

The Digital Competency Paradox: Navigating Human Resource Deficits in Public Service Transformation

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ABSTRACT

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Digital transformation in the public sector promises greater efficiency and improved service quality; however, its implementation faces complex challenges related to human resource readiness. This study examines competency gaps among civil servants in supporting the Smart Kampung Program in Banyuwangi through a case study in Giri District. Employing a qualitative-descriptive approach with a survey of 87 civil servants, the research maps both actual and ideal competency profiles across hard skills and soft skills dimensions. The findings reveal a significant competency paradox: while civil servants demonstrate proficiency in basic digital operations (scores 3.62–3.83) and public communication (score 3.87), they face critical deficits in independent troubleshooting (score 2.87) and system error handling (score 2.89). Gaps in collaborative leadership are also identified, particularly in leading cross-unit coordination (score 3.29) and task delegation (score 3.38). The intervention priority matrix highlights Giri and Mojopanggung urban villages as units with the highest urgency, whereas Jambesari and Grogol villages represent best practices. The study underscores that civil servants function more as passive operators rather than autonomous system managers. Recommendations include redesigning advanced technical training programs, strengthening digital leadership, and establishing cross-unit communities of practice to foster sustainable transformation.

INTRODUCTION

The digital era has triggered a wave of transformation that extends across all sectors, including the public sphere. Around the world, governments are increasingly compelled to adopt digital technologies, a phenomenon widely referred to as digital transformation or e-government, which promises to revolutionize the delivery of public services (Dunleavy, 2005; Vial, 2019). This paradigm envisions governance that is more efficient, transparent, accountable, and responsive to the needs of citizens. Through the integration of technology, governments are expected to enhance the quality of decision-making, accelerate service delivery, and strengthen public participation (Alvarenga et al., 2020; Dunleavy, 2005; Vial, 2019).

Yet behind the euphoria of technology, the reality of implementing digital transformation in the public sector is far more complex and challenging. The failure rate of digital initiatives in developing countries has been reported to be considerably high. These challenges are not merely technical, such as inadequate infrastructure, but also institutional, organizational, and, most importantly, human in nature (Davis, 1989; Joshi et al., 2022; Syed et al., 2023). Factors such as rigid bureaucratic culture, resistance to change, and competency gaps among civil servants (ASN) emerge as major obstacles that are often overlooked (Damar et al., 2024; Enaifoghe et al., 2024; Syed et al., 2023). Ultimately, the success of digital transformation is not determined by technological sophistication alone, but by the readiness of the human resources who operate and sustain it (Enaifoghe et al., 2024; Monteiro & Paiva Dias, 2021; Shava & Ndebele, 2024).

Amid the broader challenges of digital transformation, Banyuwangi Regency, Indonesia, has gained recognition as a pioneering case of local government innovation through its *Smart Kampung* program. Introduced in 2016, the initiative has been widely acknowledged both nationally and internationally as an effective model for digitalizing public service delivery (Dinas Komunikasi dan Informatika Provinsi Jawa Timur, 2016; Manar et al., 2021). Unlike the dominant *Smart City* paradigm, which is often urban-centric and heavily reliant on advanced infrastructure, the *Smart Kampung* concept was deliberately designed to align with the socio-geographic realities of Banyuwangi, where the majority of administrative areas are rural villages. By situating digital innovation at the village level, the program emphasizes empowerment, inclusivity, and improved accessibility of public services for rural citizens (Daroini et al., 2023; Saputra & Pratama, 2023; Yunas et al., 2023). This strategic departure from the urban-focused *Smart City* framework reflects a critical adaptation of global digital governance discourses to local contexts. It further illustrates how subnational governments in developing countries can reinterpret digital transformation not only as a technological agenda, but also as a vehicle for social equity and rural development.

The primary objective of the *Smart Kampung* initiative is to integrate information and communication technology (ICT) into local governance to enhance the effectiveness of public service delivery, stimulate productive economic activities, improve the quality of education and healthcare, and alleviate rural poverty (Aziiza & Susanto, 2020; Sugiharti et al., 2021). The program encompasses the installation of fiber-optic

networks across 189 villages, the provision of public Wi-Fi access, and the development of online population administration services (Fanani, 2019).

Despite its celebrated image and numerous accolades, several studies and reports indicate that the implementation of the program faces significant challenges in practice. Evidence shows that community participation remains low, citizens' understanding of the program's substance tends to be superficial, and human resource capacity at the village level is not yet fully prepared to embrace change (Ana Fitrianti et al., 2021; Aziz & Putri, 2021; Baru et al., 2019; Lintang Pamungkas, 2020; Putra et al., 2024; Putri Aji et al., 2024). Moreover, difficulties in application usage and the suboptimal quality of services continue to persist. This contradiction between formal recognition and grassroots realities creates a paradox that warrants deeper investigation, particularly from the perspective of civil servant readiness as the frontline of service delivery.

