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ANALYSIS OF THE DEVELOPMENT OF THE ARCHIVES MANAGEMENT SYSTEM OF THE SHIP OWNED BY THE CLASS II BITUNG PLP BASE

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Abstract

This study aims to analyze the development of a ship archives management system at the Bitung Class II PLP Base and identify inhibiting factors in its development. Ship archives management plays a strategic role in supporting orderly administration, shipping safety, legal compliance, and accountability in the implementation of state duties in the maritime sector. This study uses a qualitative approach with a focus on the development of a ship archives management system at the Bitung Class II PLP Base. Data collection techniques were carried out through observation, interviews, and documentation. Data analysis was conducted descriptively qualitatively through the stages of data reduction, data presentation, and conclusion drawing. The research study uses a public administration perspective and archives management theory that emphasizes the importance of effectiveness, efficiency, accountability, transparency, and archives management based on the archives life cycle. The results of the study indicate that the development of a ship archives management system at the Bitung Class II PLP Base has not been running optimally. The patterns and mechanisms of archives management still tend to be manual, not standardized, and have not fully implemented the complete archives life cycle. The implemented archiving system is also not fully in accordance with national archival regulations and standards, especially in the implementation of SOPs, archive retention schedules, and the use of electronic archives. Furthermore, limited human resources, infrastructure, and the lack of integrated information technology systems contribute to the low effectiveness of archives management. This study also found that factors inhibiting the development of a ship's archives management system include structural and institutional barriers, human resource and organizational culture barriers, and technical and technological barriers.

Keywords : public administration, archive management system, ship archives, accountability, good governance.

INTRODUCTION

The background of this research is based on the understanding that in government organizations, archives have a very strategic position because they function as official sources of information that reflect all state administration activities. As stated in Law Number 43 of 2009 concerning Archives, archives are records of activities or events in various forms and media that are created and received by state institutions in the implementation of community, national, and state life. From a public administration perspective, the author cites that archives “do not only function as passive documentation, but as active instruments that support the planning, implementation, control, and evaluation of public policy (Dwiyanto, 2011)” . Furthermore, archives also have very important legal and administrative functions, because in government practice archives are often used as legal evidence in the resolution of administrative disputes, state financial audits, and inspections by supervisory officials. According to McLeod and Schell (2007), “the quality of organizational decisions is greatly influenced by the quality of the information and documentation systems they have” (pages 7-8). Therefore, a weak archive management system has the potential to cause errors in decision-making, delays in service, and an increased risk of maladministration in public organizations. In the context of government organizations with specific operational characteristics, such as agencies managing maritime transportation and shipping safety, an

archives management system becomes increasingly crucial. The authors explain that “the complexity of operational activities, safety aspects, and the demands of compliance with technical and administrative regulations require orderly, integrated, and easily accessible archives management” (page 8). Failure to manage archives systematically can have a direct impact on the effectiveness of the implementation of the organization's main tasks and functions and has the potential to create administrative and legal risks. From a public administration perspective, archives are not merely the technical activity of storing documents, but rather an integral part of a government management system oriented towards organizational effectiveness and accountability. According to Read and Ginn (2011), “a good archives system enables organizations to systematically manage information so that it can be accessed quickly, accurately, and reliably to support work processes .” Conversely, suboptimal archives management can have negative impacts such as archive disorganization, delays in service delivery, loss of important documents, duplication of work, and difficulties in conducting audits and performance evaluations.

Normatively, the importance of an archives management system in government organizations is also emphasized in various laws and regulations in Indonesia. Law Number 43 of 2009 concerning Archives emphasizes that archives are national assets that must be managed systematically, authentically, and reliably to ensure good governance. In addition, Government Regulation Number 28 of 2012 mandates every state institution and government work unit to implement an archives system that complies with national standards. The author states that "these provisions indicate that an archives management system is not only an administrative need, but also a legal obligation that must be fulfilled by every government organization in order to realize an orderly, accountable, and sustainable government ." However, the maritime and port sectors have different administrative management characteristics compared to other government sectors, especially related to the type and complexity of the archives produced. Archives in this sector include not only general administrative documents, but also technical and operational documents of ships such as ship safety certificates, shipping logbooks, machinery documents, navigation documents, cargo manifests, inspection reports, as well as international legal and compliance documents. The author cites that “according to the International Maritime Organization (IMO), ship documentation is an integral part of the shipping safety system and the supervision of compliance with international standards (IMO, 2014)” The characteristics of maritime archives are also marked by the high frequency of document creation and their direct relationship to ship operational activities, thus demanding a clear classification and arrangement system.

