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FROM REGULATION TO REALIZATION: A SOCIOTECHNICAL STUDY ON THE IMPLEMENTATION OF SIAPKERJA IN THE WORK TRAINING UNIT OF BALI PROVINCE

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ABSTRACT

The advancement of information technology has prompted governments to optimize public services through digital systems, including the implementation of e-Government. This study aims to analyze the implementation of the SIAPkerja (Work Training Administration and Information System) application at the Regional Technical Implementation Unit for Industrial and Tourism Job Training Center (UPTD BLK-IP) in Bali Province, as part of the digital transformation in the employment sector. Using a descriptive qualitative approach over two months, data were collected through direct observation, in-depth interviews with training program administrators, and documentation analysis of technical guidelines and training reports. Findings reveal that successful implementation of SIAPkerja depends on three core elements: government policy support through regulation and system development; resource capacity including funding, IT infrastructure, and human resource competence; and system value in enhancing administrative efficiency and transparency. However, technical challenges persist, such as limited features, delayed report notifications, and inflexible participant data management. This study contributes a sociotechnical perspective by emphasizing the alignment between regulation, technology, and operational practices at the execution level. Key recommendations include continuous field-based evaluation and institutional capacity strengthening to ensure the sustainability of digital transformation in vocational training services. These findings enrich social sciences and humanities discourse on micro-level policy implementation in digital governance.

Keywords: *Digital Transformation, E-Government, SIAPkerja, Sociotechnical System, Vocational Training*

INTRODUCTION

Digital transformation in the public sector has become inevitable in efforts to improve the quality of services to the community (Arni, 2024; Sakir et al., 2024). The Indonesian government, through various regulations, has promoted the implementation of e-Government as part of bureaucratic reform and the acceleration of information technology-based services (Hieng & Prabawati, 2024; Latuheru et al., 2024; Sulaiman et al., 2024). One manifestation of this effort is the development of the Work Training Information and Administration System (SIAPkerja), aimed at integrating the planning, implementation, and reporting processes of job training digitally across all Regional Technical Implementation Units (UPTD) of Work Training Centers. However,

the success of a digital system cannot be measured solely by its existence but by how it is operated, understood, and adapted by field implementers (Salsinha & Lukman, 2024; Syauta et al., 2024). In this context, it is important to examine how national regulations regarding SIAPkerja are translated into operational reality at the regional level, particularly at the UPTD BLK-IP of Bali Province, which serves as a key benchmark for job training in the industrial and tourism sectors.

The fundamental issue raised in this research stems from the tension between the expectation of an efficient digital system and the on-the-ground reality showing various implementation barriers. Initial studies and observations indicate that although the SIAPkerja application has been formally used, the digitalization process has not yet run optimally. Limitations in application features, technical obstacles, and human resource capacity often become factors that hinder the system's ideal achievements. This fact is reinforced by internal evaluation reports showing low real-time reporting and difficulties in flexibly managing trainee data. Therefore, a deeper understanding is needed of the dynamics of implementing digital systems within local bureaucracies, especially in relation to technological readiness, structural support, and the adaptive capabilities of human resources.

Previous research has highlighted aspects of e-Government implementation and public service digitalization. For example, Adam & Alhassan (2023), Al Sayegh et al. (2023), and Feleke & Lessa (2024) state that the success of e-Government heavily depends on the integration between technology, business processes, and institutional readiness. Meanwhile, Sloane et al. (2022), Trček (2022), and Vial et al. (2022) emphasize the importance of participatory approaches in designing digital systems to align with the needs of field users. Research by Badruzaman et al. (2023) and Omweri (2024) reveals that socio-cultural factors also influence the acceptance of information technology within bureaucracies, while Turner et al. (2022) found that many government digital systems are used only administratively, without the internalization of public service substance. On the other hand, studies by Androniceanu et al. (2023) and Mihaila (2024) on institutional capacity show that digital systems will not be effective without strengthening human resource competencies and sustainable funding.