A substantial body of scholarship has explored e-government implementation more broadly, emphasizing the importance of developing digital competencies among civil servants (Cahyarini, 2021; Khoironi, 2020; Meiyanti et al., 2018; Sतालhis & Novaria, 2024), as well as outlining various competency models relevant to the digital era (Ashdaq et al., 2024; Ayyasy & Maelani, 2024; Destiana, 2023; Habibani & Frinaldi, 2025; Sarjito & Pantja Djati, 2025; Trisno Sakti Herwanto et al., 2024). Yet, a significant gap persists at the micro level. Few empirical studies have systematically mapped the competency gaps between actual and ideal conditions among frontline civil servants and middle managers, actors who serve as the backbone of service delivery in digital transformation initiatives. This study seeks to address that gap by analyzing the competency paradox within the *Smart Kampung* program in Banyuwangi. By examining both hard and soft skill dimensions, the research contributes to a more nuanced understanding of human resource readiness in local digital governance and provides an evidence-based foundation for designing targeted interventions to strengthen sustainable transformation.

Based on the research questions, the objectives of this study are threefold: (1) to map the actual competency profiles of civil servants in Giri District across both hard and soft skill dimensions; (2) to identify the ideal competency profiles expected in alignment with the program's targets; and (3) to critically analyze the gaps between actual and ideal conditions. The urgency of this research lies in the pressing need to provide evidence-based feedback to the Banyuwangi Regency Government. Without a thorough understanding of the real capacities of its implementing personnel, innovative programs such as *Smart Kampung* risk stagnation or even long-term failure. The significance of this study is twofold. Practically, its findings can serve as a foundation for formulating more targeted and effective human resource development policies, particularly in the design of training programs and career development pathways for civil servants. Theoretically, this research contributes to the literature on public administration and digital governance by offering an in-depth empirical case study on the dynamics of bureaucratic competencies within the context of digital transformation in a developing country.

METHODS

The method explains how the research is conducted, including research design, data collection, research instruments and analytic methods. This part should be narrated. This study adopted a qualitative-descriptive design to examine competency gaps among civil servants (ASN) in Giri District, Banyuwangi Regency. While primary data collection employed a structured questionnaire with 94 Likert-scale items (1–5), the analytical emphasis was placed on qualitative interpretation of perception patterns regarding actual and ideal capabilities.

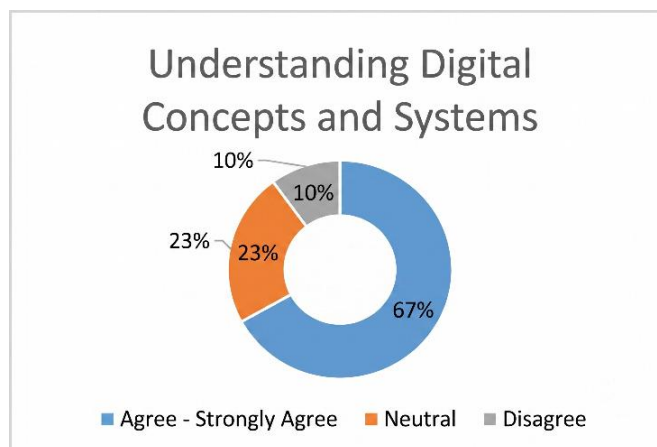
Primary data were obtained from a survey of 87 civil servants across the District Office, four urban villages (Mojo-pangung, Penataban, Boyolangu, Giri), and two rural villages (Grogol, Jambesari). Respondents represented diverse work units, positions, educational backgrounds, ages, and years of service, providing a rich basis for analysis. Secondary data were drawn from a systematic review of national and international journal articles, government reports, and relevant media concerning digital transformation, civil servant competencies, and the Smart Village Program.

Data was analyzed in three stages. First, descriptive statistics (mean, median, mode) were applied to identify competency strengths and weaknesses. Second, qualitative content analysis incorporated literature and respondent demographics to contextualize quantitative findings. Third, a gap analysis compared actual competency scores with an ideal benchmark (5.00), with discrepancies categorized to determine priority levels for intervention.

RESULTS

1. Mapping of Hard and Soft Skills Competencies

A. Hard Skills (Technical Competencies)



First, in the dimension of *Understanding Digital Concepts and Systems*, the average score obtained was 3.83 out of 5, with a median of 4.0 and a mode of 4. This indicates that most civil servants (ASN) possess a strong understanding of digital concepts and systems, with 67% of respondents rating “agree” to “strongly agree,” 23% remaining neutral, and 10% disagreeing. Cross-validation by work unit revealed notable differences: Jambesari Village recorded the highest score (4.21), followed by Boyolangu Urban Village (4.14) and the District Office (3.89), while Penataban Urban Village scored the lowest (3.44). These variations suggest differing levels of

readiness and mastery of digital concepts across administrative units.

Second, in the dimension of *Operational Skills in Digital Systems*, the average score was 3.62 (median 3.5; mode 4). Sub-competency analysis showed that basic system usage (3.74) and citizen service delivery through SPBE (3.68) were relatively strong, compared to operating the *Smart Kampung* system without IT team assistance (3.21) and resolving system errors within 15 minutes (2.87). This demonstrates a consistent decline in proficiency from basic operational skills to advanced troubleshooting, underscoring a gap in more complex technical competencies.