Managing archives on ships faces unique challenges due to the mobile and dynamic nature of ship operations. Ships operate in various waters with varying environmental conditions, putting archives at risk of physical damage due to humidity, temperature, and shocks. Furthermore, limited storage space, archival infrastructure, and limited human resources with archival competencies complicate the management of archives on ships. Research conducted by Ngulube (2015) shows that "organizations with dynamic work environments tend to experience problems in consistent archive management if they are not supported by clear systems and standards ." This condition is highly relevant to the management of ship archives, which requires adaptation of the archival system to the characteristics of field operations. Furthermore, ship archives play a crucial role in supporting shipping safety and operational oversight. Documents such as safety certificates, engine maintenance reports, accident records, and shipping logbooks serve as the basis for ensuring that ships operate in accordance with established safety standards. Law Number 17 of 2008 concerning Shipping stipulates that every ship must meet seaworthiness requirements, which are proven by the completeness and validity of ship documents. Thus, "a good archive management system is an important instrument in supporting the fulfillment of safety aspects, prevention of maritime accidents, and protection of ship crews and the maritime environment."

In the context of public administration, ship archive management also serves as a tool for monitoring and accountability in the implementation of government duties in the maritime sector. Ship archives belonging to government agencies, such as patrol boats or maritime surveillance operational vessels, are part of the state archives that must be managed in accordance with the provisions of Law Number 43 of 2009 concerning Archives. The author asserts that "irregularity in the management of ship archives has the potential to weaken the oversight function, complicate the audit process, and reduce public trust in the performance of government institutions ." KN Gandiwa P.118 is one of the state vessels operated by the Bitung Class II Sea and Coast Guard Base (PLP), which is under the Directorate General of Sea Transportation, Ministry of Transportation of the Republic of Indonesia. This ship functions as a strategic state asset in supporting the task of maintaining shipping safety and security, law enforcement at sea, and monitoring maritime activities in the waters of eastern Indonesia.

The author states that “in the context of public administration, KN Gandiwa P.118 is not only seen as an operational facility, but also as a government organizational unit that produces and manages various important archives as a consequence of the implementation of state functions”. The results of initial observations indicate that the archive management system on board KN Gandiwa P.118 has not been fully standardized. Archive management still tends to be conventional, manual, and dependent on the habits of individual crew members. There are no specific operational guidelines regarding archive classification, archive retention schedules, and mechanisms for storing and maintaining ship archives that are integrated with the parent organization's archive system. Another identified problem is the limited human resources (HR). Ship crews generally have technical and operational backgrounds in shipping, while specialized competencies in the field of archiving are still relatively limited. The absence of qualified archivists or archiving training means that archive management is not yet a top priority in carrying out daily tasks. However, according to Regulation of the Head of the National Archives of the Republic of Indonesia (ANRI) Number 9 of 2018, "effective archive management requires competent human resources who understand archiving principles" (page 14). This limited human resources impacts low awareness of archives and weak control of archives as an instrument of organizational accountability. In terms of facilities and infrastructure, limitations were also found in the form of the lack of dedicated archive rooms and adequate archival equipment, so documents are often stored in unsafe locations and are difficult to retrieve. The author identified that "the development of an archives management system in government organizations essentially faces not only technical challenges, but also structural obstacles originating from policies, internal regulations, and institutions ." From a public administration perspective, organizational structure and policies are key determinants of the successful implementation of an administrative system (Mazmanian & Sabatier, 1983). In practice, archives management is often not a strategic priority in the formulation of internal government policies, including in operational units such as state vessels.