Other literature, such as that presented by Chauhan et al. (2022), Ntoa (2025), and Windasari et al. (2022), highlights the importance of continuous evaluation in digital systems, including feature reliability and user experience. Furthermore, Ariansyah et al. (2025), Sugihono et al. (2025), and Syauta et al. (2024) show that the presence of digital systems often faces adaptation challenges, especially in local agencies that lack a data-driven work culture. In the studies by Chohan & Hu (2022) and Zhao et al. (2024), it was found that job training information systems need to be designed with collaborative principles, considering the diversity of actors involved. This is also supported by findings from Bal et al. (2022) and Sadiq et al. (2022) on personnel information systems showing similar results — that managerial and technical aspects must go hand in hand. Then, according to Chen et al. (2021) and Gharieb et al. (2024), digitalization will only have a significant impact if the system is aligned with local workflows and capacities. Additionally, studies by Farias-Gaytan et al. (2022), Ferré-Bigorra et al. (2022), and

Heeks (2022) underline the importance of mapping user needs as the basis for developing digital systems.

However, most of these studies still operate at a macro level — examining digital policies normatively or focusing on e-Government systems in general. There are still few studies that delve into how systems like SIAPkerja are operated technically and socially at the micro level, namely at the regional technical implementation units. Yet, it is precisely in this space where policy is tested and translated into real action. Behind the seemingly organized dashboards, there are dynamics of adaptation, procedural adjustments, and even resistance that often do not appear in official reports. This space is rarely explored, despite being a crucial point in the success of digital system implementation.

In the absence of grounded micro-level studies amid the bustling narrative of national digital transformation, this study aims to reread the relationships between systems, people, and structures within a sociotechnical framework. Rather than merely viewing the SIAPkerja application as an administrative tool, this research seeks to understand how the application lives within the everyday bureaucracy of job training — how it is understood, operated, worked around, or even abandoned. From there, it becomes evident that the success of the system cannot be measured solely by numbers and reports, but by the alignment between system design and the social reality that operates it.

Therefore, this study aims to analyze the implementation of the SIAPkerja application in a sociotechnical context at the UPTD BLK-IP of Bali Province, by mapping structural support, technical capacity, as well as the actual benefits and challenges faced by field implementers. This research not only provides a technical portrait of system use but also offers a more holistic understanding of how digital systems transform into complex social practices. Thus, this study is expected to enrich the social-humanities discourse in the realm of digital policy and serve as a foundation for developing more inclusive, adaptive, and contextual systems.

RESEARCH METHOD

This study uses a descriptive qualitative approach aimed at providing an in-depth depiction of the implementation of e-Government through the SIAPkerja application by the administrative managers of the Regional Technical Implementation Unit of the Industrial and Tourism Work Training Center (UPTD BLK-IP) of Bali Province. This approach was chosen because it can thoroughly and contextually explore complex phenomena, particularly concerning the technical, administrative, and operational aspects of application use in public services. In qualitative research, the researcher acts as the key instrument who directly interacts with the field, while the data collection process is carried out triangulatively, that is, through various techniques and sources to obtain valid and in-depth information (Abdussamad, 2022). The main focus of this research is to understand how the SIAPkerja application is applied to support the effectiveness of digital services and the challenges faced by the administrative managers.

This research was conducted over approximately two months, from March 4 to April 30, 2025, located in the work environment of the UPTD BLK-IP of Bali Province. During this period, the researcher conducted direct observations of the work processes of the admins using the SIAPkerja application, in-depth interviews with key respondents, and documentation of data and reports related to the system. The main respondents in this study were the application management admins in two key divisions, namely the program division and the training division. Both play strategic roles in utilizing the SIAPkerja application as an information technology-based digital service system. Through intensive interactions with these respondents, the researcher was able to gain a broader and more comprehensive understanding of the benefits of the application in terms of work efficiency, communication, and the administration of training and work program reporting.

Data collection was carried out using three main techniques: observation, in-depth interviews, and document study. Observation was conducted to understand how the admins operate the SIAPkerja application in their daily work routines and to identify any technical obstacles that might arise. In-depth interviews provided space for respondents to express their experiences, perceptions, and evaluations of the implemented system, as well as its impact on workload and service quality. The document study was conducted by analyzing documents such as technical guidelines for application use and reports on training activities conducted. Data triangulation from these three techniques was used to enhance the validity and accuracy of the research findings.

