CHAPTER I

INTRODUCTIONS

1.1 Background

Autonomy provides local governments the authority to manage and oversee local interests independently, in line with the aspirations of the community within the framework of the Unitary State of Indonesia. Through autonomy, the government is responsible for advancing its region and achieving the welfare of its local communities.

With the advancement of information and communication technology, the concept of electronic governance or E-Government emerged, aiming to enhance transparency, responsiveness, accountability, and effectiveness in government management. The implementation of E-Government in Indonesia began prior to the issuance of Presidential Instruction (*Inpres*) No. 3 of 2003, which accelerated the adoption of digital-based government systems. This initiative was introduced earlier through Presidential Instruction No. 6 of 2001 concerning Telematics (Telecommunication, Media, and Information), promoting the development of information infrastructure, capacity building of human resources, and utilization of telematic technology across sectors.

The implementation of E-Government not only aims at modernizing the government system but also supports the implementation of good governance. According to the United Nations Development Programme (UNDP), good

governance encompasses nine main characteristics: participation, rule of law, transparency, responsiveness, consensus, equality, effectiveness and efficiency, accountability, and strategic vision. The implementation of E-Government can help fulfill these characteristics, particularly in terms of transparency, effectiveness, efficiency, and government accountability.

Dramaga Subdistrict, located in Bogor Regency, West Java Province, is one of the rapidly developing strategic areas. This subdistrict has a growing population and a suburban character, making it an interesting area for research. Dramaga was officially established as a subdistrict on January 11, 1992, based on Government Regulation No. 3 of 1992, covering an area of 24.23 km² with 10 villages characterized by high population density. The 2020 census recorded a population of 110,374, with an estimated 113,555 people as of mid-2023. The limited digital infrastructure and stable internet access in some villages are among the main challenges in implementing e-government in Dramaga. Additionally, the low level of digital literacy among rural communities remains a barrier to optimizing digital technology potential.

Other challenges include resource constraints, both in terms of funding and the skills of human resources in utilizing digital technology. This can hinder the efforts of village governments in adopting and effectively utilizing digital technology to improve institutional performance. The selection of Dramaga Subdistrict as a research site is highly relevant to the theme of e-government and local governance for several reasons: Dramaga exhibits the characteristics of a

rapidly growing suburban area, with the presence of higher education institutions and modern healthcare facilities. The gap between the potential for digital technology development and infrastructure challenges, as well as human resource limitations, creates an intriguing dynamic for research in the context of e-government implementation. As part of Bogor Regency, which is within Jakarta's metropolitan area, Dramaga represents a region experiencing rapid transition and needing to adapt to the demands of modernized local governance.

Given the issues above, the researcher is interested in examining how E-GOVERNMENT IMPLEMENTATION AND HUMAN RESOURCE MANAGEMENT IN SUBDISTRICT GOVERNANCE in the Dramaga Subdistrict Government, Bogor Regency.

1.2 Problem Questions

Based on the background above, the Problem Formulation in this study are:

1. What are the gaps of e-government implementation in Dramaga Subdistrict?
2. How does human resource management affect the implementation of e-government in Dramaga Subdistrict?
3. What strategies are adopted by Dramaga Subdistrict to face the challenges in implementing e-government and human resource management?

1.3 Research Purposes

This research have some purposes, such as:

1. Researcher will identify and analyze the gaps in the implementation of e-government in Dramaga Subdistrict.
2. Researcher will examine the role and influence of human resource management in the implementation of e-government in Dramaga Subdistrict.
3. Researcher will identify and explore the strategies to overcome challenges faced by Dramaga Subdistrict in implementing e-government and human resource management.

1.4 Research Benefits

This research examines Dramaga Subdistrict as a case study to identify spe cific human resource gaps in e-government implementation. The study will analyze how technological adaptation difficulties among government employees impact service efficiency and what strategies can be employed to bridge this gap. By addressing these challenges, this research aims to contribute practical insights for improving human resource capacity and ensuring a smoother digital transition in local governance.

Theoretically, this research aims to contribute additional references and insights into the discussion of E-Government implementation in local governance, particularly in terms of human resource management. It seeks to provide a deeper understanding of the challenges and strategies involved, serving as a valuable

resource for future studies with a similar focus. This study is expected to stimulate discussions on the role of E-Government in enhancing transparency, accountability, and effectiveness in governance practices.

Practically, the findings from this research are anticipated to contribute to addressing the gaps in human resource capacity in the Dramaga Subdistrict government. By identifying effective strategies and policies, this study aims to support the ongoing efforts to improve the implementation of E-Government. It will also provide recommendations that could be applied to other regions facing similar challenges, thereby enhancing the adoption and optimization of digital governance solutions.