The next obstacle relates to the technical aspects and utilization of information technology in archives management. The development of e-government and the digitalization of public administration demands an archiving system that is able to adapt to information technology, as mandated in the ANRI Regulation on the National Archives Information System (SIKN) and the National Archives Information Network (JIKN). However, in practice, many government organizations still face limitations in infrastructure, hardware, software, and adequate technical support (Yusof & Chell, 2000). In a mobile ship environment, technical challenges are increasingly apparent, ranging from network limitations, data security, to the lack of integration of physical and digital archives. In addition to structural, human resource, and technical factors, organizational culture barriers also play a significant role. Organizational culture in public bureaucracies is often oriented towards short-term task implementation and does not prioritize archives as a strategic organizational asset. The authors cite McLeod and Hare (2010) that "archives are often perceived only as old documents to be stored, rather than as sources of high-value information ." The low commitment of the leadership and the lack of internalization of archival values cause archive management to be inconsistent, even though the principles of good governance demand transparency, accountability, and traceability of information that are highly dependent on a good archival system. Therefore, the author concludes that "the development of an archive management system is not just a technical administrative issue, but a multidimensional problem involving policy structure, human resource capacity, technological support, and organizational culture ." Based on these conditions, research on the analysis of obstacles and solutions to the development of a ship's archive management system on the KN Gandiwa P.118 is very relevant and important, both scientifically to enrich public administration studies in the maritime sector, and practically to provide policy recommendations to create effective, accountable, and sustainable archive governance. Therefore, the objectives of this research are: ....

METHOD

To answer the research problem, the author uses a descriptive qualitative approach, chosen because it is able to provide an in-depth, holistic, and contextual understanding of the phenomenon of ship archive management in a dynamic operational environment. This approach does not focus on hypothesis testing or statistical generalization, but rather on exploring the meaning behind archive management practices that occur in the field. This research was conducted at the Bitung Class II PLP Base, with the research site being the employees and ship officers on the KN Gandiwa P.118, because the ship is an operational asset that produces and manages technical, safety, and administrative archives as part of its maritime guard duties. The researcher acts as a key instrument, while data sources are obtained purposively and snowball from competent informants, such as the Head of the Base, Captain, Markonis, and operational and personnel staff,

supplemented by data on places, events, and supporting documents. The focus of this research is directed at analyzing the development of a ship's archive management system, which is then broken down into three sub-focuses or main indicators. The first indicator is the pattern and mechanism of ship archive management, which includes the stages of creation, recording, classification, storage, maintenance, and retrieval of archives on board the KN Gandiwa P.118. The second indicator is the conformity of the archive system with archive regulations and standards, which measures the extent to which archive management practices are aligned with Law Number 43 of 2009, the regulations of the National Archives of the Republic of Indonesia (ANRI), and national and international archive standards, including the implementation of SOPs, retention schedules, and electronic archive management. The third indicator is the availability and utilization of archival support resources, which assess the quantity and quality of human resources (competence, training), infrastructure (storage space, equipment), and the utilization of information technology (digital systems, data security). In addition, this study also identifies inhibiting factors grouped into structural and institutional barriers, human resource and organizational culture barriers, and technical and technological barriers. Data collection techniques were conducted in three ways: structured interviews using interview guidelines developed based on the research sub-focus; field observations of work processes and the physical conditions of archive storage on board ships; and documentation including regulations, internal records, photographs, and voice recordings. Data analysis employed the interactive model of Miles, Huberman, and Saldaña, which consists of four stages: data collection, data condensation (selection and simplification), data presentation in narrative and tabular form, and conclusion drawing and verification. To ensure data validity, this study applied four criteria: credibility (internal validity) through source triangulation, peer debriefing, and member checks; dependability to test the consistency of results; transferability so that results can be applied in similar contexts; and confirmability through audit trials to ensure that the findings truly correspond to the real situation in the field. With this systematic and comprehensive methodological approach, the study is expected to produce valid, reliable, and useful findings for the development of government ship archive management systems in the maritime sector.