In the data analysis stage, the researcher used qualitative descriptive analysis with a process of data reduction, data presentation, and conclusion drawing, as described by Miles & Huberman (2020). Data obtained from observations, interviews, and documentation were first selected to filter information relevant to the research focus. After that, the data were organized and presented in descriptive narrative form to illustrate the processes, obstacles, and perceptions of the administrative managers regarding the implementation of the SIAPkerja application. Data presentation was carried out systematically to facilitate the identification of relationships between application implementation and service effectiveness. The final stage was conclusion drawing, which was conducted continuously throughout the research process to build a complete and thorough understanding of the studied phenomenon.

RESULTS AND DISCUSSION

Government Support for SIAPkerja Admin Management at UPTD BLK-IP, Bali Province

The government needs to strengthen supporting infrastructure, including developing a more user-friendly application and preparing skilled administrators at all levels, from the central to regional levels, through the SIAPkerja application (Putri, 2024). Government support for the SIAPkerja administrators at the UPTD Vocational and Industrial Training Center (BLK-IP) of Bali Province is a vital element in the successful implementation of electronic-based government

systems, especially in the employment sector. This support element not only reflects the political will of government leaders but also demonstrates a long-term commitment to fully implementing E-Government.

Since the issuance of Presidential Instruction No. 3 of 2003 on the National Strategy for E-Government Development to Presidential Regulation No. 95 of 2018 on Electronic-Based Government Systems, the government has consistently shown its dedication to creating more efficient, transparent, and IT-based public service systems. In this context, SIAPkerja administrators at UPTD BLK-IP Bali play a key role as technical implementers who bridge the digital system with the real needs of the community, particularly in terms of job training and workforce competency improvement.

The central government, through the Ministry of Manpower, also provides direct support by creating and refining labor information systems. Initially, in 2019, the SISNAKER application was launched as an integrated employment service platform, which was later developed into SIAPkerja in 2022 to present a more integrated and real-time system (Novanti & Meirinawati, 2024; Teguh Gunawan et al., 2022). This change was a progressive step supported by intensive training, system updates, and technical assistance for administrators in various regions, including at UPTD BLK-IP Bali Province. SIAPkerja admins in Bali receive facilities such as digital service system training, human resource capacity building, and adequate infrastructure support to optimally run this system.

This support is crucial considering the complexity of the data and services that admins must manage to meet the community's need for accurate and fast job training information. However, despite the presence of regulations and strategic policies, field challenges show that the system is still not fully adaptive. One of the main challenges faced by admins is the mismatch between the training schedule and the "start training" feature in the application. When participants suddenly withdraw and no replacements are available, admins cannot make changes in the system because there is no replacement option once training has been clicked as "started." This issue directly impacts data validity and budget reporting.

This indicates that government support still needs improvement, particularly in developing a more flexible system that can adapt to operational dynamics in the field. Additionally, technical issues such as classes not appearing during registration, reports that are difficult to download, and delays in data delivery to emails indicate the need for server infrastructure updates and more reliable application features. Therefore, policy and coordination aspects between institutions are necessary as a concrete form of government support for SIAPkerja management.

The local government, especially UPTD BLK-IP Bali Province, plays an active role in ensuring that the synergy between central policies and local implementation runs in harmony. This involvement includes monitoring system implementation, evaluating admin performance, and allocating budgets to support IT development and implementer training. Support from stakeholders shows that the success of SIAPkerja implementation does not solely depend on the

sophistication of the technology but also relies heavily on the quality of the human resources managing it and the government's commitment to creating an inclusive, transparent, and sustainable digital ecosystem. With such synergy, SIAPkerja is expected to become an effective solution to improve accessibility, efficiency, and accountability of employment services in Bali.

