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Efficiency in Human Resource Management through the Digital System “Satu Kemenkeu”: An Evaluation of Automation within the Ministry of Finance in Indonesia

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ABSTRACT

This study aims to evaluate the effectiveness of the digital automation system "Satu Kemenkeu" in enhancing human resource management (HRM) efficiency and productivity within the Ministry of Finance. Employing a descriptive qualitative approach, data were collected through in-depth interviews, observations, and document analysis involving 18 informants from various hierarchical levels. The findings indicate that the implementation of the system has reduced administrative service time by up to 43.7%, increased daily data entry volume from 24 to 47 entries per officer, and accelerated performance reporting by 53%. Moreover, the application provides real-time data access and incorporates performance evaluation features based on objective indicators, strengthening managerial decision-making processes. Nonetheless, challenges such as digital literacy gaps, reliance on central technical units, and limited regional infrastructure continue to hinder the system's optimal performance. The study recommends comprehensive user training strategies, reinforcement of local technical support, and the development of data-driven feedback mechanisms to ensure the sustainability of digital transformation in public sector HRM.

Keywords: Automation, HR Efficiency, Bureaucratic Digitalization, Satu Kemenkeu, Ministry of Finance.

JEL Code: H83, J24, O33, M15.

I. Introduction

In the rapidly evolving digital transformation era, effectiveness and efficiency in human resource management (HRM) within the public sector have become top priorities in realizing modern and adaptive governance. One of the strategic innovations undertaken by the Ministry of Finance of the Republic of Indonesia is implementing the "Satu Kemenkeu" application—an integrated digital platform designed to support a more efficient, transparent, and accountable HRM system. This application aims to unify previously fragmented information systems and integrate the entire HR process into a centralized and automated system, from recruitment and career development to training and performance evaluation. In practice, this automation is expected to simplify administrative procedures, reduce duplication of work, and accelerate data-driven managerial decision-making through real-time information access. However, in its implementation, the Ministry of Finance faces various structural and technical challenges in managing human resources, including disparities in digital capacity among units, insufficient cross-application system



integration, and resistance to technological change. The fragmentation of information systems, reliance on manual administrative tasks, and limited technical resources have resulted in inefficiencies and delays in personnel services and decision-making processes. These issues highlight the need for a comprehensive evaluation of the effectiveness of the implemented digital system.

Based on data collected by the researcher from each Echelon I unit responsible for the development of the three applications, a summary of the budget allocated for the construction and development of HR information management systems at the Ministry of Finance over the past three years is presented in the following simplified table 1.

Table 1. Budget Allocation for Four Application Systems at the Ministry of Finance

Application (Developing Echelon I Unit)	Annual Budget Allocation (in Rupiah)		
	2022	2023	2024
SIKKA (Direktorat Jenderal Pajak)	200.000.000	280.000.000	345.000.000
CEHRIS (Direktorat Jenderal Bea & Cukai)	176.500.000	220.000.000	250.000.000
KLC (Badan Pendidikan & Pelatihan Keuangan)	155.000.000	265.000.000	320.000.000
Satu Kemenkeu (Biro SDM)	278.400.000	325.050.000	422.645.000

Source: POK Bagian SDM KI BPPK, Sekditjen DJP & DJBC

Over the past three years, the budget allocation data for application development at the Ministry of Finance shows that the most significant investment has been allocated to the Satu Kemenkeu application. In 2022, the allocated budget for this application amounted to IDR 278,400,000, which increased to IDR 325,050,000 in 2023 and further rose to IDR 422,645,000 in 2024. These figures position Satu Kemenkeu as the most heavily funded system compared to the other three major applications—SIKKA, CEHRIS, and KLC—each developed by respective vertical units within the Ministry of Finance. This increasing budget trend reflects the government's commitment to advancing digital transformation in public financial administration, particularly improving HRM efficiency through an integrated and digitized system. Nevertheless, the increase in budget allocation and technological development does not always correspond with improved efficiency and quality in HR management. A critical issue in implementing Satu Kemenkeu is the persistent fragmentation of information systems across Echelon I units. Currently, in addition to Satu Kemenkeu, directorates such as the Directorate General of Taxes (DGT), the Directorate General of Customs and Excise (DGCE), and the Financial Education and Training Agency (FETA) continue to operate their applications, which are not yet fully integrated. This condition leads to data redundancy, process inconsistencies, and operational complexity, thereby impacting the effectiveness of internal services and inter-unit coordination.