DISCUSSION

1. Analysis of the Development of the Ship Archives Management System Owned by the Bitung Class II PLP Base

1.1 Ship Archives Management Patterns and Mechanisms

The discussion on the patterns and mechanisms of ship archive management in the development of the ship archive management system belonging to the Bitung Class II PLP Base, specifically on the KN Gandiwa P.118, shows that conceptually it has a framework that includes the stages of collection, classification, recording, and storage of archives. However, the research findings reveal that the implementation of these patterns and mechanisms has not been running optimally. Based on an interview with informant JS, it was stated that "the ship archive management pattern that we currently apply basically starts from the process of collecting documents generated from each ship's operational activities, but in practice this collection process is still not running optimally because there are often delays in document submission, and there are even some archives that are not immediately documented properly" (page 81). This condition indicates that although the workflow has been in place, its implementation still depends on the level of awareness and discipline of each party.

From the perspective of the records life cycle theory proposed by Shepherd and Yeo (2003), archives management should be carried out systematically from the creation stage to disposition. Each stage in the archives life cycle must be supported by clear procedures so that the archives can be managed effectively. However, research findings indicate that the stages of archive creation and use in the ship environment do not follow consistent standards. Irregularities in recording and classification indicate that the initial stages of the archives life cycle have not been managed optimally, which then impacts subsequent stages such as storage and retrieval of archives. This is reinforced by the statement of informant BS that "in the process of classifying archives, we actually have general guidelines, but implementation in the field is not fully consistent because there is no detailed standard operating procedure that is evenly understood by all officers" (pages 81-82).

Furthermore, the international standard ISO 15489 emphasizes that an archives management system must guarantee the authenticity, reliability, integrity, and usability of archives. In this context, the problems with manual recording and indexing systems that are not yet digitally integrated indicate weaknesses in the principle of usability. Informant JN stated that "the current recording and indexing mechanism still uses two methods, namely manual and digital. However, the digital system used is still simple and not yet integrated into a complete archives management system. This causes archive data to be scattered across several devices and does not have a centralized database, so the

archive search process is often time-consuming and inefficient" (page 82). Archives that are difficult to find or access quickly will lose their practical value to the organization. Furthermore , system limitations also have the potential to affect the integrity of archives, especially in terms of access control and information security.

From a public administration perspective, as stated by Rosenbloom (2015), information and documentation systems are key factors in supporting the effective performance of government organizations. Archives, as part of this information system, should be able to provide accurate and timely data to support decision-making. However, the limited use of information technology in managing ship archives indicates that the archiving system is not yet capable of functioning as a reliable information infrastructure. This results in slow administrative processes and the potential for errors in decision-making. This problem is further reinforced by the finding that there is a lack of integration of archiving systems between ships and land, as well as the suboptimal use of digital technology. This is in line with Rahman's (2020) finding that limited storage space and the lack of system integration are major obstacles to archive management in the maritime transportation sector. Thus, it can be concluded that the patterns and mechanisms for managing ship archives at the Bitung Class II PLP Base still do not fully reflect the principles, standards, and concepts of ideal archives management. This gap between theory and practice indicates the need to strengthen the archival system through standardization of procedures, digitization of archives, increasing human resource capacity, and providing adequate infrastructure. These efforts are crucial to ensure that the ship archives management system can function effectively in supporting organizational performance, public accountability, and the realization of good governance in the maritime sector.

1.2. Compliance of the Archiving System with Archival Regulations and Standards

The discussion on the compliance of the archiving system with archival regulations and standards shows that a clear regulatory framework is in place, but its implementation in the field still faces various obstacles. Based on the results of an interview with informant JS, it was stated that "in general, the level of employee understanding of archival regulations and standards already exists, but is not evenly distributed across all departments. Some employees who have direct duties in the field of archival tend to have a better understanding of the applicable regulations, but for other employees who do not specifically handle archives, their understanding is still limited" (page 91). This condition causes the implementation of archive management to be inconsistent and often does not fully refer to applicable provisions. As a result, the standards that should serve as shared guidelines have not been able to be fully internalized in daily work practices.