Administrative Capacity in the SIAPkerja Application at UPTD BLK-IP, Bali Province

The second success element that must be present for optimal E-Government implementation is the capacity of the government to support the application of SIAPkerja effectively. In this capacity element, the researcher identifies three key benchmarks: the availability of financial resources, the availability of IT infrastructure, and the availability of competent human resources. These three aspects form the primary foundation to ensure the sustainability of SIAPkerja system implementation within government training institutions such as UPTD BLK-IP Bali Province.

First, the availability of financial resources is a crucial foundation in building and managing a digital system sustainably. Adequate budgets enable local governments to provide supporting facilities such as computers, internet networks, and software licenses used in SIAPkerja operations. In addition, funds are also needed to finance technical training for admins so they can operate the application optimally. Without stable budget support, the quality of E-Government implementation will tend to stagnate and fail to adapt to the evolving digital demands.

Second, IT infrastructure is a very critical element. This infrastructure includes the availability of hardware and software, reliable internet networks, data security systems, and servers capable of storing and managing training information digitally and centrally. The implementation of SIAPkerja at UPTD BLK-IP Bali has shown this infrastructure readiness, where administrators can directly connect with the central system to carry out various administrative and operational training processes.
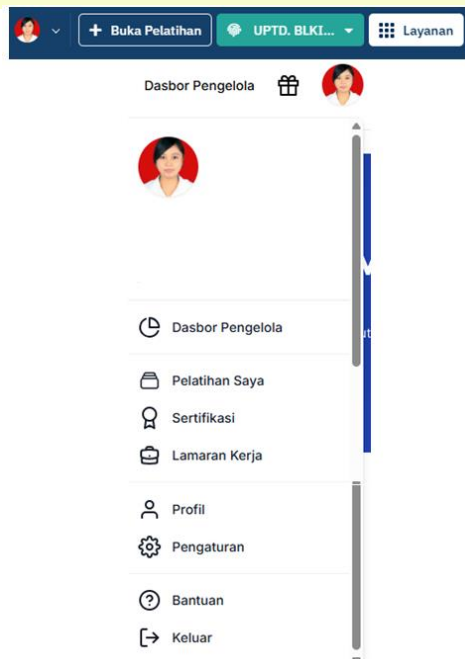
Figure 1 Admin Account Display at UPTD BLK-IP, Bali Province
Source: UPTD BLK-IP Bali Province

The figure above shows the admin account display at UPTD BLK-IP Bali Province, which has direct access to key features such as the Admin Dashboard, My Training, Certification, and Job Applications. Through this dashboard, admins can monitor and manage the entire training process, from participant registration and training implementation to job placement. Additionally, features like Profile, Settings, and Help reflect the application of an integrated and user-friendly digital system, thereby improving public service quality and supporting transparency and accountability in the provision of IT-based training.

Third, competent human resources (HR) are also a crucial element. Admins must understand the digital system, be able to operate the SIAPkerja platform, and resolve technical issues that may arise during training implementation. This competence significantly determines the effectiveness of E-Government implementation because a digital system can only operate well if run by HR with adequate digital literacy. The abilities and preparedness of the HR, in this case, the admins, are the spearhead of SIAPkerja application operations. From the issues that arise, it is clear that the admins at UPTD BLK-IP Bali are required to be adaptive and tactical when facing system challenges. When the system cannot accommodate real-time field needs, admins must make decisions outside of standard procedures to maintain training continuity. This indicates that they have good problem-solving capacity, but unfortunately, this is not yet supported by sufficient follow-up training or coaching systems. This capacity should be continuously improved through intensive training, user discussion forums, or even active involvement of admins in system development. Without continuous capacity enhancement, it will be difficult for admins to optimally manage complex digital systems like SIAPkerja.
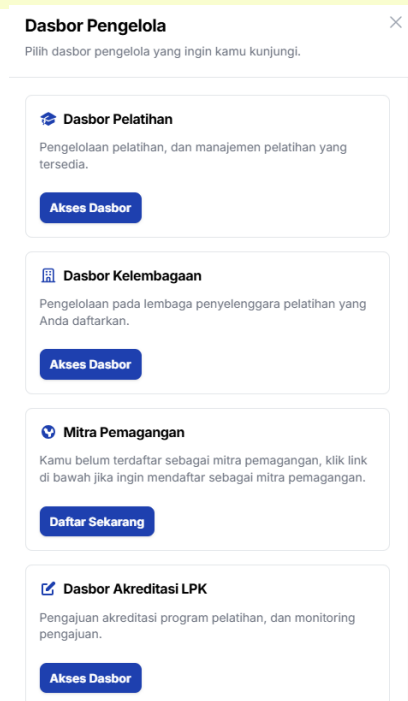
Figure 2 "Admin Dashboard" Menu
Source: SIAPkerja, 2025

