

DIGITAL GOVERNANCE IN THE IMPLEMENTATION OF (BANDUNG INTEGRATED MANPOWER MANAGEMENT APPLICATION) AT THE BANDUNG CITY MANPOWER OFFICE

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Article history: received 01 March 2026; revised 15 March 2026; accepted 05 April 2026

DOI: <https://doi.org/10.33751/jhss.v10i01.271>

Abstract. The digital transformation of public governance has become a strategic agenda for local governments in responding to labor market complexity and the growing demand for more integrated public services. In the City of Bandung, this agenda is implemented through the Bandung Integrated Manpower Management Application (BIMMA), developed by the Manpower Office as an employment service platform. This study aims to analyze the characteristics of digital governance in the implementation of BIMMA, examine the alignment between organizational dynamics, external labor market demands, and digital governance practices, and assess the implications of this alignment for the effectiveness of municipal-level employment services. This study employs a qualitative exploratory approach through digital observation, policy document analysis, and a literature review, using Welchman's (2015) digital governance framework as the analytical lens. The findings reveal a gap between theoretical expectations and practical implementation. Existing literature emphasizes the importance of data integration, algorithm-based analytics, and the government-as-a-platform approach in digital employment services. Empirically, however, BIMMA continues to function primarily as an information repository, characterized by fragmented data flows, limited analytical capacity, and weak inter-unit coordination. These findings indicate that the main constraints lie not in technological capacity, but in governance design, bureaucratic organizational culture, and the underutilization of data in decision-making processes. This study concludes that the effectiveness of digital employment services requires governance reform.

Keywords: Digital governance; Employment services; BIMMA; Local government; Public sector digital.

I. INTRODUCTION

Digital-based public governance transformation has become a strategic agenda in various cities around the world, as demands for fast, transparent, and user-oriented public services increase. The Indonesian government has responded through regulations such as Presidential Regulation No. 95/2018 concerning the Electronic-Based Government System (SPBE), which emphasizes the integration of data-based services across institutions and improvements to public service processes (KemenPAN-RB, 2023). At the regional level, Bandung City has become a pioneer in developing a digital service ecosystem, particularly in the complex and data-intensive employment sector. This effort is realized through the implementation of the *Bandung Integrated Manpower Management Application* (BIMMA) at the Bandung City Manpower Office, a service platform that integrates data on workforce placement, training, industrial relations, and labor inspection.

Theoretically, digital governance is not only related to the automation of bureaucratic processes, but also the

reorganization of actors, workflows, legitimacy, and organizational culture (Mergel et al., 2019). Welchman (2015) stated that there are at least five main factors that determine the alignment of digital governance within an organization: corporate governance dynamics, external pressures, internet and web governance, organizational culture, and the characteristics of digital presence. These elements require a complex institutional adaptation process, including the utilization of human resource data in the region. Thus, the development of BIMMA presents city governments with classic data governance challenges, such as data segmentation, cross-unit coordination, and accountability for the use of information for employment decision-making.

Empirical evidence shows that digitalization of employment in large cities faces structural challenges. Bandung, for example, recorded more than 103,000 job seekers in 2023, of which 65% were high school/vocational high school graduates (Bandung Manpower Office, 2024). Employee placement rates remain hampered by competency mismatches and a lack of real-time data connectivity between training units, certification bodies, and industry (BPS West

Java, 2024). This complexity demands a data governance model capable of agile responses to the dynamics of the urban labor market. BIMMA exists to consolidate the placement and reporting process, but few studies systematically assess its digital governance and the organizational factors that influence its effectiveness.

The relationship between Welchman's theoretical framework and the empirical conditions of Bandung City lies in the core question of whether the digital innovation built by the city government through BIMMA truly resonates with the dynamics of governance and bureaucratic culture, or merely becomes a technical instrument without fundamental changes in public decision-making. This issue brings us to the need to evaluate digital governance not only in terms of technological infrastructure, but also the character of organizational culture, alignment with external industry demands, and its influence on the performance of employment services.