From the perspective of institutional theory proposed by W. Richard Scott (2014), organizational institutions are influenced by three main elements: regulatory, normative, and cultural-cognitive. The regulatory element relates to organizational rules and policies, the normative element relates to work values and standards, while the cultural-cognitive element relates to mindsets and habits within the organization. In the context of this research, the unequal understanding of employees regarding archival regulations indicates that the regulatory and normative aspects have not been fully internalized. Furthermore, conventional work habits also reflect obstacles in the cultural-cognitive aspect. This is reinforced by informant BS's statement that "in terms of implementation, we have attempted to refer to national archival regulations and standards, but the implementation has not been fully optimal because there are still several procedures that have not been implemented comprehensively. For example, in the management of electronic archives, we still do not have a system that truly meets standards" (page 91).

Furthermore, the suboptimal alignment of archival systems and procedures with national standards is also evident in the lack of a comprehensive Standard Operating Procedure (SOP) and the suboptimal management of electronic archives. Informant AK stated that “in general, the archival systems and procedures we implement do not fully comply with national archival regulations and standards. This discrepancy is evident in the absence of a comprehensive and structured standard operating procedure (SOP) in accordance with national regulations, so that implementation in the field is still general and not yet uniform” (page 92). The absence of a clear and structured SOP means that each work unit has the potential to implement different archive management methods, thus creating irregularities in the archival system. On the other hand, the lack of a systematic implementation of an archive retention schedule indicates that archive management does not fully follow the archive life cycle as stipulated in archival regulations, which results in archive accumulation and difficulties in archive control. From the perspective of Law Number 43 of 2009 concerning Archives, every government agency is required to organize archives in an orderly and systematic manner. However, research findings indicate that the implementation of this regulation in the ship environment is still not optimal. This is in line

with the findings of Sugiarto and Wahyono (2015) who stated that many government agencies face obstacles in implementing archival standards, primarily due to limited resources and low awareness of archives. Limitations in aspects supporting implementation, such as inadequate human resource capacity, minimal archival facilities and infrastructure, and less than optimal use of information technology, further widen the gap between regulations and practice in the field. This condition is exacerbated by weak monitoring and evaluation mechanisms, resulting in the lack of effective controls to ensure that archives management is carried out in accordance with established provisions. Thus, the compliance of the archival system with archival regulations and standards at the Bitung Class II PLP Base still faces multidimensional challenges. The problems lie not only in technical aspects but also encompass institutional aspects, human resources, and the oversight system. Therefore, comprehensive improvement efforts are needed through increasing employee understanding, developing standardized SOPs, strengthening archival infrastructure, and optimizing oversight and evaluation mechanisms to minimize the gap between regulations and practice.

4.3.1.3 Availability and Utilization of Archival Support Resources

The discussion on the availability and utilization of archival support resources shows that the success of an archival system is largely determined by the readiness of the organization's resources. Based on the research results, from a human resources perspective, there are still limitations in the number and competence of employees in the archival field. Informant JS stated that "in general, the condition of human resources at the Bitung Class II Sea and Coast Guard Base still faces limitations in terms of the number of personnel available to support all patrol operations. With the vast waters that must be monitored, the number of available personnel is sometimes not entirely sufficient" (page 123). This condition has a direct impact on the quality of archive management, because the employees on duty often do not have special expertise in the field of archival and must also carry out other administrative work. This is in line with the human resource management theory of Gary Dessler (2013) which states that employee competence greatly determines the effectiveness of work implementation.

In terms of facilities and infrastructure, this study found that the availability of archive storage facilities is still limited and does not meet standards. Informant BS stated that "in general, the availability of infrastructure for patrol operations at the Bitung Class II PLP Base is still quite limited, especially when compared to the vast area of water that must be monitored. The available patrol boats are not yet fully sufficient to reach all pollution-prone points simultaneously" (page 124). In the context of archiving, storage facilities that do not meet standards make archives vulnerable to damage and loss. Furthermore, the still simple and unintegrated information technology infrastructure also hinders modern archive management. Informant KR added that "in terms of condition, several facilities such as patrol boats and operational support equipment still require routine maintenance to be used optimally. Sometimes there are technical obstacles such as minor damage or limited pollution detection equipment that make the monitoring process in the field less effective" (page 124). This condition shows that adequate facility support is an important prerequisite in creating an effective and sustainable archiving system.