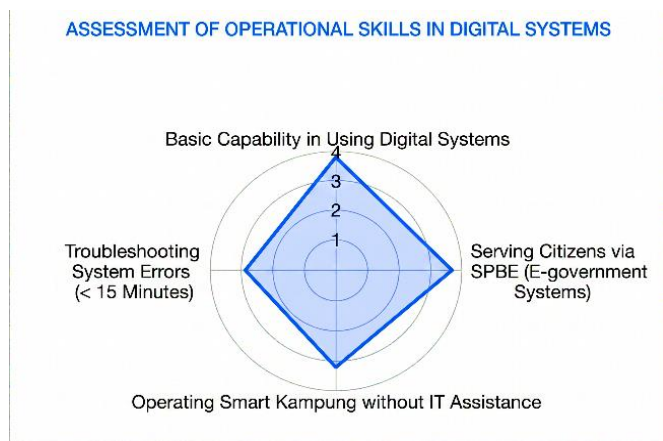


Figure 2 Operational Skills in Digital Systems

DIGITAL DATA MANAGEMENT AND REPORTING

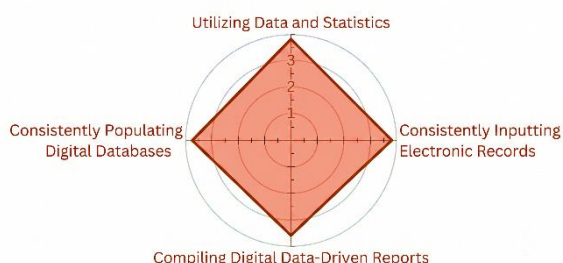


Figure 3. Digital Data Management and Reporting Skills

Third, in the dimension of *Digital Data Management and Reporting*, the average score reached 3.71 (median 4.0; mode 4). Specifically, the ability to use data and statistics (3.76) and perform electronic administrative recording (3.81) were relatively well developed. However, preparing data-driven reports (3.59) and ensuring consistent data entry (3.69) showed areas requiring improvement. A strong positive correlation between educational background and scores in this dimension further indicates that academic qualifications influence data management capabilities among civil servants.

Overall, the technical competencies of civil servants in Giri District appear solid at the levels of conceptual understanding and basic operations. Nevertheless, they continue to face significant challenges in mastering advanced technical skills, particularly in rapid troubleshooting and independent system management. These findings highlight the critical need for more targeted and in-depth training interventions on advanced technical competencies to ensure the successful digital transformation of public services through the *Smart Kampung* program.

B. Soft Skills (Non-Technical Competencies)

Based on the assessment results, the soft skills of civil servants (ASN) in Giri District demonstrate a relatively balanced profile across dimensions, though certain areas, particularly cross-unit leadership require further strengthening. First, in the dimension of Management and Leadership Skills, the average score was 3.54 out of 5 (median = 3.5; mode = 3). Sub-dimensions show a varied distribution of strengths: measurable work planning (3.71) and cross-unit coordination (3.68) emerged as relatively strong competencies. Conversely, independent decision-making (3.42), task delegation (3.38), and leading inter-unit coordination (3.29) were identified as weaker points requiring attention. Cross-validation by years of service revealed that civil servants with more than six years of experience scored 0.4 points higher in leadership than their less experienced counterparts, indicating that tenure plays a significant role in shaping leadership capacity.

MANAGEMENT AND LEADERSHIP CAPABILITIES

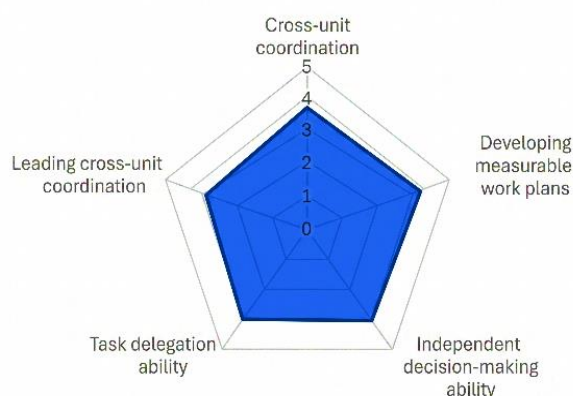


Figure 1 Management and Leadership Capabilities

Adaptability and Continuous Learning

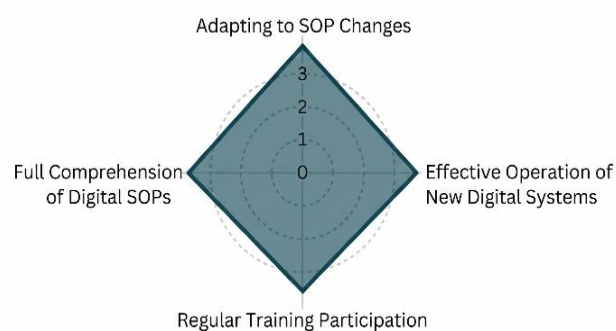


Figure 4 Adaptability and Continuous Learning

Second, the dimension of Adaptability and Continuous Learning achieved an average score of 3.76 (median = 4.0; mode = 4). The ability to adapt to changes in standard operating procedures (3.84) and to respond to new digital systems (3.71) were rated positively, while participation in routine training (3.58) and comprehensive understanding of digital SOPs (3.72) indicate room for improvement.