Moreover, implementing technology without adequate human resource preparedness poses additional challenges. According to data from the HRIS of the Ministry of Finance's HR Bureau, the development of Satu Kemenkeu is currently managed by a team consisting of 2 Echelon II officials, 2 Echelon III officials, 5 Echelon IV officials, and four functional IT personnel in the HR Bureau, supported by 14 IT specialists from PUSINTEK and 56 administrative staff. While the quantity of personnel is sufficient, there is a notable disparity in the quality and distribution of competencies between the HR Bureau, the primary user, and PUSINTEK, the technical support provider. High dependency on technical units hampers the ability to respond swiftly and independently to system disruptions and application updates, ultimately affecting service delivery and operational efficiency. From a regulatory perspective, the digital transformation of HRM within the Ministry of Finance is supported by the Minister of Finance Regulation No. 133 of 2022, which emphasizes the role of Information and Communication Technology (ICT) as the backbone of bureaucratic transformation. However, the effectiveness of ICT relies heavily on information security and the digital literacy of end-users. In this regard, the National Civil Service Agency (BKN) has also highlighted the importance of protecting civil servant data, given the growing risks of cybercrime targeting government information systems. Therefore, cybersecurity awareness and regulatory reinforcement are essential strategies to ensure the sustainability of

digital information systems, including Satu Kemenkeu. Data breaches lead to systemic damage and erode public trust in government institutions, making data integrity and security in HR systems a non-negotiable foundation in automating civil service management. It is crucial to note that HRM in the Ministry of Finance encompasses administrative functions and strategic aspects that support overall organizational performance. In line with Law No. 20 of 2023 on Civil Servants (ASN), effective civil service management must be based on integrated digital technology to ensure quality public service and bureaucratic efficiency. Within this framework, automation through Satu Kemenkeu is expected to serve as a tool for monitoring performance, evaluating competencies, and facilitating career development transparently and objectively. However, in practice, many employees are still unfamiliar with the core features of the Satu Kemenkeu application. Limited training, suboptimal user interfaces, and underutilized analytics functions present additional obstacles. These issues diminish the added value of the automation system and even create resistance among operational-level users. Furthermore, the parallel development of other HR applications across units may lead to budget inefficiencies. According to the 2022–2024 Budget Implementation List (POK), the total allocation for the four HR applications at the Ministry of Finance has exceeded IDR 3 billion over the past three years. It will likely continue increasing without a clear system consolidation strategy.

Another challenge lies in standardizing data across working units. Differences in data formats, standard operating procedures (SOPs), and performance indicators used by various directorates hinder uniform system operations. Integration processes thus become more complex, requiring additional time and resources. On the other hand, the Satu Kemenkeu dashboard is intended to enable leadership to monitor HR performance directly and formulate more accurate development strategies. However, if the presented data are not fully standardized, the resulting analysis lacks accuracy and cannot effectively inform policy decisions.

Given these challenges and realities, there is an urgent need for a comprehensive evaluation of the impact of Satu Kemenkeu automation—covering aspects such as operational efficiency, human resource readiness, application feature utilization, and its contribution to institutional performance. This evaluation is crucial because HRM efficiency speeds up processes, improves decision quality, reduces costs, and enhances team member satisfaction. From a strategic planning perspective, the principle of "Begin with the End in Mind," articulated by Covey (1989), becomes highly relevant. Clarity of the end goal—improving the quality of HRM—should guide the system's planning, implementation, and evaluation. Significant technological investments may yield suboptimal results and even user frustration without well-planned strategies considering technical, budgetary, training, and security aspects. Therefore, this study aims to address a fundamental question: Has the automation of Satu Kemenkeu genuinely improved HRM efficiency at the Ministry of Finance? In addition, the study will explore the positive and negative impacts of the system and formulate strategic recommendations to refine and optimize the platform in alignment with user needs and institutional objectives.

1. What are the impacts of the Satu Kemenkeu application on the efficiency and productivity of human resource management within the Ministry of Finance?
2. What are the main challenges encountered in implementing the Satu Kemenkeu application, and what strategies can be adopted to overcome them?
3. How can automation through a centralized platform at the Ministry of Finance enhance the effectiveness of data management and HRM performance?

This impact evaluation is crucial not only for the Ministry of Finance as the central institution in public financial reform, but also as a Source for other ministries and government agencies seeking to implement similar systems. Therefore, this study is both technical-informative and strategic-political, supporting the broader national bureaucratic reform agenda through efficiency- and data integrity-driven digitalization. The structure of this article is organized systematically, beginning with a literature review that outlines theories on organizational effectiveness and information technology adoption, followed by a description of the

descriptive qualitative research method, presentation of field findings, analytical discussion, and concluding with strategic policy recommendations.

II. Literature Review and Hypothesis Development

The Satu Kemenkeu application is an integrated digital platform developed by the Human Resources Bureau of the Ministry of Finance to consolidate various HRM applications and processes into a centralized system. This application supports operational efficiency, data accuracy, and real-time information-based decision-making across the Ministry of Finance. This study evaluates the impact of the automation introduced through the Satu Kemenkeu application on the efficiency of human resource management (HRM) within the Ministry of Finance. Accordingly, the literature review explores three key domains: organizational effectiveness and information technology, HRM in public sector organizations, and the influence of application-based information systems on organizational efficiency. The research integrates organizational effectiveness theory and technology adoption theory within the context of public bureaucracy. The conceptual model is supported by the Technology Acceptance Model (TAM) proposed by Davis (1989), which asserts that users' acceptance of a technology system is significantly influenced by their perceptions of its ease of use and perceived usefulness.