From the perspective of the management information systems theory proposed by Laudon and Laudon (2018), a management information system is a combination of technology, work procedures, and human resources used to manage information effectively within an organization. Limited technological facilities and infrastructure, such as computer devices, digital archiving applications, information system networks, and archive data security and backup systems, are obstacles to the optimal implementation of an information technology-based archives management system. This is reinforced by informant AK's statement that "in its implementation in the field, there are still obstacles in the form of incomplete integration of information systems between agencies and between work units. Data needed to support patrols is not always available in real time, so officers in the field still often rely on direct communication or manual reports" (page 125). As a result, the use of information technology in archives management has not been maximized, and many administrative processes are still carried out manually or semi-manually.

Furthermore, limited technical skills of employees in operating the digital archiving system also pose a barrier. Informant JS highlighted that “another obstacle faced is limited technological infrastructure, such as unstable communication networks in some water areas and supporting equipment that is not yet fully modern” (page 126). The lack of training and competency development in the field of information technology has slowed the adaptation process to archive digitization. Thus, the availability and utilization of supporting archiving resources at the Bitung Class II PLP Base still do not fully support the development of an optimal archives management system. Strengthening human

resources, providing standard infrastructure, and developing an information technology-based archiving system are strategic steps that must be taken.

2. Inhibiting Factors in the Development of the Ship Archives Management System Owned by the Bitung Class II PLP Base

2.1. Structural and Institutional Barriers

The structural and institutional sub-focus of the research indicates that bureaucratic structure and organizational governance have a significant influence on the effectiveness of ship archive management. Based on the research results, the bureaucratic structure is still hierarchical, causing the administrative process of archive management to go through long and tiered stages. Informant JS stated that "the organizational structure within the Bitung Class II PLP Base still uses a tiered coordination pattern, so that the process of managing ship archives often requires quite a long time. Each document must go through several stages of disposition and approval before it can be archived or reused" (pages 106-107). This condition makes the process of providing and managing ship documents less effective and requires a relatively long time. In addition, coordination between work units that is not well integrated causes a lack of synchronization in document management.

From the perspective of Max Weber's (1947) bureaucratic theory, organizations are built through hierarchical structures, clear division of tasks, formal authority, and orderly work procedures to create organizational efficiency and effectiveness. However, in practice, bureaucracy that is too long and formalistic often creates organizational rigidity, slow administrative processes, and complex coordination. This condition is in line with research results that show that the division of tasks between departments is not fully clear, resulting in sometimes overlapping work in archive management. Informant BS added that "in the development of the ship's archive management system, the organizational structure also affects the coordination process between work units. Currently, there are still obstacles in data synchronization and information exchange between departments because each unit has different administrative tasks" (page 107).

From an institutional perspective, the research findings indicate that organizational support for the development of a ship archiving management system remains limited. Informant AK stated that “the most significant institutional obstacle is the lack of optimal coordination between work units within the Bitung Class II PLP Base. Each division has its own administrative needs and mechanisms, resulting in frequent discrepancies in the storage and management of ship documents. Furthermore, the absence of an integrated coordination system results in slow data and document exchange” (pages 107-108). This is evident in the lack of optimal organizational policies specifically supporting the modernization of the ship archiving system, whether in the form of internal regulations, provision of infrastructure, or strengthening of human resources. Limited facilities such as storage space, information technology devices, and the lack of an integrated digital archiving system mean that archive management is still largely manual or semi-digital.

These structural and institutional issues directly impact the effectiveness of ship archive management. Informant JS explained that “structural and institutional barriers significantly impact the effectiveness of ship archive management within the Bitung Class II PLP Base. The hierarchical administrative process and suboptimal coordination between work units often result in delays in searching for and providing ship documents. Furthermore, manual archive management increases the risk of document loss, damage, or accumulation” (page 108). These issues not only impact the organization’s administrative order but also the quality of administrative services and the smooth operation of ships. Therefore, developing a ship archive management system requires not only technological support but also a more effective strengthening of the organizational and institutional structure.