Communication and Public Engagement

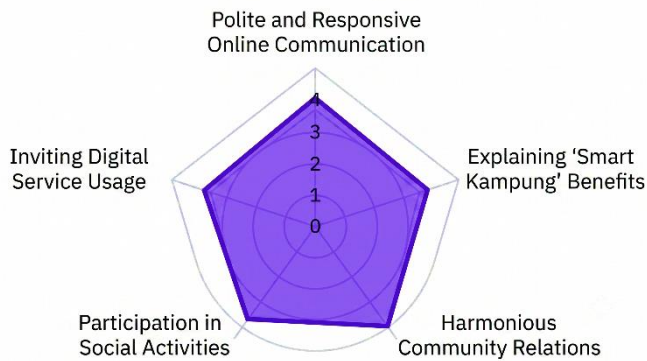


Figure 5 Communication and Public Engagement Skills

Third, the dimension of Communication and Public Engagement recorded the highest scores among all soft skill dimensions, with an average of 3.87 (median = 4.0; mode = 4). Online communication ethics, characterized by polite and responsive interaction (4.12), emerged as the strongest aspect, followed by maintaining harmonious relations with village officials (3.95).

Other competencies, such as explaining the benefits of the Smart Kampung program to citizens (3.79), encouraging citizens to use digital services (3.71), and participating in community activities (3.68), were categorized as good yet still open for further improvement to broaden the scope and effectiveness of public communication. Geographical validation indicated that civil servants at the village level scored 0.3 points higher in public communication than those at the sub-district or urban village levels, possibly due to the higher frequency of direct interaction with the community.

The soft skills of civil servants in Giri District are relatively strong, particularly in public communication and adaptability. Nevertheless, strategic leadership, especially in inter-unit coordination and task delegation, remains an area in need of reinforcement. Strengthening these dimensions will be critical to ensuring the successful implementation of digital public service transformation under the Banyuwangi Smart Kampung Program.

C. Competency Gap Analysis

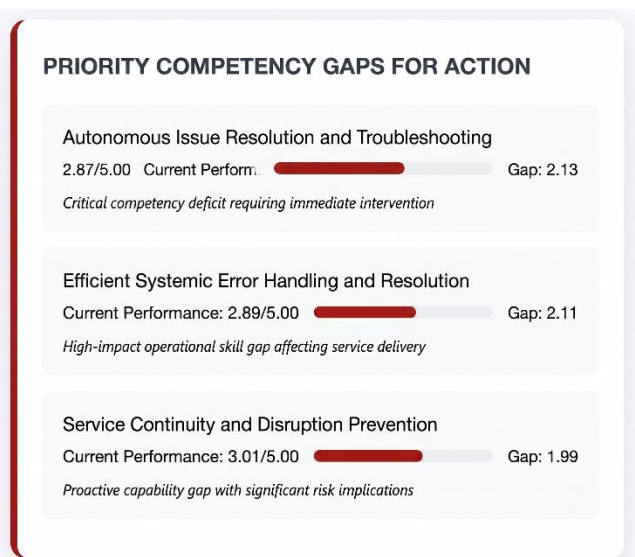


Figure 6 High Priority Competency Gaps

The results of the competency gap analysis reveal a significant disparity between the actual competency levels of civil servants (ASN) in Giri Subdistrict and the ideal targets required to ensure the successful transformation of digital public services within the Smart Kampung Banyuwangi Program.

In the High Priority Gaps category, three competencies demand immediate intervention. First, independent troubleshooting skills recorded an average score of 2.87 out of 5, with a gap of 2.13 points from the target level, indicating a critical deficit in technical capacity that directly affects operational continuity. Second, the ability to resolve system errors promptly scored 2.89, leaving a gap of 2.11 points, which poses significant implications for the speed of restoring digital public services. Third, preventive skills in minimizing service disruptions achieved a score of 3.01 with a gap of 1.99 points, reflecting weak preventive capacity in mitigating risks that could hinder service delivery.

MEDIUM PRIORITY GAPS



Figure 7 Medium Priority Competency Gaps

Meanwhile, the Medium Priority Gaps category highlights three additional competencies that also require strengthening, though with a lower degree of urgency. The ability to operate the Smart Kampung system without technical assistance scored 3.21 with a gap of 1.79 points, pointing to limited independence in managing core systems. The competency of leading cross-unit coordination scored 3.29 with a gap of 1.71 points, signaling the need for more structured leadership development to foster cross-sector collaboration. Finally, delegation skills scored 3.38 with a gap of 1.62 points, which may impede team effectiveness if not adequately improved.