Previous studies have shown that digital workforce applications in various countries, such as the GovTech Labor System in Singapore and the Digital Employment Registry in South Korea, provide significant benefits in skills mapping and workforce placement. However, their success is largely determined by data integration and organizational readiness (Kim & Park, 2020; Tan & Lim, 2022). In Indonesia, research on regional workforce platforms is still limited; studies tend to focus on health, population, and urban planning services (Firmansyah, 2022). Therefore, research examining digital governance in the context of municipal government workforce management is underdeveloped.

The state-of-the-art in this research is that previous studies have primarily examined digital governance within the context of general public services, while the dimensions of digital governance in the employment sector, particularly at the local government level, remain minimally discussed, including the alignment between organizational dynamics and digital employment platforms. Furthermore, no study has used the Welchman framework to analyze regional employment information systems, particularly BIMMA. Therefore, this article offers novelty through empirical-theoretical integration that assesses how digital governance structures in the employment sector operate at the city level.

This paper presents the results of the exploration of digital governance in the implementation of BIMMA in Bandung City, then continues the investigation of the relationship between the alignment of *digital governance elements and corporate governance dynamics*, *external demands*, *WWW*, *organizational culture*, and *the nature of digital presence* with the effectiveness of employment services. This study seeks to identify the dimensions of digital governance that make employment services adaptive or vulnerable, in order to facilitate the adoption of corrective measures and policies to strengthen workforce information systems.

Based on the description above, this research problem covers the form of BIMMA's digital governance, the extent to which organizational capital and external pressures shape it, and how Welchman's five factors influence the effectiveness of platform implementation. Derivative questions include:

- (1) How institutional dynamics affect data coordination,

- (2) How organizational culture supports or hinders system adoption, and
- (3) how the character of digital presence affects relationships with industry and job seekers.

The purpose of this article is to analyze BIMMA's digital governance through Welchman's framework to explain how organizational dynamics, external demands, and data structures influence the performance of employment services in Bandung City.

II. RESEARCH METHODS

This research method uses a qualitative-exploratory approach (Creswell & Poth, 2016) supported by online research (Reips, 2006) to explore digital facts regarding the implementation of the *Bandung Integrated Manpower Management Application* (BIMMA). This approach allows researchers to explore the dynamics of digital governance and employment policies in the context of local government. Welchman's framework is used as an analytical tool through its five dimensions: *corporate governance dynamics*, *external demands*, *internet and web governance*, *organizational culture*, and *the nature of the digital presence* to read the alignment between digital governance, organizational dynamics, and public service performance in the employment sector.

The research focuses on BIMMA's digital governance as an instrument for data integration and workforce services in Bandung City. The research location is Bandung City, the largest metropolitan city in West Java, serving as a center for government, education, regional trade, tourism, and industry. The dynamic workforce ecosystem places BIMMA in a critical arena for testing the institution's ability to respond to labor market needs and coordinate across actors, making the analysis of its digital governance relevant and significant.

Data collection techniques were conducted through digital observation of BIMMA's interfaces and services, literature studies based on electronic and physical data, searches of government and public social media data, and policy documentation through books, scientific articles, official government websites, official letters, and employment regulations. This technique was chosen because it allows for extensive, up-to-date, and efficient data collection. The limitations inherent in documentation-based studies were minimized through source triangulation, in-depth thematic analysis, and critical dialogue with empirical findings to produce a solid understanding of the reality of BIMMA governance.

III. RESULT AND DISCUSSIONS

1. Existing Condition of the Bandung Integrated Manpower Management Application (BIMMA) System and Implementation Challenges

Bandung Integrated Manpower Management Application (BIMMA) platform is designed as a one-stop shop for employment services for job seekers and industry. The app provides job vacancy information, training,

mediation, and complaints through a web interface and mobile app. The new version of BIMMA, launched by the Bandung Manpower Office (Disnaker) in 2021, has had over 5,000 downloads on Google Play and offers online services, eliminating the need for physical queues. However, data and field findings indicate that BIMMA implementation still faces structural, technical, and cultural challenges. Table 1 presents a summary of the trend in the open unemployment rate (TPT) in Bandung City for the 2020-2024 period.

Table 1.

Development of the Open Unemployment Rate (TPT) in Bandung City

No	Year	TPT Percentage (%)	Source
1	2020	11.19	BPS West Java, TPT indicator for Bandung City.
2	2021	11.46	BPS West Java, TPT indicator for Bandung City.
3	2022	9.55	BPS West Java, TPT indicator for Bandung City.
4	2023	8.83	Bandung City Statistics Agency Release 2023.
5	2024	7.40	Bandung City Statistics Agency Release August 2024.