2.2 Human Resources and Organizational Culture Barriers

The discussion on human resource and organizational culture barriers shows that the quality of the apparatus and organizational work culture have a very large influence on the effectiveness of ship archive management. Based on the research results, the competence of human resources in archive management is still limited, especially in the mastery of information technology and digital archiving systems. Informant JS stated that "the competence of human resources in managing the ship archive management system at the Bitung Class II PLP Base still needs to be improved, especially in the mastery of information technology and digital archiving systems. Currently, some employees already understand the administrative management of archives, but not all have the technical ability to operate a modern archiving system" (page 113). This condition causes the ship document management process to still be largely done manually so that the

effectiveness and efficiency of archiving are not running optimally. From the perspective of Gary Dessler's (2013) human resource development theory, developing employee competencies through education and training is crucial for improving an organization's ability to cope with technological change and modern work demands. However, this study found that the lack of training and capacity building for staff constitutes a serious obstacle. Informant JN stated that "in supporting the development of the ship's archives management system, employee competencies are actually quite helpful in basic administrative aspects, but there are still limitations in terms of training and competency development. Some employees have never received specific training related to archiving or document digitization, so their understanding of modern archiving systems remains limited" (page 113).

As a result, the adaptation process to the use of electronic archiving systems has been slow and has not been implemented comprehensively. In terms of organizational culture, the research results indicate that the work culture within the organization still tends to maintain conventional administrative systems. Informant JS explained that "the organizational culture within the Bitung Class II PLP Base still significantly influences the implementation of the ship's archives management system, particularly in terms of administrative discipline. There are still employees who are inconsistent in organizing and storing documents according to established procedures. In addition, the habit of using manual systems in archives management often makes the administrative process slow and less orderly" (page 114). Some employees still feel more comfortable using manual methods than digital-based systems, so the implementation of modern archiving systems often faces resistance. This is in line with the organizational culture theory proposed by Edgar H. Schein (2010), which explains that organizational culture is a pattern of values, beliefs, habits, and work methods that develop within an organization and influence the behavior of organizational members. Resistance to archive digitization and the lack of employee awareness of the importance of orderly administration indicate the existence of cultural barriers in the process of organizational change.

Informant JN added that “in terms of work coordination and acceptance of the digitalization of the archives system, there are still some employees who are not fully ready for changes to the technology-based work system. Some employees are more comfortable using old work methods because they are accustomed to manual archive management. As a result, the implementation of the digital archiving system often faces obstacles in the form of a lack of participation and adaptation from organizational officials” (page 115). This condition can also be linked to Kurt Lewin's (1951) theory of organizational change, which explains that organizational change requires a process of unfreezing, changing, and refreezing so that organizational members can adapt to the new system. Nevertheless, the organization has made efforts to build a work culture that is more open to innovation through coaching, internal coordination, and increasing employee understanding of the importance of modernizing the archives system. However, these efforts still need to be strengthened so that the transformation of the ship's archives management system can run more effectively and sustainably.

2.3 Technical and Technological Barriers

The discussion on technical and technological barriers shows that technical aspects and the use of information technology have a significant influence on the effectiveness of ship archive management. Based on the research results, the archive management system is still dominated by manual or semi-manual methods, causing the process of recording, storing, and tracking ship documents to not run effectively and efficiently. Informant JN stated that "technically, the management of ship archives in the Bitung Class II PLP Base environment is still not running optimally because most of the archive administration processes are still carried out manually. Ship documents are still largely stored in physical form so that the process of searching, organizing, and tracking archives requires quite a long time" (page 121). Archive management that still relies on physical documents makes the administrative process take longer, especially when documents are needed for operational purposes or administrative services.