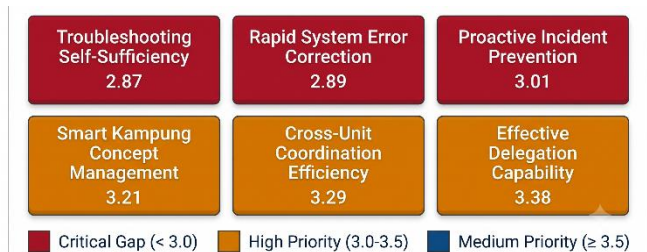


Figure 8 Competency Gap Visualization Matrix for Public Servants in Giri Sub-District

The findings illustrate that the most critical gaps are concentrated in technical problem-solving and preventive capacities, which are directly linked to the stability of digital public services. Alongside these challenges, managerial

competencies such as coordination and delegation reveal moderate but persistent weaknesses that could affect the overall effectiveness of organizational performance. Together, these patterns underscore the need for both immediate technical reinforcement and gradual leadership development to sustain the objectives of the Smart Kampung Banyuwangi initiative.

D. Heatmap of Work Units

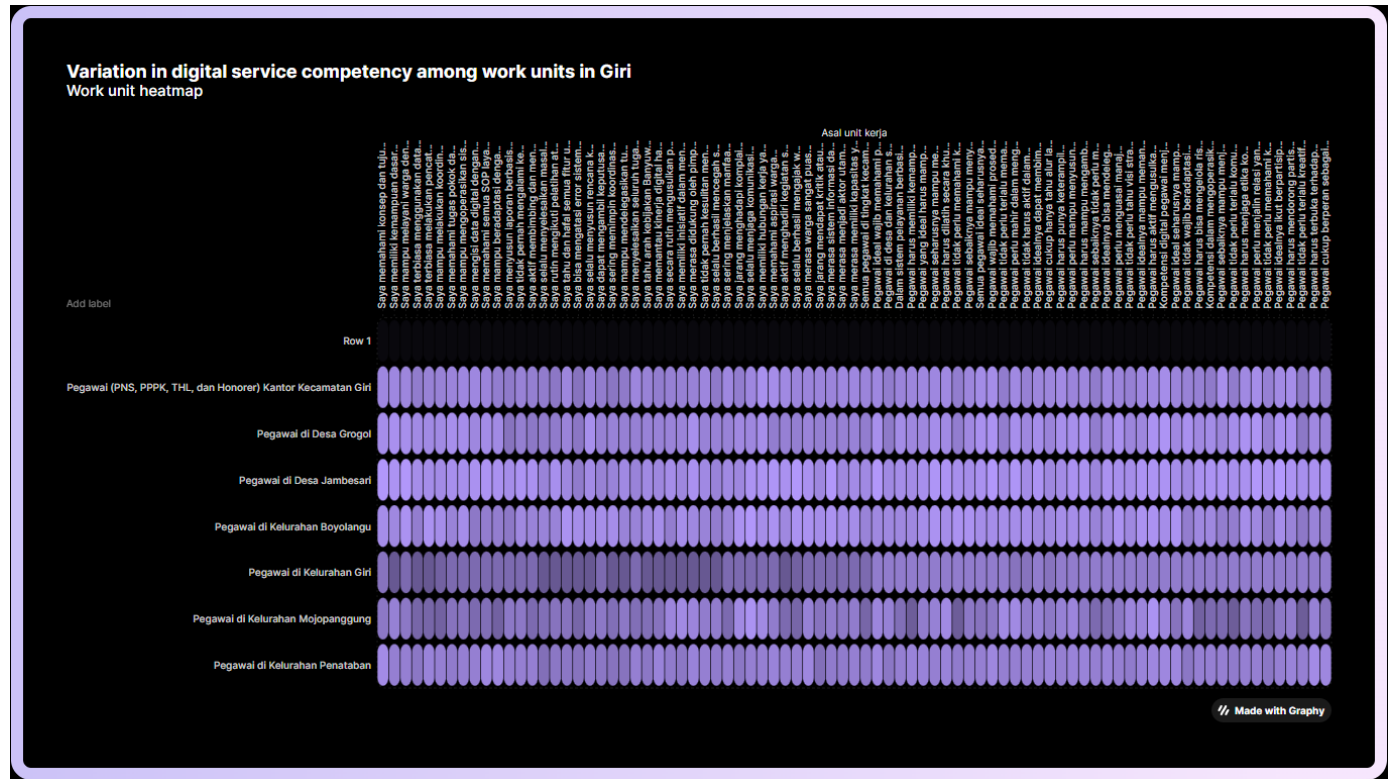


Figure 6 Heatmap of Variations in Digital Service Competency Across Work Units in Giri Sub-District

The heatmap of digital service competency variations in Giri District reveals a complex reality regarding the digital readiness of local government organizations at the grassroots level. This competency map demonstrates a broad spectrum of capabilities, ranging from work units that have already achieved adequate digital standards to those still struggling with fundamental challenges in technology adoption. Such variation is not merely a matter of differing numerical scores but reflects deeper structural conditions, including access to training, infrastructure support, and organizational culture that fosters digital transformation.