2.1. Organizational Effectiveness and Information Technology

Organizational effectiveness refers to an organization's ability to achieve its goals efficiently and sustainably (Robbins & Judge, 2017). In the digital era, effectiveness also includes the capacity to utilize information systems as decision-making tools and to streamline work processes. Robbins & Judge (2017) identify five key aspects in defining "effectiveness":

1. Goals

Goals serve as the starting point for achieving effectiveness. Clear and specific objectives are fundamental, as without them, it is difficult to determine what should be achieved or how success should be measured. Goals must be measurable, realistic, and time-bound. Reasonable goals provide direction and focus for actions, helping motivate and guide individuals and organizations. An example of a clear goal would be to increase sales by 20% within six months or to improve customer satisfaction to 90% within one year.

2. Actions or Processes

Once goals are defined, the next step involves designing and implementing actions or processes to help achieve them. These may include various activities, strategies, and methodologies planned to yield the desired results. Effectiveness is assessed by how well these actions meet the predetermined goals. For instance, to increase sales, actions might include launching a new marketing campaign, training sales staff, or introducing new products. Each action must be carefully planned and executed to ensure success.

3. Results

Results are the output or outcomes derived from the actions or processes undertaken. These outcomes are measured to determine whether the goals have been achieved. Results may include increased sales, higher customer satisfaction, cost reductions, or improved productivity. Measuring results involves collecting and analyzing data to determine whether the actions produced the intended change. For example, if the goal is to increase sales by 20%, the result will be measured by comparing sales figures before and after the interventions. Desired results should be concrete and measurable to allow for practical evaluation.

4. Evaluation and Adjustment

Robbins & Judge (2017) describe five core components of organizational effectiveness: clear goals, operational actions, measurable outcomes, and continuous evaluation and adjustment as part of a

feedback loop. Evaluation and adjustment represent reflective and adaptive efforts within the management cycle. While specific studies evaluating individual programs or activities remain limited, existing research has identified several factors presumed to influence organizational effectiveness. Steers (1985), as cited in Islamy et al. (2020), proposed that the primary variables influencing effectiveness can generally be classified into four key organizational characteristics, as presented in Table 2.

Table 2. Four Key Characteristics of Organizational Effectiveness

Organizational Characteristics	Environmental Characteristics	team member Characteristics	Management Policies and Practices
Structure <ul style="list-style-type: none"> • Decentralization • Formalization • Spesialisasi • Span of control • Organizational size • Unit size 	External <ul style="list-style-type: none"> • Complexity • Stability • Uncertainty 	Organizational Commitment <ul style="list-style-type: none"> • Job interest • Job security • Commitment 	Strategic Goal Formulation: <ul style="list-style-type: none"> • Resource identification and utilization • Creating a performance-oriented environment
Technology <ul style="list-style-type: none"> • Operation • Material • Knowledge 	Internal (Climate & Culture) <ul style="list-style-type: none"> • Employee orientation • Reward–punishment orientation • Security versus risk • Openness versus defensiveness 	Job Performance <ul style="list-style-type: none"> • Motivation • Goals • Needs • Ability & role clarity 	Communication Processes <ul style="list-style-type: none"> • Leadership • Decision-making • Organizational innovation & adaptation

Source: Steers (1985), Reduplication by Islamy et al. (2020)

Meanwhile, information technology (IT) is the backbone in enhancing organizational effectiveness, particularly through digital systems that automatically integrate data and managerial processes. According to Laudon & Laudon (2020), utilizing Management Information Systems (MIS) in the public sector has improved service efficiency, accelerated administrative processes, and enhanced data accuracy and transparency.

2.2. Human Resource Management and Digitalization

In human resource management, traditional approaches that rely on manual administration have been largely abandoned, especially with the emergence of the Human Resource Information System (HRIS) concept. HRIS is a technology-based integrated system that enables the digital management of various HR aspects, ranging from recruitment, training, performance appraisal, and career development (Dessler, 2020). This system supports efficiency and enhances the quality of HR decision-making. According to Akadira et al. (2021), centralized HR applications can accelerate performance evaluations and support strategic decision-making at the managerial level. However, the effectiveness of such systems heavily depends on data quality, human resource readiness, and adequate technological infrastructure support.