The figure displays the "Admin Dashboard" menu, a special access area for admins or training institution managers, including UPTD BLK-IP Bali Province. This display shows specific and integrated function divisions, such as the Training Dashboard, Institutional Dashboard, Apprenticeship Partners, and the Training Institution (LPK) Accreditation Dashboard. With this menu, admins can carry out administrative tasks centrally within one digital platform, covering training registration, participant data management, accreditation applications, and partnerships with industry partners for apprenticeships.

This is a vital part of E-Government implementation, where public services are not only digital on the user side but also within internal government administration systems. In the context of UPTD BLK-IP Bali, this feature enables managers to be more efficient and transparent in delivering training reports, ensuring training institution quality through accreditation, and expanding collaboration networks with the private sector. This supports the main principles of E-Government, namely bureaucratic efficiency, increased accountability, and data-driven, real-time, and accountable public services.

Benefits of the SIAPkerja Application (Value) for Administrators at UPTD BLK-IP Bali Province

SIAPkerja aims to provide a more efficient and user-friendly digital ecosystem, making access to employment services easier for individuals, companies, and government organizations (Muhyiddin et al., 2024; Putri et al., 2024; Wuryan et al., 2025). The value or benefit of implementing SIAPkerja should ideally be directly felt by all related parties, including trainees, system administrators, and policymakers. However, if these benefits are overshadowed by

various technical obstacles and system-procedure mismatches, the main goals of e-Government have not been fully achieved. For example, difficulties in downloading reports or classes not appearing during registration actually increase the workload for administrators instead of reducing it. To ensure that the application delivers maximum value, the system needs to be more user-friendly, responsive to user feedback, and truly capable of integrating administrative processes with real-world needs. Only then can SIAPkerja provide optimal benefits and genuinely improve the quality of public services in a sustainable manner.
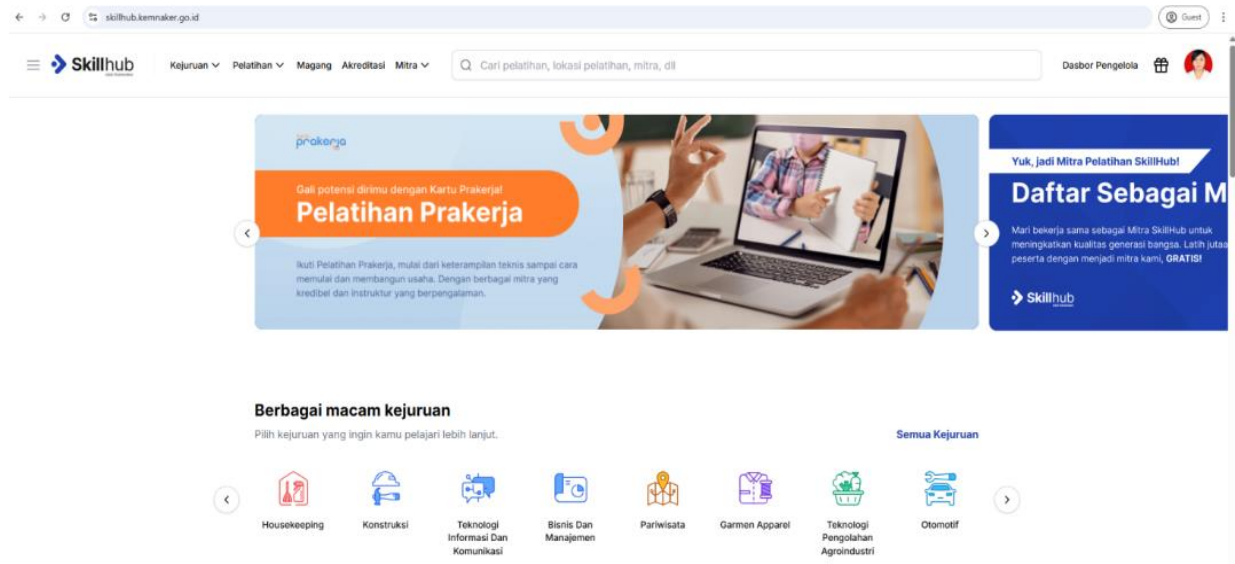

