population Identity application in Ternate City.

3. Result and Discussion

E-Leadership

E-leadership is a technology-based leadership style (Jannah et al., 2023). implemented by the Ternate City Population and Civil Registration Service (DUKCAPIL) in supporting the implementation of the Digital Population Identity (IKD) application. Based on the results of interviews, observations, and documentation, it can be seen that DUKCAPIL leaders utilize technology to improve the efficiency and effectiveness of public services. In this context, the e-leadership strategy is implemented with an innovative and comprehensive approach involving various parties, both internal and external. The Ternate City DUKCAPIL leadership, through various strategies, has succeeded in managing the implementation of IKD. The initial stage of implementation involved socialization to internal staff, government agencies, and the community. Informant HS revealed that socialization was carried out in stages, starting from internal, then expanded to ASN, students, and the general public through various forums such as markets and cafes. In addition, the outreach service strategy (JEBOL) was implemented by visiting the community directly in strategic locations, such as sub-districts, markets, refugee camps, and fishermen's groups to facilitate access to IKD services. The DUKCAPIL leadership also implemented various innovations such as the "Dukcapil Nongki" and "Dukcapil Berkah" programs designed to reach millennial groups and increase community participation in the IKD program. In every KTP administration, the community is required to immediately continue the IKD creation process to ensure the achievement of the IKD usage target set by the central government. The results of interviews with the Head of the Service showed that this strategy was effective in increasing the use of IKD. To date, the achievement of IKD usage in Ternate City has reached 16%, making it the highest in North Maluku.

E-leadership in the implementation of IKD is demonstrated through the use of technology for public services, the use of digital applications to improve service accessibility, service innovations such as jemput bola and "Dukcapil Nongki" which expand the reach of services to various levels of society, as well as effective collaboration and communication with various parties, including ASN and the community, through regular meeting forums and coordination. Effective communication and coordination are the keys to the success of IKD implementation. The stages of communication and coordination include direction and socialization from the leadership to staff through regular meetings and internal meetings. Informant MB stated that the leadership always monitors the achievement of IKD usage targets. Coordination is carried out by the secretary as the general coordinator, with the head of the relevant field responsible for carrying out tasks to ensure a clear division of tasks in each field.

The progress of achieving IKD targets is monitored periodically through evaluation meetings. The Head of the Service emphasized the importance of evaluation to ensure that the targets set are achieved. Support between teams is also going well, with the leadership being able to translate ideas into real actions, as expressed by informant RS. Structured communication ensures that each staff understands their roles and responsibilities. The achievement of IKD in Ternate City which reached 16% shows the effectiveness of this approach. Cross-sector coordination and cooperation with external agencies also contributed to the success of the implementation of IKD. The application of e-leadership in the implementation of IKD in Ternate City showed significant results. By utilizing technology and service innovation, DUKCAPIL succeeded in increasing the accessibility of public services and achieving the target of IKD usage. A comprehensive strategy, effective communication, and good coordination between leaders and staff are the keys to the success of this program. With this approach, DUKCAPIL can provide inclusive and efficient services to the community.

Culture

The transformation towards digitalization in population identity management requires significant cultural change. The programs launched aim to change mindsets and increase public awareness of the importance of digitalization. This is in line with Koentjaraningrat's view (1985) which states that

culture is a system of ideas, actions, and human works that are inherited through the learning process. (Koentjaraningrat, 1985) Therefore, digitalization values are instilled as part of a developing work culture, so that society can accept and implement the importance of digitalization effectively.

Culture Digitization of Population and Civil Registration

In the digital era, technology-based population identity management is an urgent need to increase efficiency and access to services. One of the initiatives carried out by the Ternate City Population and Civil Registration Service (Dukcapil) is the implementation of a digital-based system, including the activation of Digital Population Identity (IKD). According to the Head of the Service, FF, all Dukcapil staff are trained to activate IKD through standardized procedures, including barcode verification and selfies. This system allows all staff, not just operators, to serve the public efficiently.

To reach the community, especially the younger generation, Dukcapil initiated the "Si Nongki" program, which socializes the IKD application in hangouts such as cafes. This program is supported by the statement of informant MB who stated that this approach aims to introduce the IKD application to young people who are more familiar with digital technology. In addition, all Dukcapil staff and families are required to have an IKD as a form of role model for the community.