Despite the initial implementation of these applications, no comprehensive study has yet evaluated their effectiveness in the context of HR management within the Ministry of Finance. Moreover, although various technological initiatives have been introduced to enhance the operational efficiency of these applications, there remains a lack of in-depth analysis measuring the actual impact of the "Satu Kemenkeu" Application on HR management. Therefore, this study aims to fill that gap by assessing the extent to which the Satu Kemenkeu application effectively supports various aspects of HR management within the Ministry. As stated in Article 1, Paragraph 6 of Law No. 20 of 2023 on State Civil Apparatus (ASN), the management of

ASN through integrated digital technology with systems and data is intended to facilitate the organization and service delivery of ASN management. This regulation reflects a strong national commitment to improving efficiency and service quality in managing civil servants through digital technology utilization. Integrating digital technology into HR management systems will lead to more centralized and structured data management, streamlining HR service delivery and administration processes.

Furthermore, digital technology implementation in ASN management offers various advantages, including performance monitoring, evaluation, career development, and administrative services. With integrated systems, information related to civil servants can be accessed quickly and accurately, enabling stakeholders to make more informed and timely decisions. This is expected to improve civil servants' overall performance and professionalism while reinforcing integrity and accountability in public administration. In response, the Ministry of Finance issued Regulation of the Minister of Finance No. 133 of 2022 on the Governance of Information and Communication Technology, emphasizing the critical role of ICT as the foundation of digital transformation within the Ministry. As both an enabler and a backbone of the transformation process, ICT is crucial in improving efficiency, accuracy, and transparency in government service delivery, particularly in the financial sector. This regulation also highlights that ICT should not merely be seen as a technological tool, but as a catalyst for driving Indonesia's broader economic modernization.

As an enabler, ICT drives operational change and service innovation, including within governmental processes. It facilitates the integration of new technologies, applications, and digital solutions that accelerate improvements in efficiency, productivity, and user experience across sectors. In the financial sector, for example, ICT enables automation systems, faster data processing, and more transparent public service tracking. As a backbone, ICT provides the underlying infrastructure that supports digital service implementation, such as internet networks, servers, and data centers. Without a reliable backbone, achieving the desired levels of efficiency, accuracy, and transparency from digital transformation would be difficult, as it is crucial for consistently and securely connecting various systems, applications, and platforms. In public administration, HR efficiency is a matter of administrative speed, accountability, data transparency, and service quality. The need for HR efficiency has become increasingly important alongside the national agenda for digital bureaucratic reform. This is reflected in Law No. 20 of 2023 on ASN and Regulation of the Minister of Finance No. 133 of 2022, which emphasizes that digitalization of HR systems must be a core part of Indonesia's bureaucratic transformation backbone. Akadira et al. (2021) found that centralized HR applications can accelerate performance evaluations and support strategic decision-making. However, Wibowo (2020) argued that implementation without sufficient training leads to user resistance.

2.3. Operational Integrated Information Systems and Operational Efficiency

Previous studies have shown that process automation through integrated applications positively influences organizational efficiency and time savings. For instance, research by Rulinawaty & Aisyah (2023) found that integrated HR information systems in local government settings could reduce operational costs by up to 20% and improve administrative service efficiency by 35%. However, inconsistencies remain in the findings regarding the level of technology adoption and user perceptions of these applications. Wibowo (2020) found that HRIS applications not designed based on user needs often lead to internal resistance and decreased system efficiency. The literature also emphasizes that developing HR information systems in the public sector must consider sustainability, data security, and inter-unit integration. This aligns with the context of the Ministry of Finance, where the "Satu Kemenkeu" Application was developed to consolidate several previously fragmented HR applications, such as SIKKA, CEHRIS, and KLC.

2.4. Hypothesis Development

The hypotheses in this study are formulated by integrating the Technology Acceptance Model (TAM) framework with findings from previous research. The chosen methodology examines the system's direct and

indirect impacts on efficiency and user perception. Based on the theoretical underpinnings and prior studies, as well as the relevance to the Satu Kemenkeu Application used by the Ministry of Finance, the hypotheses are systematically developed as follows:

- H1 : Automation through the Satu Kemenkeu Application positively affects the efficiency of administrative HR processes within the Ministry of Finance. (This is supported by Akadira et al., who found that application-based HR systems can reduce manual workload and processing time.)
- H2 : Using the Satu Kemenkeu Application significantly improves the accuracy and reliability of HR data. (This aligns with the findings of Rulinawaty & Aisyah (2023), who reported that digital system integration enhances data accuracy and transparency.)
- H3 : There is a positive relationship between perceived ease of use of the Satu Kemenkeu Application and internal user satisfaction. (This hypothesis is based on Davis' TAM model, which asserts that perceived ease of use influences user attitudes and satisfaction.)

Nevertheless, this study acknowledges certain limitations, particularly regarding geographic coverage and the observation period, which will be addressed in future research.