Figure 3 Skillhub Page
Source: SIAPkerja, 2025

The image above shows the Skillhub page, which is part of the SIAPkerja application, focusing on vocational training services. This page is one of the key features in the implementation of e-Government, especially in facilitating digital-based skills training. Various training categories such as Housekeeping, Construction, Information and Communication Technology, Tourism, Automotive, and many others demonstrate the system's flexibility in accommodating diverse fields of expertise. In addition, the promotion of programs like "Prakerja Training" highlights the application's support for national policies in human resource development.
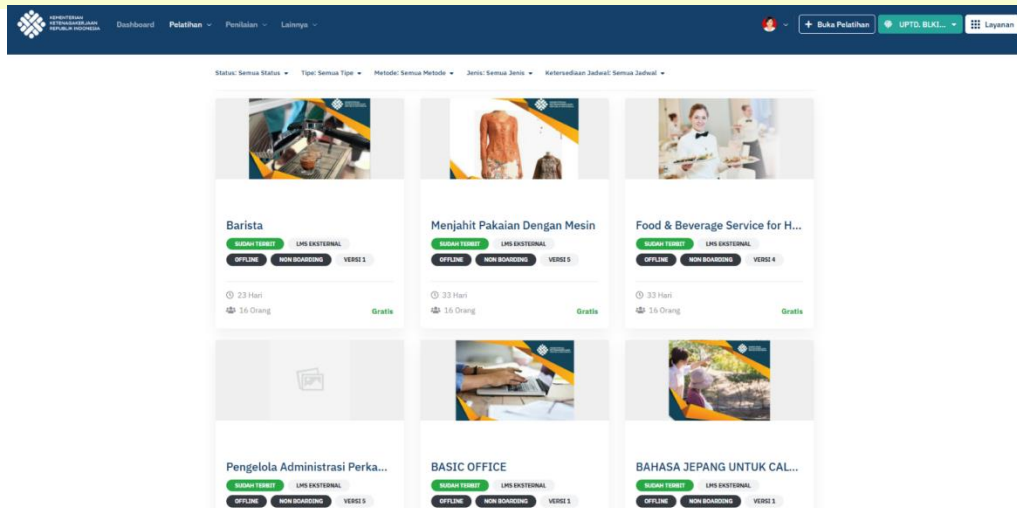
Figure 4 Training Page
Source: SIAPkerja, 2025

The training page of UPTD BLK-IP Bali Province, displayed on the official website of the Ministry of Manpower of the Republic of Indonesia, provides important information on trainings that have been and are being conducted between 2021 and 2025. On this page, there are main navigation features such as Training, Evaluation, and filters that help users search for trainings based on status, type, method, category, and schedule availability. The presence of the Evaluation feature also indicates that the system is equipped with learning outcome assessments for both participants and instructors. Available trainings are displayed as information cards, complete with details such as training duration (e.g., 23–33 days), number of participants, training system (offline and non-boarding), external LMS method, and "Published" status, with all training provided free of charge. The types of training offered are diverse, covering service, administration, technical, beauty, language, and culinary fields, including Barista, Machine Sewing, Food & Beverage Service for Hotels, Basic Office, Office Administration Management, Residential AC Technician, Spa Therapist, Bread and Pastry Making, as well as foreign language courses such as Japanese for Indonesian Job Seekers and Mandarin for Indonesian Migrant Worker Candidates. With a wide range of training options tailored to labor market needs, this program represents a tangible effort to continuously improve the competence and competitiveness of the workforce in Bali Province.