Source: Researcher's Process, 2025

Graph 1.
Open Unemployment Rate (TPT) 2020-2025



Source: West Java Central Statistics Agency, 2025

The comparison chart above depicts the evolution of the Open Unemployment Rate (TPT) for West Java Province (blue) and the -national average (red) from February 2021 to August 2025. At the start of the COVID-19 pandemic, the TPT in West Java spiked to around 9.82% in August 2021 (BPS, 2025). After that, this figure gradually decreased to reach a range of 6.75-6.77% from 2024 to August 2025. The -national average shows a similar pattern but at a lower level: Indonesia's TPT fell from around 5% to 4.91% in August 2024 and again to 4.76% in February 2025. The decline in both curves indicates an improvement in the post-pandemic labor market, but the unemployment rate in West Java remains well above the national average. This condition makes digital transformation of employment services such as the development of BIMMA increasingly important to accelerate workforce placement and reduce the regional TPT.

2. Dialogue of Theory with Field Findings

a. Corporate Governance Dynamics

Data integration issues within BIMMA reflect governance weaknesses, not simply technological limitations. Implementation evaluations indicate that training graduate data is not automatically entered into the placement module. As a result, the presented job seeker skills profiles are incomplete. A study by the Bandung Manpower Office (Disnaker Bandung) found that while telecommunications infrastructure, connectivity, and funding were deemed

adequate, human resource readiness, internal planning, and sanction mechanisms remained weak (Yahya, 2022).

This study highlights that digital application development requires cross-sector coordination and thorough human resource planning to ensure consistent data flow. Furthermore, the New BIMMA implementation strategy formulated in 2025 identified several internal barriers, such as low public awareness of the application, server disruptions, incomplete *curriculum vitae* (CV) data, and the absence of an automated system to limit training registrations, resulting in frequent duplicate enrollment (Zulva et al., 2025).

These findings indicate that algorithmic improvements alone are not sufficient; improvements to governance design and standard operating procedures are needed to ensure the integrated flow of training, competency, and placement data across units. Other researchers also emphasize that the success of digital transformation depends heavily on changes in organizational culture and interagency collaboration (Mergel, Edelmann, & Haug, 2019), so the Manpower Office needs to strengthen internal coordination while improving the digital literacy of employees and stakeholders.

b. External Demands

The literature on digital labor markets emphasizes that the success of online employment systems depends on the ability to process and utilize real-time job vacancy data. Avila Parra and colleagues (2023) show that analyzing online job advertisements can provide a granular view of the types of skills needed by industries and the dynamics of labor demand, thereby helping governments tailor training policies and promote targeted competency development.

Such data is also useful for job seekers to understand market trends and for training institutions to design relevant curricula. On the other hand, a study of the implementation of New BIMMA by Zulva et al. (2025) found that the platform has not been successful in providing granular data to the industry due to internal issues, such as frequent server outages, incomplete CV forms, and the lack of an automated system to limit training enrollment, which allows participants to register more than once. These limitations make it difficult for companies to effectively select candidates, thus failing to achieve BIMMA's initial goal of matching labor supply and demand.

Research by Yuwono et al. (2024) in the Jambura Economic Education Journal adds that the BIMMA application is not yet optimal because access to information for people with disabilities is still limited and training materials do not always align with participants' interests. This mismatch indicates that participant data and skill needs have not been analyzed in depth for program design. As a result, industry needs for real-time competency data are not met, and BIMMA continues to function as a passive bulletin board, rather than a responsive digital matching engine.

c. Internet and World Wide Web

The concept of government as a platform encourages governments to build a digital service ecosystem that not only provides information but also enables two-way interaction with citizens and businesses and provides data-driven recommendations. Brown, Fishenden, Thompson, and

Venters (2017) and Cordella and Paletti (2019) describe government platforms as networks of shared components, application programming interfaces (APIs), and canonical datasets that enable public and private actors to develop more responsive services. This framework requires intelligent analytics features capable of processing user data to provide automated recommendations, so that the platform is not simply a data repository. Literature on digital transformation during the pandemic indicates that effective digitalization requires overhauling work processes and implementing algorithms to overcome the limitations of traditional bureaucracy.