III. Research Method

This study employs a descriptive qualitative approach to gain an in-depth understanding of how the Satu Kemenkeu Application is implemented and how it impacts the efficiency of human resource management (HRM) at the Ministry of Finance. The findings of this research are expected to enrich academic insight into digital transformation within public sector bureaucracy, particularly in improving administrative HR performance through integrated application systems. This approach was chosen because it allows the researcher to explore in detail and within context the various perceptions, experiences, and responses of internal stakeholders regarding using the application system. Consistent with the views of Gibbs (2007) and Bryman (2016), qualitative research captures subjective nuances that cannot be measured statistically but are crucial for understanding the dynamics of digital transformation within public organizations.

3.1. Research Approach and Design

This study adopts an exploratory qualitative research design, focusing on the actual experiences of informants regarding the use of the Satu Kemenkeu Application. The design enables an in-depth analysis of meaning, perception, and the technology adoption process within the Ministry of Finance's work environment. The research was conducted over six months, from August 2024 to February 2025, with the leading site at the Human Resources Bureau, Secretariat General, Ministry of Finance. Data was gathered through in-depth interviews, direct observations, and document analysis, including internal reports. The qualitative approach is appropriate for addressing a phenomenon's "how" and "why" and thoroughly exploring perceptions, meanings, and the social context behind digital policy implementation within public organizations. This approach is also well-suited to exploring organizational change dynamics that are not yet extensively explained through quantitative methods.

3.2. Data Collection Techniques and Sources

Data collection was conducted using three methods: interviews, observations, and document study. The primary method was semi-structured in-depth interviews, which allowed for flexible and context-sensitive information gathering. A total of 14 key informants were selected purposively based on their strategic roles in the development and utilization of the application. All informants represent a spectrum of policy, technical, and operational functions related to the application's implementation, enabling comprehensive triangulation

of perspectives. Detailed information regarding each informant and their roles in this study is presented in Table 2.

Table 2. List of Research Informants

No	Informant	Position	Work Unit
1.	Informant I	Head of Human Resources Planning and Procurement	HR Bureau
2.	Informant II	Head of HR Development Department	HR Bureau
3.	Informant III	Head of Mutation and Rank Section	HR Bureau
4.	Informant IV	Head of HR Information Management	HR Bureau
5.	Informant V	Head of Budgeting Section	Planning and Finance Bureau
6.	Informant VI	Head of Information and Communication Technology Programs and Services Division	Center for Financial Information Systems and Technology (PUSINTEK)
7.	Informant VII	Head of HR Placement Sub-Division	HR Bureau
8.	Informant VIII	Head of Human Resources Performance Management Sub-Division	HR Bureau
9.	Informant IX	Head of Mutation Sub-section	HR Bureau
10.	Informant X	Head of Rank Subsection	HR Bureau
11.	Informant XI	Head of Database Management Sub-Division	HR Bureau
12.	Informant XII	Head of Data Analysis and Information Support Sub-Section	HR Bureau
13.	Informant XIII	Head of Data Integration Sub-section	HR Bureau
14.	Informant XIV	Head of Manuscript Management and Documentation Sub-Section	HR Bureau
15.	Informant XV	Head of Information and Communication Technology Program Management Sub-Division	Center for Financial Information Systems and Technology (PUSINTEK)
16.	Informant XVI	Executor	HR Bureau
17.	Informant XVII	Executor	HR Bureau
18.	Informant XVIII	Executor	HR Bureau

In addition, non-interventionist participant observation was conducted to observe how the application is utilized in daily activities, including user-system interaction, emerging technical barriers, and how the application supports or hinders work processes. These observations were supplemented by field notes, capturing the context of application usage, workspace environment, and spontaneous staff responses. Document analysis was also conducted on internal policies, application implementation reports, user manuals, and financial documents related to system development to strengthen further and complement the primary data. These secondary sources provided a structural overview of the application's vision, objectives, and governance from regulatory and administrative perspectives.

3.3. Research Instruments

The primary instrument in this study was an open-ended interview guide, designed based on conceptual indicators derived from the research variables. The questions were formulated to explore application usage, feature effectiveness, work efficiency, and user perceptions of the system. Additionally, observation sheets were used to record critical events during user interactions with the system. All interviews were in-person, audio-recorded with the informants' consent, and transcribed verbatim for analytical purposes.

3.4. Informant Selection Technique

Informants were selected using a purposive sampling technique, based on professional experience, position, and direct involvement in using or managing the Satu Kemenkeu Application. This technique, which involves selecting respondents based on specific criteria deemed relevant to provide rich and meaningful insights, enabled the researcher to gather strategic information. The selected informants were those with strategic positions, firsthand experience, and active involvement in the development and utilization of the application. This selection refers to Miles & Huberman (2007), who emphasize the importance of selecting informants with relevant expertise and strategic positioning.