Public Response to the IKD Application

The people of Ternate City gave a positive response to the IKD application. Based on interviews, the public appreciates the ease of access offered by this application. Informant AZ stated that this application makes it easier to manage documents, while MW added that this application is easy to access anytime and anywhere.

For the younger generation, as conveyed by informant ZD, the IKD application is very helpful in accessing important documents such as digital ID cards and family cards. Millennials who are already familiar with technology feel that this application is very relevant to their needs. However, there are still challenges in introducing digital ID cards to people who are less familiar with this technology.

The Dukcapil, as conveyed by the Head of the Service, FF, noted that although 16% of the people of Ternate City have activated IKD, the real benefits of this application will only be fully felt when its use is mandatory, for example in managing NPWP or banking services in 2025. Therefore, wider education and socialization are important to accelerate the adoption of IKD.

Building a Digital Culture

Building a digital culture in the community and within Dukcapil is the main focus of this transformation. The Head of the Service, FF, emphasized that by 2025 all electronic-based services will be integrated with IKD, including NPWP, BPJS, and social assistance services. This requires the community to immediately activate IKD in order to access these services.

Secretary of Dukcapil, HS, highlighted that people are currently more accustomed to using mobile phones for communication and social media purposes. Therefore, a cultural shift is needed so that mobile phones are also used for digitalization and documentation needs. Dukcapil also implements an internal strategy by requiring all employees and their extended families to have an IKD as an initial step in building a digital culture. This is expected to be an example for the community.

According to RS, Head of Data Utilization and Service Innovation, efforts to build a digital culture start from within Dukcapil. Employees are encouraged to invite at least 10 family members to activate the IKD. This approach is expected to create a strong digital ecosystem, both in the work environment and the wider community.

E-Governance

Good and effective governance is an important element in achieving a country's progress. In this digital era, information technology plays a crucial role in accelerating and facilitating various government processes. One of the developing concepts is E-Governance, which refers to the application of digital technology in the government process to improve services to citizens, internal government efficiency, and strengthen democratic participation (Heeks, 2001). This concept leads to increased transparency, efficiency, and public participation in government decision-making, which can ultimately result in faster, more transparent, and more responsive public services.

The Digital Population Identity System (IKD) is one of the implementations of information technology in government that is expected to improve the quality of population administration. The use of IKD has shown transparency in population administration, although the obligation to use it widely has not been enforced. Several agencies, such as airports and several banks, have begun to adopt IKD because of its higher level of security compared to conventional KTPs which are prone to forgery. As conveyed by the Head of the Ternate City Population and Civil Registration Service, Mr. FF, "IKD is more valid than the old KTP because of its high security, and it is more trusted at the airport." However, although the IKD system has been introduced, the implementation process in the field still faces various challenges, especially related to system integration with various other services, such as BPJS, banking, and SIM. According to the Secretary of the Population and Civil Registration Service, HS, "This IKD is a national product that is being updated and integrated with the taxation system, BPJS, banking, and others." With this integration planning, it is hoped that the IKD system can be connected to various public services more efficiently in the future. One of the main challenges faced in the implementation of IKD is accessibility for people who are less familiar with technology, especially for the elderly or those who have limited access to technology. As expressed by one of the community members, MW, "Many elderly people are having difficulties, and because of the limited staff serving them, they feel confused." In dealing with this, the Ternate City Government through the Head of the Population and Civil Registration Service, FF, has planned to provide an emergency service that will help people who need direct data collection at their homes, especially the elderly or those who do not have the necessary technological devices.

The service of government staff in supporting the IKD application also received a positive response from the community, although there is a need to provide clearer guidance, especially for those who are less familiar with the technology. As conveyed by the EA community, "The service is very good, because they help me when I'm confused." However, the MW community added that "the service is good, but still lacking in providing clear directions for people who are not familiar with technology." This shows the importance of further socialization and training for staff and the community to ensure the successful adoption of this technology across all levels of society.