Eom and Lee (2022) emphasized that changes to the structure and procedures of public organizations, as well as the use of algorithmic bureaucracy—a combination of employees, computing algorithms, and electronic files—can improve service efficiency and transparency. Mergel, Edelmann, and Haug (2019) also added that digital transformation must improve stakeholder relations and change bureaucratic culture. Compared to these concepts, the implementation of BIMMA is still in the early stages of digitalization.

The job placement module is not yet equipped with an analytics system that utilizes training and vacancy data to provide automated recommendations to companies or job seekers. A study of the New BIMMA implementation noted that analytics and two-way communication features are not yet available, so the application is unable to support a proactive workforce matching process (Zulva et al., 2025). This situation indicates that BIMMA has not yet achieved the level of algorithmic bureaucracy envisioned by Vogl et al. (2020) in the context of digital bureaucratic transformation, and is still limited to data digitization and job posting.

d. Organizational Culture

Academic studies on digital transformation emphasize that the successful implementation of new technologies is largely determined by an organization's readiness to adapt, not simply by the availability of hardware and software. Vial (2019) and Tangi et al. (2021) state that digital transformation is a second-order change that alters an organization's structure, processes, and culture; therefore, successful transformation requires improved employee digital competency and adaptive and visionary leadership. Mergel, Edelmann, and Haug (2019) add that digital transformation must improve stakeholder relationships and reform bureaucratic culture to be more open to innovation.

In the context of the pandemic, Eom and Lee (2022) found that public organizations that responded effectively were those that combined digital technology with structural changes and human resource training. Field findings indicate that these cultural prerequisites have not been fully realized in the implementation of BIMMA. Zulva et al. (2025) identified resistance from employees who are more comfortable processing physical files, as well as a shortage of human resources capable of providing 24-hour service.

This situation indicates that technology adoption has not been accompanied by a shift in mindset and the development of employees' digital capacity. Similarly, a study of the Bandung Manpower Office's e-readiness also highlighted weaknesses in human resources and planning,

despite adequate infrastructure and connectivity (Yahya, 2022). Therefore, to achieve effective digital transformation, the Manpower Office needs to implement organizational culture change strategies, such as ongoing training programs, incentive schemes to encourage the use of digital applications, and leadership that emphasizes collaboration and innovation so that BIMMA becomes not only a digital system but also a new, integrated work practice.

e. The Nature of Digital Presence

The theory of digital presence underscores the importance of building platforms as participatory spaces that strengthen relationships between government, citizens, and industry. Studies on the digitalization of the Indonesian public sector warn that digitalization can widen inequality if not accompanied by inclusive participation and digital literacy. In the case of BIMMA, engagement between industry and job seekers remains low because the platform is more of a repository. To realize strategic relationship building, BIMMA needs to be equipped with real-time consultation features, community forums, and integration with training alumni tracking systems.

Table 2.
Summary of Empirical Findings and Theoretical Basis

No	Aspect	Empirical Findings	Theoretical Basis & Sources
1	Data integration & governance	Training data SOPs have not yet flowed into the placement module; many CVs are incomplete.	Digital governance requires data integration and inter-organizational collaboration. Brown, Fishenden, (Thompson & Venters, 2017)
2	Industry Demands	Industry demands real-time competency data -, but BIMMA is just a notice board	<i>Labor market intelligence</i> encourages the use of online job vacancy data to identify skills needs. (Vogl et al., 2020)
3	Web Governance & Analytics	There are no analytics or automated recommendations features in BIMMA	<i>Government as a platform</i> requires APIs and analytics for intelligent recommendations. (Tangi, Janssen, Benedetti & Noci, 2021)
4	Organizational Culture	Employees still use physical files before inputting them into the system.	Digital transformation requires a change in organizational culture and an increase in digital competency. (Wardana, Putri & Umar, 2025)
5	Digital Presence	BIMMA is just a data repository, low participation.	Digital presence theory emphasizes participatory spaces to reduce inequality (Sasongko & Hidayat in Wardana et al., 2025).