Furthermore, the benefits of SIAPkerja for administrators at UPTD BLK-IP Bali Province are also reflected in the system's role in supporting reporting efficiency and work accountability. Before the digital system existed, administrators had to compile reports manually, collect participant data through various physical documents, and repeatedly cross-check information. Now, with data digitalization, reporting processes can be carried out automatically and systematically, greatly reducing the time and effort required. Administrators can directly access training history, participant numbers, and evaluation results in a single integrated platform, without needing to retrieve data from multiple separate sources. This provides tremendous

convenience in preparing performance reports, program evaluations, and long-term training effectiveness analyses.

Although SIAPkerja offers many conveniences in managing employment training, interviews with administrators at UPTD BLK-IP Bali Province reveal that, in practice, there are still several significant technical challenges. One major issue is system delays in sending report data to the admin's email. Data that should be quickly accessible, such as training transaction reports, often fails to arrive in the email despite repeated download attempts. In fact, there was a report from one training program that did not come through at all. This condition obviously hampers the preparation of activity reports and other administrative processes that heavily depend on timely and accurate data.

Another problem arises during the registration and class selection process. In several cases, classes that were already opened in the system did not appear on the participant's screen, hindering the registration process. The problem becomes more complex when participants withdraw after the admin clicks the "start training" button. The system does not provide an option to replace participants once the training has begun, even though, according to central policy, the number of participants in each training is required to be 16. When a participant withdraws without a replacement, there is a mismatch between the system data and the predetermined budget, such as in the provision of training equipment. In such situations, the training continues in reality, and the admin tries to find replacement participants outside the system to maintain the required quota of 16 people. However, the consequence is that these replacement participants cannot participate in the competency tests, as only those registered in the system are eligible.

The solution adopted by field administrators is to adjust technical procedures based on real conditions, namely by delaying the input of training data into the system by 1–2 weeks after the training has started. This way, they can ensure that all participants continue the training without sudden withdrawals. Once the situation is considered stable, the admin clicks "start training" and aligns the system's training start date with the actual schedule in the field. Although this solution does not fully comply with system regulations, it is deemed the most effective way to maintain data validity and ensure that participant quotas meet central requirements. Therefore, it is crucial for SIAPkerja application developers to pay attention to feedback from administrators as key users, so the system can become more adaptive, responsive, and flexible to actual field needs.

CONCLUSION

Based on the research findings and discussion, it can be concluded that the implementation of the SIAPkerja application at UPTD Balai Latihan Kerja Industri dan Pariwisata (BLK-IP) Bali Province is not merely an administrative digitalization process; it reveals the complexity of the relationships between regulations, institutional capacity, and operational

practices at the implementer level, which shape the real dynamics of e-Government in the employment sector. The main findings show that the success of the system is not determined by technological aspects in isolation, but by the sociotechnical alignment between policy support, adequate resources, and perceived value by field implementers. In this context, the role of administrators is not just as system users but also as adaptive agents who mediate technical constraints and operational realities through informal strategies such as delaying data input to ensure the validity of information. This indicates that the sustainability of digital transformation cannot rely solely on top-down system design but requires responsiveness to micro-institutional practices that are often overlooked in conventional e-Government studies. Therefore, the main contribution of this study lies in its sociotechnical approach, which places social, technological, and institutional dimensions on equal footing in explaining the success or failure of digital policy implementation, particularly in the context of local-level employment training.

ETHICAL STATEMENT AND DISCLOSURE

This study was conducted in accordance with established ethical principles, including informed consent, protection of informants' confidentiality, and respect for local cultural values. Special consideration was given to participants from vulnerable groups to ensure their safety, comfort, and equal rights to participate. No external funding was received, and the authors declare no conflict of interest. All data and information presented were collected through valid research methods and have been verified to ensure their accuracy and reliability. The use of artificial intelligence (AI) was limited to technical assistance for writing and language editing, without influencing the scientific substance of the work. The authors express their gratitude to the informants for their valuable insights, and to the anonymous reviewers for their constructive feedback on an earlier version of this manuscript. The authors take full responsibility for the content and conclusions of this article.

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