Overall, the implementation of IKD in Ternate City shows significant progress in increasing transparency, efficiency, and security in population administration. However, there are still challenges in terms of understanding and adoption of technology by the community, especially older groups or those who are less familiar with digital devices. Therefore, wider socialization, training, and an increase in the number of officers in the field are needed to help the community access and use the IKD application more easily. With wider integration with various public services and continuous system development, IKD has great potential to make it easier for the community to access various administrative services more efficiently and safely.

Human Resources

In the increasingly developing digital era, human resources (HR) plays a crucial role in supporting organizational progress. Competent and skilled HR in technology is a determining factor in increasing the effectiveness and competitiveness of an organization. The implementation of the Digital Population Identity (IKD) application at the Ternate City Population and Civil Registration Service (Dukcapil) is a real example of how HR competence in dealing with technological developments can influence the success of implementing a digital system in population administration.

According to Gary Dessler (2017), HR covers various aspects, from recruitment, training, and development, to workforce maintenance (Gary, 2017). Effective HR management will create a conducive work environment for organizational productivity and performance. Therefore, in implementing the IKD application, good HR management, with continuous training and competency improvement, is the main factor in achieving success.

Staff Competence in Operating the IKD Application

The IKD application used at the Ternate City Dukcapil is relatively easy to operate. For example, the Head of the Ternate City Population and Civil Registration Service, informant FF, stated that all staff, both PTT and ASN, already have sufficient basic competencies to manage this application. They do

not require advanced technical skills, such as coding skills, because this application only involves simple barcode scanning. Basic skills such as operating computers and mobile devices are sufficient to carry out their duties. This shows that the technical competencies needed in operating the IKD application are basic and more directed at operational skills.

As a supporter, the Secretary of the Population and Civil Registration Service of Ternate City, informant HS, also conveyed the same thing. According to him, this application is easy to learn and only requires basic computer skills. With a structured and uncomplicated process, staff can carry out their duties efficiently without the need for special skills. This opinion is also supported by the Population Administration Information Management Staff, MB, who emphasized that this application is very easy to use, even the public can operate it with a little help from Dukcapil staff.

Training Support and Application Understanding

Structured training and staff understanding of the use and function of the IKD application are also important factors in the success of its management. The Head of the Ternate City Population and Civil Registration Service emphasized that staff at Dukcapil must be able to serve applicants for IKD activation and understand the entire process involved. This shows that the training provided is sufficient to ensure that staff can provide efficient and effective services to the community.

Challenges in Human Resource Management

Although many Dukcapil staff already have the basic competencies required, there are challenges related to the lack of human resources who have special qualifications in the field of Information Technology (IT). As conveyed by the Secretary of the Service, informant HS, IT experts at Dukcapil Ternate City are still limited, and most of the human resources at Dukcapil are non-civil servants who have skills in this field. There is only one civil servant who has qualifications in IT. Therefore, Dukcapil relies on honorary workers to meet the shortage of human resources in the IT field.

This is also supported by the Head of Data Utilization and Service Innovation, a hospital informant, who revealed that human resources in the IT field are still limited, and to meet these needs, they recruit honorary workers. This condition shows that although the IKD application can be run with basic competencies, human resource development in the IT field is still needed to support better technology implementation in the future.

Improving Technical Support for the Community

Most people feel that the IKD application is sufficient and makes it easier for them to access population administration services. However, some people also suggest improving technical support, such as adding human resources or more complete information facilities, such as banners explaining the service flow or video tutorials on how to use the application. This shows that although Dukcapil staff are competent, there is room to improve the quality of service by providing additional information that can help people who are less familiar with the technology.

A person with the initials MW also suggested that human resources could be added or other information facilities, such as banners and video tutorials, could be used to make it easier for all levels of society to use the IKD application. This suggestion is very relevant to ensure that this application can be easily accessed by all levels of society, both those who are familiar with technology and those who are less familiar.

ICT Infrastructure

The availability and quality of information and communication technology (ICT) infrastructure play a very important role in supporting the effectiveness of technology use in an organization. ICT infrastructure includes internet networks, hardware, software, and other technological facilities that support smooth operations and information distribution. According to O'Brien and Marakas (2011), ICT infrastructure includes communication networks, hardware, software, and data systems that are essential in information management. Good and quality infrastructure will ensure the smooth running of applications and technologies, both for the internal interests of the organization and for public services (James, 2011).