Source: Researcher's Process, 2025

The table illustrates the gap between BIMMA's empirical conditions and the theoretical foundations of digital

governance. On the one hand, the main identified issues are fragmented data flows and incomplete CVs, unmet industry demands for real-time data, the absence of automated analytics, a still-manual organizational culture, and low user participation. On the other hand, digital governance theory emphasizes data integration and interorganizational collaboration, the government-as-a-platform concept encourages the use of APIs and intelligent analytics, and digital transformation literature emphasizes changes in organizational culture and the importance of participatory spaces. Comparing these two perspectives, it is clear that BIMMA's development goes beyond simply enhancing technical features; it requires an overhaul of governance, the implementation of predictive analytics, the enhancement of employee digital competencies, and a platform design that enables two-way interaction and the inclusion of all users.

3. Discussion and Novelty Dialogue

Empirical and theoretical findings produce several argumentative points that offer novelty in the study of local digital employment governance:

- a. Prioritize governance over technology.
Field findings indicate that BIMMA's primary challenge lies not in technological capacity, but rather in governance design, specifically data integration, cross-sector coordination, and human resource planning. Digital governance literature emphasizes the importance of collaboration and data integration, so a successful transformation requires a revision of standard operating procedures (SOPs) to automate the flow of data from training to placement.
- b. Data granularity as a determinant of matching.
The industry's need for real-time competency data requires BIMMA to function as a matching engine, not just a bulletin board. A World Bank reference explains that online job posting data can provide granular insights to inform policy. The novelty here is encouraging the integration of training, certification, and work experience data into the BIMMA database so that algorithms can match profiles to industry needs.
- c. Transition from repository to interactive platform.
In theory, government as a platform requires the government to build a platform with APIs and analytics to enable synergistic services. Field findings indicate that BIMMA remains a data repository. This combination of theory and data leads to the argument that BIMMA should be developed into an open platform that allows industry to directly upload vacancies, utilize training data for automated recommendations, and provide feedback features.
- d. Cultural change as a transformative prerequisite.
Digital transformation literature places organizational culture change as a key determinant. Findings regarding reliance on physical files, low employee digital literacy, and a lack of support staff indicate the need for intensive training programs, behavioral change incentives, and leadership support.
- e. Expanding participation to reduce inequality.
Digital presence theory emphasizes participation to bridge the digital divide. BIMMA's lack of inclusiveness for people with disabilities and its lack of interaction

demonstrate the urgent need to add accessibility features, specialized services, and engaging feedback channels.

IV. CONCLUSIONS

BIMMA's success as a digital employment platform hinges on its ability to integrate data, leverage analytics, and drive organizational culture change. Empirical findings indicate that the workflow and standard operating procedures for distributing training graduate data are not yet connected to the placement module, resulting in incomplete competency profiles. Furthermore, automated analytics and recommendation features are not yet available, while employees are still accustomed to manual processes. This gap aligns with research highlighting that the digitalization of public services in Indonesia still faces system fragmentation, digital inequality, and bureaucratic resistance. Theoretically, the concepts of government as a platform and algorithmic bureaucracy demand an ecosystem of shared components, APIs, and predictive algorithms that combine humans and machines to overcome the limitations of traditional bureaucracy. Digital transformation is described as a second-order change that overhauls organizational structures, processes, roles, and culture, and demands the development of employees' digital competencies. The literature also emphasizes that without inclusive planning and adequate digital literacy, digitalization can widen gaps and create social exclusion. Based on the dialogue between empirical findings and theory, key recommendations are: (1) building cross-module and cross-sector data integration through SOPs and a shared data architecture, so that the competency profiles of training graduates can be directly utilized by placement modules; (2) implementing predictive analytics and matching algorithms that leverage training data, experience, and industry needs to provide automated recommendations to companies and job seekers; (3) implementing ongoing training programs for employees to improve digital literacy and drive organizational culture change; (4) redesigning BIMMA as an interactive platform that encourages user participation, including accessibility features for people with disabilities; and (5) strengthening coordination with industry, training institutions, and communities to ensure that collected data is relevant to labor market needs. With a holistic approach encompassing governance, technology, and culture, BIMMA can transform from a data repository into an effective and inclusive workforce matching engine.

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