From the perspective of the organizational technology theory proposed by Joan Woodward (1965), the use of technology in organizations has an influence on the effectiveness of work implementation and the achievement of organizational goals. The better the technological support an organization has, the higher the effectiveness of the work system that can be produced. However, this study found limitations in technological facilities and infrastructure. Informant JS stated that "in developing a ship archive management system in the Bitung Class II PLP Base environment, the most felt technological obstacle is the limited supporting facilities and infrastructure. The number of computer devices and data storage facilities is still limited so that it is not able to support the implementation of a digital archiving system optimally. In addition, to date there is no integrated archiving application specifically for ship document management" (page 122). These limited facilities mean that the archive digitization process cannot be implemented comprehensively

and document management is still largely carried out conventionally. Furthermore, the suboptimal integration of information systems and limited employee skills in operating digital archiving technology also hamper the modernization process of the archiving system. Informant AK added that "in addition to limited facilities, the information system network and archival data security also remain obstacles in the development of the archival system. Unstable internet network connections often affect the processing and exchange of data between work units. On the other hand, the backup system and security of digital archival data are also not running optimally so there is still a risk of data loss or damage if there is a technical problem with the device" (page 122). This condition indicates that suboptimal technological support is one of the main factors hindering the modernization of the ship's archival system.

In terms of employee technical capabilities, there are still obstacles in operating the digital-based archiving system. Informant JS stated that "the application of information technology in the ship archive management system at the Bitung Class II PLP Base is currently not running optimally because most archive management is still done manually. While computers are already used in document administration processes, they are not yet supported by an integrated digital archiving system" (pages 122-123). Informant FM added that "in terms of employee capabilities, there are still several obstacles in operating the digital-based archiving system. Not all employees have adequate technical capabilities in the use of information technology, especially related to electronic archive management and digital administration applications. In addition, training on technology-based archiving systems is still limited, so the process of employee adaptation to archive digitization is quite slow" (page 123). This is in line with the diffusion of innovation theory by Everett M. Rogers (2003), which explains that the process of innovation acceptance in an organization is influenced by the level of individual readiness, technological characteristics, and the organizational environment.

Thus, the development of a ship archives management system within the Bitung Class II PLP Base environment requires integrated improvements between administrative systems, technological support, and increased employee capacity. The organization needs to develop an integrated digital archiving system across work units so that the process of storing, searching, and managing ship documents can be carried out more quickly, safely, and efficiently. In addition, providing adequate information technology facilities, an archive data security system, and technical training for employees are important steps in supporting the transformation of archives management towards a more modern system. Strengthening the technical and technological aspects within the Bitung Class II PLP Base environment is a strategic need in creating an effective, integrated ship archives management system that is able to support the quality of administrative and operational services of the organization.

CONCLUSION

Based on the discussion above, the following conclusions can be drawn:

1. Analysis of the Development of the Ship Archives Management System of the Class II Bitung PLP Base. Based on the research results, the development of the ship archives management system of the Class II Bitung PLP Base has not been running optimally. This is evident from the pattern and mechanism of archive management which is still manual, not standardized, and has not fully implemented the archive life cycle as a whole. In addition, the implemented archiving system is also not fully in accordance with national archiving regulations and standards, especially in the application of SOPs, archive retention schedules, and the use of electronic archives. From the aspect of supporting resources, limited human resource competencies, infrastructure facilities, and the lack of integration of information technology also affect the effectiveness of ship archives management. Thus, the development of the ship archives management system still requires administrative, regulatory, and technological improvements to create an effective, orderly, and accountable archiving system.
2. Factors Inhibiting the Development of a Ship Archives Management System at the Class II Bitung PLP Base. Inhibiting factors in the development of a ship archives management system include structural and institutional barriers, human resource and organizational culture barriers, and technical and technological barriers. Structural barriers are evident in the unclear division of tasks and the suboptimal institutional structure. Archiving. Human resource and organizational culture barriers are evident in the low competency of employees in the field of archiving and the lack of a culture of archives awareness within the organization. Meanwhile, technical and technological barriers are demonstrated by limited archive storage facilities, suboptimal archive digitization, and the lack of integration of archival information systems.

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