In the context of the Digital Population Identity (IKD) application, the quality of adequate ICT infrastructure greatly influences the smooth running of the application. Good infrastructure, such as a

stable internet network and supporting hardware, is needed so that the application can run optimally. Although the ICT infrastructure at the Ternate City Population and Civil Registration Service (Dukcapil) is generally adequate, several challenges need to be overcome to ensure better service quality.

Based on the interview results, there are varying views on the quality of internet access in this area. Several informants revealed network constraints, especially in areas that are difficult to reach by the internet network. Informant AZ stated that around 60% of the constraints experienced were caused by network problems, especially in areas with limited internet access. In addition, informant ZD revealed that the weather, especially during the rainy season, can worsen the internet connection, causing access to be slow.

However, not all informants felt the same constraints. Informants EA and MW, for example, felt that internet access was running smoothly and there were no significant problems in its use. This shows that there are differences in network quality experienced by people in various regions, where areas with easier internet access do not experience significant obstacles in using the IKD application.

In this case, although there are some obstacles related to network stability, in general, the quality of internet access in Ternate City is sufficient to support the use of the IKD application. However, there are still some areas that need improvement, especially in dealing with weather constraints and areas that are difficult to reach by the internet network. Therefore, improving network infrastructure in problematic areas is urgently needed to ensure the smooth use of the application by the public.

Meanwhile, at the Population and Civil Registration Service (Dukcapil) of Ternate City, the role of technology infrastructure is very important to support smooth operations and public services. The infrastructure consisting of internet networks, hardware, software, and other technological facilities must function optimally to ensure effectiveness and efficiency in managing population data. As conveyed by the Head of the Population and Civil Registration Service of Ternate City, FF, the IKD application activation process has run smoothly thanks to the support of simple devices, such as cell phones and adequate internet networks.

However, although the IKD activation process using simpler devices did not encounter major obstacles, FF also mentioned that the hardware used for data recording, such as recording machines that have been used since 2010-2011, needs to be updated to support smooth operations. This shows that although the IKD application can be run with simpler devices, some hardware that is old and no longer following technological developments must be updated to be more effective in supporting future operations.

A similar view was also expressed by the Head of Data Utilization and Service Innovation, RS, who stated that the devices used in the field were not fully in accordance with current operational needs. Although the IKD application has been running smoothly, the lack of devices that meet the needs sometimes hampers service efficiency.

On the other hand, there is also a view that states that the existing technological infrastructure at Dukcapil is quite good. Informant MB, Population Administration Information Management Staff, assessed that the available facilities and infrastructure were sufficient to support operations. However, although most staff felt that the existing facilities were sufficient, there needed to be hardware updates, such as recording machines, to meet the demands of more sophisticated technology and support smooth overall services.

Overall, the ICT infrastructure at Dukcapil Ternate City is sufficient to support operations, especially in terms of software and internet networks used for the IKD activation process. IKD activation can run smoothly using simpler devices, such as mobile phones with a stable internet network. However, the biggest challenge faced is the hardware, especially the recording machines that are more than a decade old. These devices need to be updated immediately to better suit current operational needs and future technological developments.

In addition, although some devices and facilities at Dukcapil are adequate, there is a gap in the provision of more modern devices to support more efficient operations. Therefore, hardware

rejuvenation is a very important step to ensure better infrastructure quality and support smooth Dukcapil operations in the future.

Thus, although the technological infrastructure at Dukcapil Ternate City is quite adequate, steps to rejuvenate more modern hardware that is in accordance with current technological needs will greatly determine smooth operations and improve the quality of services to the community.

Information and Communication Technology (ICT) Infrastructure

Information and Communication Technology (ICT) infrastructure plays a key role in supporting the effectiveness of technology use in various organizations, including in the implementation of digital-based applications such as Digital Population Identity (IKD). The availability and quality of internet networks, hardware, software, and other technological facilities are important factors in ensuring smooth operations and services to the community. O'Brien and Marakas (2011) explain that ICT infrastructure consists of communication networks, hardware, software, and data systems that are essential in managing information and the smooth running of organizational activities.