1. Three Echelon III officials (Division Heads) at the HR Bureau
2. One IT officer at the HR Bureau and one IT officer at PUSINTEK
3. Nine Echelon IV officials from HR planning, mutation, database, performance, and documentation divisions
4. Three operational staff members (end-users) at the HR Bureau

This combination of informants was intended to capture perspectives across policy, technical, and operational levels, ensuring that the research reflects a comprehensive and multi-faceted understanding of the application.

3.5. Data Analysis Technique

Data were analyzed using thematic analysis, identifying recurring themes from interviews and observations. The analysis followed the model by Miles & Huberman (2007), consisting of three key stages: data reduction, data display, and conclusion drawing.

1. Data Reduction: Interview transcripts and observation notes were selectively coded to identify key patterns and topics. Themes such as "technical challenges", "perceived efficiency", or "technical support" were prioritized during this stage.
2. Data Display: The reduced data were organized into thematic tables and narrative visualizations to facilitate understanding of inter-theme relationships. The researcher developed a matrix mapping user perceptions, application features, and HR processes.
3. Conclusion Drawing: Conclusions were derived from interpreting the analyzed themes and supported through cross-verification via data triangulation from interviews, observations, and documents.

3.6. Research Validity and Ethics

Triangulation of sources and methods was applied to ensure the validity of the findings. Data from interviews were cross-sourced with direct observations and supporting documents. Furthermore, member checking was performed by sending interview summaries back to several informants to verify the accuracy of interpretation. This research adhered strictly to ethical research principles. Every informant provided written informed consent prior to participation. All personal identifiers were anonymized, and data presentation ensured confidentiality. The entire research process was supervised by an academic advisor and conducted according to the university's ethical protocols. Triangulation is a validation technique that compares and integrates data from multiple sources or methods—such as interviews, observations, and documents—to ensure consistency and credibility of the collected information.

IV. Results and Discussion

4.1. Description of the Satu Kemenkeu Application

The Satu Kemenkeu application is an integrated digital platform developed to support the management of human resources (HR) within the Ministry of Finance. Designed to enhance the effectiveness and efficiency of civil service administration, this technology-driven system facilitates strategic planning, development, and comprehensive HR governance. With a centralized system, Satu Kemenkeu enables more accurate and transparent data access while accelerating HR-related business processes. Satu Kemenkeu application encompasses five primary modules comprehensively supporting the full spectrum of HR business processes—from workforce planning to performance evaluation. These modules include:

1. **Workforce Planning and Recruitment:** This module facilitates workforce needs analysis and staffing through the following key features:
 - a. **HR Planning Module:** Strategically and data-driven, this module supports systematic workforce planning by enabling the analysis of staffing needs, future projections, and formulation of policy to optimize personnel capacity and competence.
 - b. **CPNS Decree Module:** Manages the issuance of appointment decrees (SK) for civil servant candidates, ensuring compliance, transparency, and administrative efficiency.
 - c. **PNS Decree Module:** Processes the issuance of SKs for full civil servants post-probation, guaranteeing timely administrative recognition of employment status.
2. **HR Development:** This module aims to enhance employee competence and performance through:
 - a. **e-Performance Module:** A digital evaluation system ensuring objective and efficient performance reviews, allowing ongoing interaction between supervisors and staff for feedback and development planning.
 - b. **Comprehensive Competency Module (Assessment Center):** Integrates simulations, interviews, and performance observations to map and assess employee competencies, forming the basis for training, rotation, and promotion decisions.
 - c. **Study Assignment Module:** Facilitates digital submissions and monitoring of career development study programs, ensuring alignment with organizational needs and enabling reintegration management upon completion.
3. **Employee Mobility and Career Advancement:** This module manages promotion and transfer processes:
 - a. **Promotion Decree Module:** Streamlines the digital processing of rank promotions, reducing errors and expediting approval through real-time tracking.
 - b. **Talent Management Module:** Supports identifying, mapping, and developing high-potential employees through data-driven and merit-based processes.
 - c. **Transfer and Promotion Module:** Enables digital processing of transfers and promotions, supported by performance and competency data, ensuring transparency and fairness.
4. **Awards, Discipline, and Retirement:** Structurally manages employee rights, obligations, and sanctions:
 - a. **Leave Module:** Simplifies leave applications and approvals electronically, increasing efficiency and documentation accuracy.