The distribution patterns highlight the phenomenon of a micro-level digital divide, where work units within the same district demonstrate vastly different levels of digital maturity. This disparity becomes particularly significant when considering that all units are expected to provide public services at relatively uniform standards. The competency gaps identified not only influence the internal efficiency of each unit but also directly affect the quality of public services delivered to communities across the district.

Jambesari Village emerges as the work unit with the highest level of digital maturity, demonstrating exceptional consistency across almost the entire spectrum of digital competencies. Its strength lies not only in high numerical scores but also in the balanced distribution of skills across various domains. The unit has successfully achieved solid technical mastery, responsive problem-solving capabilities,

effective cross-unit coordination, and optimal use of data for decision-making. These achievements reflect the presence of systematic learning and capacity development mechanisms, positioning Jambesari as a model of best practice for other units.

Grogol Village holds a strategic position as the second-highest performer, with competency characteristics that display stability at the upper-middle level. Grogol’s primary strengths lie in its strong conceptual understanding of the

Smart Village framework and its adaptability to evolving standard operating procedures. Although it lags slightly behind Jambesari in some advanced technical aspects, Grogol demonstrates a robust foundation for further development. Its competency profile illustrates that successful digital transformation is not solely dependent on technical expertise but also on conceptual clarity and organizational flexibility.

Boyolangu Urban Village presents an intriguing profile with strengths in digital public service delivery and cross-unit coordination. As an average performer, Boyolangu demonstrates a relatively solid foundation yet still shows significant room for improvement in advanced areas such as data utilization for reporting and system innovation. This pattern indicates that Boyolangu has mastered the operational basics of digital service delivery but has yet to fully optimize the potential of data and technology for strategic improvement and innovation.

The Giri District Office, as the center of governance, presents a paradoxical profile, showing strength in conceptual understanding and adherence to standard operating procedures, but weaknesses in practical implementation such as problem-solving speed and the use of statistical data. This reflects common challenges faced by government units with high coordination responsibilities but limited technical capacities. The gap between strong conceptual knowledge and weak technical implementation represents a critical issue requiring special attention in capacity-building programs.

Penataban Urban Village demonstrates consistent stability but has not yet achieved breakthroughs into the higher category. Its competency profile suggests the presence of systematic approaches to capacity development, although progressing at a relatively modest pace. The main weaknesses lie in innovation and digital training, indicating that this unit remains in the consolidation stage of basic skills before advancing toward innovation and more advanced knowledge-sharing practices.

Mojopanggung Urban Village presents a concerning profile characterized by fluctuating scores and significant weaknesses in core competencies such as technical mastery and problem-solving. These fluctuations suggest inconsistency in capacity development and potentially fundamental knowledge gaps. While some indicators show moderate achievements, Mojopanggung's overall profile underscores the urgent need for a structured, comprehensive, and sustainable intervention to establish a solid foundation before advancing toward more complex development.

Giri Urban Village represents the most critical case in the district's digital competency landscape, with consistently low scores across almost all indicators. This condition reflects deep systemic gaps in basic digital operational skills, coordination, and system development initiatives. Giri's profile suggests an urgent and intensive intervention is required, one that not only focuses on skill enhancement but also addresses fundamental changes in management practices and organizational culture. The identified deficiencies point to gaps not only in technical skills but also in readiness, requiring a holistic approach and long-term commitment.

DISCUSSION

The findings of this study reveal a paradox within the competency profile of civil servants in Giri District. On the one hand, they demonstrate adequate proficiency in routine and procedural digital tasks. On the other hand, there is a notable fragility when confronted with situations that demand technical autonomy and adaptive leadership. This discussion interprets these gaps within a broader theoretical framework.

A. Competency Gap among System Operators

The most significant competency gaps were identified in independent troubleshooting and error handling. This indicates that civil servants are currently more skilled as system operators than as problem solvers. While they can follow established procedures, they become powerless when the system encounters anomalies. This phenomenon reflects a broader challenge in human resource development in the digital era, where training often emphasizes "how to use" rather than "how to fix." Such a dependency on external technical support creates a serious operational risk, particularly in village-level offices where access to expert assistance may be limited. Delays in service, declining public trust, and the potential undermining of efficiency objectives in the Smart Kampung program are likely consequences.

The lowest scores in independent troubleshooting (2.87) and error handling (2.89) directly reflect the low collective change efficacy among civil servants. Change efficacy refers to a shared belief in the collective capacity to implement necessary actions for change. While civil servants report confidence in basic operational competencies under normal conditions (average score 3.74), this collective confidence collapses in the face of anomalies or errors.