In terms of implementing the IKD application, the existence of adequate infrastructure greatly influences the smooth operation. The use of applications such as IKD requires support from good ICT infrastructure, including a stable internet network and optimally functioning hardware. At the Ternate City Population and Civil Registration Service (Dukcapil), although the overall ICT infrastructure is quite adequate, several obstacles related to the quality of the network and hardware that has been used for a long time still need serious attention to support smooth service.

Quality of Internet Access in the Community

Based on the results of interviews with various informants from the community, the quality of internet access is one of the factors that influence the smooth use of the IKD application. Several informants revealed obstacles in internet access, especially in areas that are difficult to reach by the network. Informant AZ said that around 60% of the problems faced in using the application were caused by poor network quality, especially in areas with limited internet access. On the other hand, informant ZD added that dependence on the weather, especially the rainy season, affects network stability and slows down access speed.

However, there are also different views from several other informants. Informants EA and MW felt that they did not experience any obstacles in terms of internet access, with MW specifically stating that internet access ran smoothly without any significant obstacles. This view shows a difference in experience regarding network quality in this area, where areas that are easier to reach have no difficulty in using the IKD application.

Overall, although there are several areas that experience network constraints, the quality of internet access in Ternate City is generally sufficient to support the use of the IKD application. Several areas still need improvement, especially in dealing with weather challenges and limited access in remote areas. Therefore, improving network infrastructure is very necessary to ensure smooth use of the application throughout the region.

ICT Infrastructure at the Population and Civil Registration Service (Dukcapil)

The ICT infrastructure at the Population and Civil Registration Service (Dukcapil) of Ternate City also plays an important role in supporting smooth operations and public services. This infrastructure includes various components, ranging from internet networks, hardware, and software, to other supporting facilities. According to the Head of the Ternate City Dukcapil Service, FF, although the IKD application activation process has run smoothly thanks to the support of simple devices, such as mobile phones with adequate internet networks, older hardware, such as recording machines used since 2010-2011, need to be updated to support smooth operations.

A similar view was also expressed by the Head of Data Utilization and Service Innovation, RS, who revealed that the current devices are not fully per the developing operational needs. Although the IKD application has been running smoothly using simple devices, such as mobile phones, the lack of devices that are suitable for operational needs in the field is still a challenge that needs to be overcome. Updating devices that are more modern and by technological developments is an important step to support smooth operations and services to the community.

On the other hand, most Dukcapil staff consider that the existing facilities and infrastructure are sufficient to support operations, as conveyed by informant MB, Population Administration Information Management Staff. However, although the existing infrastructure is adequate, differences of opinion regarding the quality of the devices indicate that there is still a need to rejuvenate hardware that is more in line with the demands of today's technology.

Hardware Challenges and Infrastructure Rejuvenation

One of the biggest challenges in using technology for the IKD application at Dukcapil is outdated hardware. The recording machines currently used are more than a decade old and need to be updated to be more in line with the ever-growing operational needs. The Head of the Ternate City Dukcapil Service stated that although the activation of the IKD application does not require sophisticated devices, hardware such as recording machines needs to be updated immediately to support more efficient and effective operations.

This view is reinforced by the Head of Data Utilization and Service Innovation who stated that the devices in the field do not fully support current operational needs. More modern hardware updates that are by the needs of developing technology are needed so that services can run smoothly and efficiently.

Business Climate

A supportive business environment for the adoption and implementation of technology plays a critical role in driving technological progress in the public sector. Economic conditions, supportive regulations, ease of doing business, and collaboration between government, society, and related institutions influence how quickly technology can be incorporated into business practices and public services.

According to Friedman (2005), business climate refers to the level of ease and support provided by the government and society to the business world. In this context, a conducive business climate greatly influences the implementation of new technologies and innovations that can accelerate the development of the government and business sectors. This study explores how the business climate at the Ternate City Population and Civil Registration Service (Dukcapil) supports the implementation of digital technology, such as Digital Population Identity (IKD), and various innovative programs involving the community and various related parties.