- b. International Travel Permit Module: Digitizes approval procedures for overseas assignments, ensuring compliance with ministerial regulations.
 - c. Periodic Salary Increase (KGB) Module: Automatically processes eligible salary increments, reducing administrative delays.
 - d. Disciplinary Action Decree Module: Records and administers employee disciplinary actions transparently and by legal frameworks.
 - e. Separation Management Module: Administers employee exits, including retirement, ensuring rights fulfillment and structured succession planning.
5. HR Information Management: Serves as a centralized hub for personnel data, supporting strategic decision-making:
- a. Basic and Historical Data Submodule: Maintains essential employee data, including identity, position, and education history.
 - b. Decision Support System (DSS): Assists in HR analytics to provide evidence-based managerial recommendations.
 - c. HR Dashboard: Presents interactive data visualizations for monitoring staff distribution, performance, and position occupancy.
 - d. HR Bureau Website: A dedicated portal for policy dissemination, service guidance, and access to forms and updates.
 - e. Organizational Structure and Positions Submodule: Maps organizational hierarchies and supports workforce planning and mobility.
 - f. Nominative Data Module: Provides categorized employee lists for planning and placement purposes.
 - g. HRIS–SIASN Integration Submodule: Ensures data synchronization with the National Civil Service Information System managed by BKN.
 - h. Digital Signature Feature: Enables secure, efficient digital document management.
 - i. Employee Profile Analysis Submodule: Enables strategic career planning based on competency and performance analytics.

4.2. Evaluation of Centralized Automation Implementation: Enhancing Data Management and HR Performance

Implementing the Satu Kemenkeu application within the Ministry of Finance marks a significant milestone in the digital transformation of human resource management. The system consolidates previously fragmented HR administrative functions—previously dispersed across multiple applications such as SIKKA, CEHRIS, and KLC—into a unified platform. Based on in-depth interviews and field observations involving 18 informants across various organizational levels, the application has demonstrably contributed to enhanced data management and HR performance.

One of the most substantial impacts of the system is the increase in administrative efficiency. Before automation, HR data management was conducted manually, with non-standardized processes across units. Administrative tasks such as leave requests, personal data updates, performance evaluations, and promotion proposals involved lengthy bureaucratic chains prone to delays. These processes are now fully digitized and can be self-managed by employees via a web dashboard or mobile application. Informant IV noted, "Previously, submitting a transfer decree could take more than two weeks—now it takes only two to three days because all documents are digital." This improvement is supported by quantitative data from the 2024 Performance Report of the HR Information Management Division, which shows a 43.7% reduction in average processing time for HR administration tasks. For instance, team member data entry and verification processes, which previously required up to seven working days, can now be completed within two days. Data consolidation through the Satu Kemenkeu application allows for real-time synchronization of employee records across all echelon I units—something no previous system could achieve. With centralized access, data

such as education history, training, rank, position, and performance evaluation are readily available to authorized personnel with a single click.

Field observations also reveal that the application's "Executive Summary" feature significantly supports data-informed decision-making by unit leaders. Informant IX (an HR planner) stated, "We can now map employee competency distribution in minutes, and the results can immediately inform training or transfer needs analysis." Features such as Talent Pool Management and the Digital Competency Profile further aid merit-based HR planning beyond merely administrative processes. From a performance evaluation perspective, the system includes a monitoring feature aligned with individual performance indicators and organizational performance contracts. Employees and supervisors can monitor work progress periodically and provide documented feedback. Informant XIII (an echelon III official) remarked that the system is "an objective and measurable performance control tool, reducing subjectivity due to pre-determined indicators at the beginning of the year."

The system also improves managerial decision-making by providing faster, more accurate, and reliable HR data. Previously, leaders would spend days compiling aggregate data—now, it is accessible in real-time and visually represented through interactive dashboards. This expedites strategic decisions regarding team member placement, workload analysis, and training program development. Regarding budget efficiency, system integration into a single platform has financial implications. While the application's development budget increased from IDR 278 million in 2022 to IDR 422 million in 2024 (Table 11.1 of this study), it eliminated the need for separate budgets for training and developing multiple vertical systems. Previously, training and system development were conducted separately for SIKKA, CEHRIS, and KLC, but now they are unified under one standardized system. However, challenges remain. For example, technical capacity disparities exist between units. The HR Bureau, as the primary user, often relies heavily on support from the Financial Information Systems and Technology Center (PUSINTEK). Informant V explained, "Even minor issues like password resets often need to be escalated to PUSINTEK due to limited technical capacity in the HR Bureau." In summary, the automation of the Satu Kemenkeu application has significantly enhanced HR data management and performance effectiveness at the Ministry of Finance, as demonstrated by:

1. Reduction of administrative processing time by over 40%;
2. Improved data accuracy and real-time access;
3. Integrated performance assessment and development processes;
4. Data-driven decision-making optimization; and
5. Cost-efficiency through reduced system duplication and consolidated training efforts.

Future effectiveness may be further enhanced by strengthening technical user capabilities within the HR Bureau, ensuring optimal system interoperability across units, and conducting periodic user-centered evaluations.