According to Weiner (2009), efficacy is shaped by perceptions of task demands, resource availability, and situational factors (Caci et al., 2025). Civil servants perceive troubleshooting as a complex task that lies outside their routine responsibilities, a perception reinforced by limited skill resources. This lack of confidence is further compounded by an organizational culture that provides little autonomy or space to experiment with technical solutions, leading to the belief that they lack sufficient capability (Chen et al., 2015). Such low change efficacy generates significant operational risks, as reliance on external IT teams often results in service delays, reduced public trust (Gillespie & Daly, 2025), and a failure to meet the efficiency goals of the Smart Kampung initiative.

B. Deficit in Collaborative Leadership in the Digital Era

Significant gaps in the ability to lead cross-unit coordination and delegate tasks highlight managerial and leadership challenges. Digital transformation is not solely about technology but also about dismantling bureaucratic silos to create integrated services. The findings suggest that while civil servants can coordinate, they lack the capacity to lead such collaborations proactively. This weakness is rooted in a hierarchical and compartmentalized bureaucratic culture that discourages cross-functional initiative, particularly from middle-level managers. Without strong collaborative leadership at the district and sub-district levels, the inherently cross-sectoral nature of the Smart Kampung program risks remaining fragmented and unsynergized.

The combination of technical operator gaps and weak collaborative leadership poses serious implications for the sustainability of Smart Kampung. Heavy reliance on external support reduces system resilience, while weak leadership across units hampers innovation and adaptation to community needs. To truly be "smart," a village requires not only digital infrastructure but also civil servants who are technically proficient, managerially adaptive, and socially collaborative. The competency gaps revealed in this study represent critical obstacles to achieving this condition.

The relatively low scores in cross-unit coordination (3.29) and task delegation (3.38) also point to weaknesses in change commitment. Change commitment refers to the shared determination of organizational members to implement change (Weiner, 2009). Digital transformation requires breaking down bureaucratic silos and strengthening cross-functional collaboration, a significant departure from traditional ways of working (Wagner & Fain, 2018). The weak scores in collaborative leadership suggest that the collective determination to carry out such structural changes is still limited. Change commitment is closely influenced by change valence, or the extent to which organizational members value the change. Although civil servants may individually recognize the importance of coordination, a hierarchical bureaucratic culture reduces the value attached to proactive collaboration at lower or middle levels. Without active top-level leadership that promotes and rewards cross-unit collaboration (Cinar et al., 2021; Fa Zuhri et al., 2023), change valence will remain low, resulting in weak collective commitment to change (Filho, 2015; Kurbanoğlu et al., 2013). In this context, the Smart Kampung program risks being implemented in a fragmented rather than integrated manner.