Collaboration Between Stakeholders for the Digitalization of Public Services

One of the main findings from the interview with the Head of the Population and Civil Registration Service, FF, is the importance of collaboration between the government, society, and related institutions in accelerating digitalization. Through the Nongki and Dukcapil Berkah programs, Dukcapil of Ternate City has developed the concept of "outreach services" that involve the community, especially cafe owners, to expand access to population services directly. This collaboration creates a mutually beneficial business environment between the government and the community, where both parties benefit from easy access to services and increased community participation in digitalization programs. The Head of the Service's statement emphasized that the success of implementing technology in the government sector cannot be achieved without cooperation with the Communication and Information Service, which provides network infrastructure, as well as the Social Service and Health Service, which also play a role in supporting the development of digital programs.

Involvement of the Young Generation in Service Innovation

The collaboration also involves various other community groups, including the young generation. Pak RS, Head of Data Utilization and Service Innovation at Dukcapil, explained that activities such as Dukcapil Si Nongki which involve young people, not only aim to introduce population services to the community but also to accelerate digitalization through the active participation of the young generation. This initiative is one example of synergy between the government and the community that reflects the existence of a business climate that supports innovation in technology and public services.

The Role of the Education and Private Sectors in Technology Implementation

The role of the private sector and educational institutions is also very important in creating a business climate that supports technology development. A statement from HS, Secretary of the Population and Civil Registration Service, revealed that institutions such as associations, banks, and campuses also

collaborate in implementing the Digital Population Identity (IKD) program. Several agencies have even made policies to encourage their employees or staff to have IKD, which aims to facilitate access to administration and digitalization of public services. This collaboration shows that cooperation between the public and private sectors, as well as education, can accelerate the adoption of technology in society.

Policy and Infrastructure Support in Supporting Digitalization

In addition, the existence of supportive policies and available infrastructure are important elements in accelerating digitalization in Dukcapil. Policies that make it easier for the public, such as policies related to the use of IKD, as well as the existence of network infrastructure managed by the Communication and Information Service, greatly influence the success of implementing digital technology in government. With support from various sectors, Dukcapil of Ternate City can ensure that the public and employees of related agencies are ready to utilize this technology in their daily lives.

4. Conclusion

This study evaluates the e-readiness of the government and community of Ternate City in adopting the Digital Population Identity (IKD) application based on six main indicators, namely E-Leadership, Culture, E-Governance, Human Resources, ICT Infrastructure, and Business Climate. In the E-Leadership aspect, implementing innovative technology-based leadership by DUKCAPIL Ternate City has succeeded in increasing the use of IKD to 16% of the total population, making it the highest achievement in North Maluku. Strategies such as gradual socialization, outreach programs, and creative initiatives such as "Dukcapil Nongki" show the effectiveness of this approach. In the cultural aspect, digital cultural transformation is still a challenge, especially for people who are less familiar with technology, such as the elderly. However, internal steps such as requiring staff and their families to adopt IKD have helped create a more inclusive digital ecosystem.

In the E-Governance indicator, the implementation of IKD has increased transparency and efficiency in population administration. However, integration with other services, such as BPJS and banking, still needs to be improved. In terms of Human Resources, DUKCAPIL staff generally have adequate basic competencies to manage IKD applications, but the lack of experts in the field of information technology is still an obstacle that must be overcome through more intensive training. ICT infrastructure in Ternate City, although adequate, faces several obstacles such as unstable internet access in remote areas and outdated hardware. Hardware rejuvenation is a priority to ensure smooth service operations. Finally, in the Business Climate indicator, close collaboration between the government, the community, and the private sector, such as banks and educational institutions, has created a business climate that supports the digitalization of public services. Programs involving the younger generation also make a significant contribution to accelerating technology adoption.

This study has several managerial implications. First, strengthening training and developing human resource competencies must be a priority to improve the quality of digital-based services. Second, a more inclusive socialization strategy is needed, especially to reach groups of people who are less exposed to technology. Third, rejuvenating technology infrastructure, including hardware and internet networks, is an important step to support the sustainability of service operations. This study also provides recommendations for further studies, such as examining the long-term impact of IKD implementation on administrative efficiency and public satisfaction, conducting comparative studies of IKD implementation in other regions, and developing a more comprehensive e-readiness evaluation model by considering local factors such as accessibility and the level of digital literacy of the community. With this approach, it is hoped that the application of digital technology in public services can continue to be improved to provide greater benefits to the wider community.

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