4.3. Evaluating the Impact of the Satu Kemenkeu Application on HRM Efficiency and Productivity in the Ministry of Finance

Implementing the Satu Kemenkeu application has led to structural changes in HR management practices within the Ministry of Finance. Its impact extends beyond administrative data processing and information systems, directly influencing time efficiency, resource utilization, and overall unit productivity. In this context, efficiency is the optimal use of time and resources to achieve equal or greater outcomes. At the same time, productivity denotes the increase in work output within a given time frame while maintaining quality. Based on internal documents from the HR Bureau and interviews with key informants, one of the clearest indicators of the application's positive impact is the reduction in administrative workload. Previously, leave requests, employee data inquiries, training proposals, and performance reporting relied on manual systems and inter-unit email chains, requiring repetitive confirmation steps. These processes are now

centralized within a standardized system accessible to all employees—from administrators to end-users. The Satu Kemenkeu application has significantly contributed to HR management by:

1. Enhancing the efficiency and digitization of HR processes;
2. Improving the accuracy and reliability of HR data;
3. Optimizing employee performance through digital evaluation systems;
4. Strengthening talent management and competency development;
5. Increasing transparency and accountability; and
6. Facilitating easier access to HR services for all employees.

The average processing time for an HR service decreased from 3.6 working days to 1.2 days following system implementation. Employee productivity also increased, with data managers completing up to 47 daily entries compared to 24 previous entries. Features such as automated notifications, tracking tools, and digital reminders have replaced manual monitoring, improving administrative discipline and compliance. However, several implementation challenges remain. There is an evident disparity in adoption levels between the central office and regional units and limitations in digital infrastructure, including bandwidth and hardware availability. Due to technical constraints, some employees still encounter difficulties accessing the application optimally during peak hours. Thus, efforts to enhance user capacity and improve IT infrastructure remain urgent priorities. From an organizational standpoint, data generated by the application has begun to support workload analysis and objective talent mobility planning. This indicates that the Satu Kemenkeu application functions as an administrative tool and a strategic instrument for adaptive and data-driven HR management.

These findings demonstrate that the application significantly enhances efficiency and productivity in HR governance. To ensure the sustainability of these positive impacts, continuous training, adaptive system updates, and adequate infrastructure support across all work units are essential. Additionally, strengthened monitoring of system implementation in the field is necessary to ensure alignment between digital policy objectives and actual operational practices.

4.4. Significance of Findings in the Context of Public Administration

The findings of this study hold relevance not only for the internal governance of the Ministry of Finance but also reflect broader trends in bureaucratic reform and digital transformation within public administration. The operational efficiency, transparency, and productivity gains associated with the Satu Kemenkeu application align closely with the principles of good governance that underpin public service reform initiatives in Indonesia. By illustrating the potential of digital technologies to improve public sector performance, this research contributes significantly to the literature on public HR management and e-government. Moreover, the study can serve as a reference for other ministries or government institutions seeking to develop integrated HR management systems. Nevertheless, like many digital transformation projects, implementing Satu Kemenkeu has challenges, including digital divides and user resistance. Therefore, the success of such transformation efforts depends heavily on user engagement strategies, the development of a clear implementation roadmap, and strong policy support from leadership.

4.5. Limitations of the Study

This study has several limitations, particularly in scope and methodological approach. The primary data were collected from informants primarily based in the central office of the Ministry of Finance, which may not fully represent the dynamics occurring in regional or subordinate units. Furthermore, the qualitative approach produces context-specific insights that may not be broadly generalizable. In addition, the study has not yet explored a comprehensive quantitative comparison of pre- and post-implementation performance

metrics. Therefore, future research should adopt a mixed-method approach, combining qualitative and quantitative methodologies to yield a more holistic understanding of the system's effectiveness.

V. Conclusion

This study highlights the importance of implementing integrated digital systems in human resource management within the public sector, using the Satu Kemenkeu Application as a case study. As a centralized platform for HR data and administrative processes at the Ministry of Finance, the application has proven effective in enhancing data management efficiency and accelerating managerial decision-making processes. This transformation is tangible evidence that bureaucratic digitalization—when carried out in a structured and measurable manner—can reduce process redundancy, accelerate service delivery, and improve the quality of employee output. However, the study also reveals that technology implementation is not without challenges, such as low levels of digital literacy, technical dependency on other units, and system fragmentation across departments. The findings indicate that although the application positively impacts efficiency and productivity, its optimization depends heavily on organizational structure readiness and adequate infrastructure support. Therefore, strategies such as enhanced user training, decentralization of technical services, and data-driven monitoring are key to ensuring the system's sustainability. Theoretically, this research contributes to the literature on technology adoption in public sector management. It demonstrates that the success of digital transformation depends on integrating systems, organizational actors, and work culture. From a managerial perspective, the findings provide concrete recommendations for policymakers to strengthen the overall governance of HR technology, ensuring that the system's benefits are equitably distributed across all organizational levels. Thus, the Satu Kemenkeu Application is an administrative tool and a driving force for data-based bureaucratic reform.

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