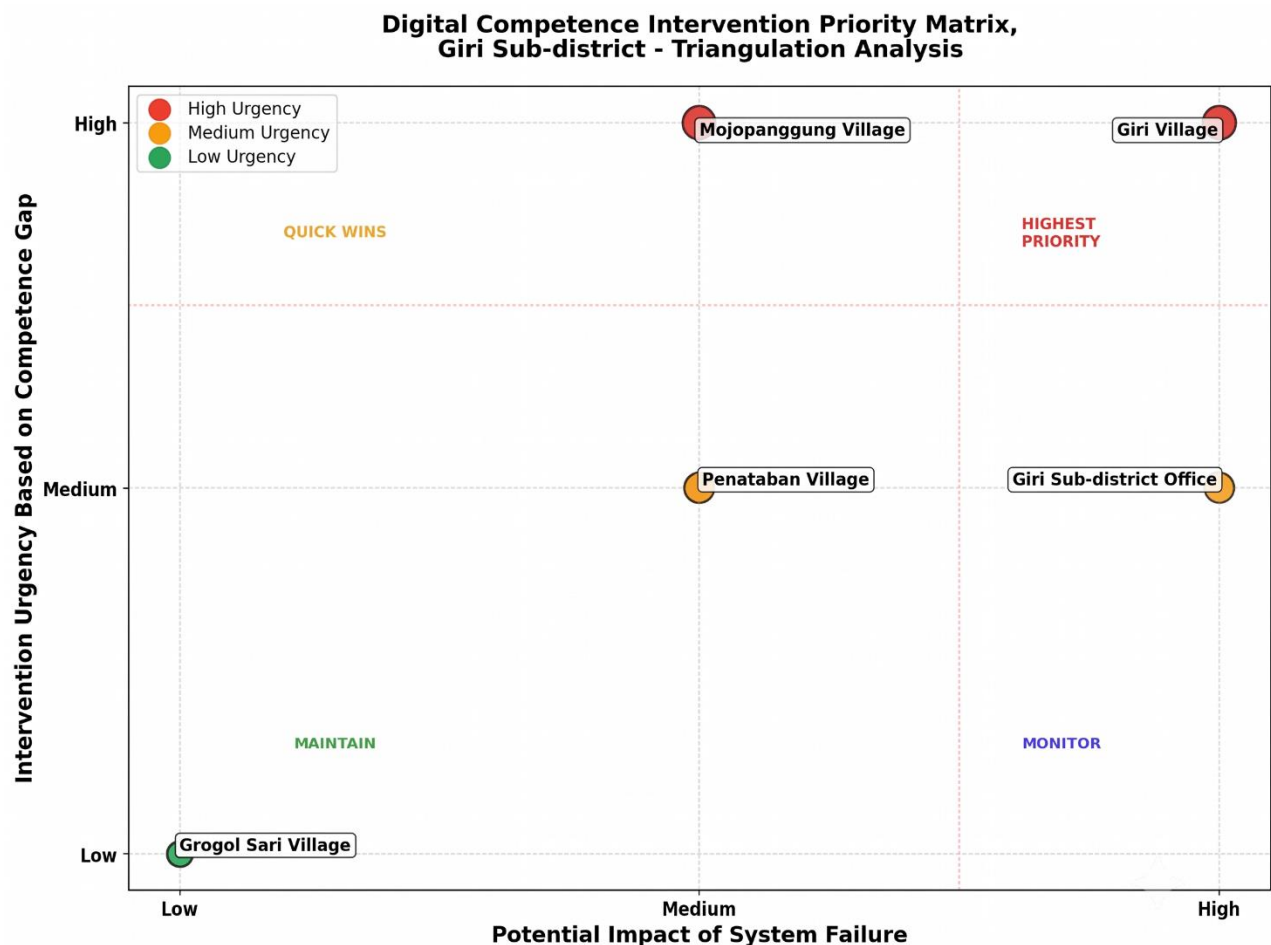


Figure 7 Triangulated Matrix of Digital Competency Intervention Priorities in Giri Sub-District

Based on the results visualized in the intervention priority matrix, there is a clear urgency to systematically strengthen civil servants' digital competence in support of public service transformation. The matrix identifies five key entities that require different levels of intervention according to the potential impact of system failure and the urgency of competency gaps.

Giri Sub-district and Mojopanggung Sub-district are classified as the highest priorities, combining both high potential system impact and high urgency. This indicates critical digital competency gaps that require immediate intervention given their strategic role in program implementation. Failure to address issues in these two areas could jeopardize the overall success of digital public service transformation.

The Giri District Office falls within the "Monitor" category, with high potential impact but moderate urgency, suggesting that while it plays an important role in coordination and oversight, its current competency gaps can still be managed through regular monitoring. Penataban Sub-district is categorized as a "Quick Win," with moderate impact and urgency, meaning that targeted interventions could yield tangible improvements with relatively modest effort.

Grogol and Jambesari villages are placed in the "Maintain" category, with both low impact and low urgency, reflecting relatively strong digital competencies that require only maintenance to preserve current performance. This prioritization provides a clear roadmap for policymakers to allocate resources effectively and efficiently, focusing primarily on Giri and Mojopanggung as strategic entry points to ensure the

The distribution of work units within the matrix offers critical insights into the dynamics of digital transformation in government organizations. The fact that villages, despite their lower administrative status, sometimes outperform sub-districts highlights the role of non-structural factors such as leadership commitment, organizational culture, and capacity development. These factors may prove more influential than formal structures in shaping digital transformation outcomes.

The emerging pattern further illustrates the importance of differentiated strategies. Units in the highest priority quadrant require intensive and comprehensive interventions, encompassing not only technical training but also reforms in management systems and organizational culture. Conversely, units in the quick-wins quadrant can be optimized through more targeted development programs.

CONCLUSION

Based on a comprehensive analysis of the competency gaps among civil servants in Giri District in supporting the Smart Kampung Banyuwangi program, this study successfully identified a significant paradox in competency patterns. The findings reveal that although civil servants have mastered basic digital operational skills with average scores ranging from 3.62 to 3.83 and demonstrated adequate public communication skills with a score of 3.87, there are critical gaps in advanced technical competencies, particularly independent troubleshooting (score 2.87) and system error management (score 2.89). This paradox highlights the reality that civil servants function more as passive operators rather than

independent system managers. Moreover, deficits in collaborative leadership are reflected in the relatively low scores for cross-unit coordination leadership (3.29) and task delegation (3.38), which undermine the synergy required for effective digital transformation. The intervention priority matrix further identifies Giri and Mojopanggung urban villages as the units requiring the most urgent interventions, while Jambesari and Grogol villages demonstrate higher levels of digital maturity that may serve as best practice models.

The practical implications of these findings point to the need for a redesigned human resource development strategy that is both holistic and differentiated. Priority policy recommendations include the development of advanced technical training programs with a problem-solving focus, the strengthening of digital leadership capacities for mid-level managers, and the establishment of cross-unit communities of practice to reduce hierarchical dependency. Theoretically, this research contributes to the literature on public administration by confirming the importance of change efficacy and change commitment as critical determinants of digital transformation success in developing countries. Future research is encouraged to expand the geographical scope through mixed-method approaches and longitudinal studies to assess the effectiveness of the recommended interventions. The long-term success of the Smart Kampung program depends not only on technological infrastructure but also on the ability of civil servants to evolve from passive operators into adaptive and collaborative system managers.

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