1.5 Literature Review

In conducting research on a case, of course there is nothing that is truly new or that someone has already done research before. Literature review itself has the aim of gaining an understanding regarding the problem being discussed and then formulating it to solve a problem to be researched. In this case, researcher tries to collect information from previous writings that is appropriate to the topic to be researched.

The first study, conducted by Hendrian et al. (2024) from Universitas Negeri Jakarta, highlights the significance of e-government in enhancing public service performance. The research employs a literature review method with a qualitative data analysis approach. It reveals that the success of e-government implementation hinges on key factors such as competent human resources,

sufficient budget allocations, and robust infrastructure. These elements are essential in fostering an environment conducive to the effective delivery of public services. The study shows that when these components are in place, e-government initiatives can significantly improve transparency and operational efficiency in public administration.

Another relevant study, conducted by Rusliandy and Zulfikar (2022) at Universitas Djuanda, focuses on the implementation of the SI-CANTIK application as an employee management innovation in the Bogor Regency Government. The journal analyzes this application using a descriptive qualitative method with interviews and observations. The study reveals that the SI-CANTIK application has significantly improved employee discipline. However, there are still challenges such as application integration and the monitoring of discipline. It is recommended that the application be integrated with other systems to enhance efficiency.

Another pertinent study, conducted by Ummah et al. (2022) at Universitas Pembangunan Nasional Veteran Jakarta, investigates the implementation of e-government through a website in Cianjur Village, Bogor Regency. The journal examines the integration of e-government as part of the digital village program. The method used is a qualitative approach. The research reveals that the barriers to implementation are most directly related to the low level of public awareness of technology. To make the digital village program work, there is a need for state intervention to develop internet access and infrastructure.

Related research is conducted by Nugroho and Purbokusumo (2020) in Universitas Gadjah Mada which examines the readiness of a local government to implement e-government. The attention in the study is on policy frameworks, infrastructure and manpower. The premier findings: The state of readiness for e-government is still relatively low in several locations and governments need stronger signals from their citizens that status quo conditions, rather than broached, need to be bolstered by public commitments to quality through technology. The study is conducted with an open-ended responses and the secondary data and literature and paper study to assess the present readiness level.

The most recent study was reported by Gartika et al. (2024) and was published in the eJournal of eDemocracy and Open Government (JeDEM), investigates the determinants of success in e-Gov implementation in Bali Province. It has been found that local leadership's commitment, regulation, planning, governance, and human resource are key determinants for the success of e-government. Based on that, leadership commitment has been identified as the most influential factor. Qualitative method being employed in this study using the in-depth interviews and SWOT analysis to capture the dynamics of e-government implementation in the region.

In addition, Sandra Willia Gusman (2024) emphasize that the challenges of Indonesia’s digital transformation go beyond infrastructure and regulations. Their study highlights that uneven digital literacy, bureaucratic rigidity, and cultural resistance often hinder effective implementation. They argue that e-

government must be seen as a broader social transformation, requiring strong leadership, institutional readiness, and inclusive strategies to bridge the digital divide.

Complementing this, Elmawati (2023) analyzes the implementation of e-government in East Luwu Regency through the indicators of support, capacity, and value. The study finds that while political and institutional support exists, capacity-related limitations—such as insufficient human resources, restricted budgets, and inadequate ICT infrastructure—remain significant barriers. Nevertheless, the value dimension is visible through improvements in public information services. The research concludes that sustainable e-government requires not only regulatory support but also systematic investment in human resources and infrastructure to ensure that benefits are experienced both by government institutions and citizens.

1.6 Theoretical Framework

1.6.1 E-government and Public Service Innovation in Local Government

E-government is a new ideal type of paradigm in public administration, which comprise strategic utilization of information and communication technologies to reshape the governance processes and improve service delivery (World Bank, 2020). The notion has grown far more sophisticated, expanding from mere digitization of existing procedure through radically implementing modern technology to overhaul the way governments operate. Roziqin & Fajrina (2021) suggests that e-government

is not only about the technological adoption, but also a re-imagining of how public institutions work and engage with people in a digital society.

Clearly then, e-government is really about using online platforms to make government more effective, transparent and accountable. This covers the installation of consolidated online portals, mobile apps, e-payment gateways and automated administrative processes that improve over all governance. The United Nations E-Government Survey (United Nations, 2024) describes e-government: “the use of ICT and its application by the government for the provision of information and public services to the citizens”. This definition stresses the focus on citizens of e-government as a way to connect public bodies with communities.

The concept of electronic government is not restricted to the technological about organizational development, policy innovation and cultural transformation of public institutions. It is a comprehensive vision of how governance can be modernized, which encompasses not just technical but also human, institutional, and regulatory dimensions of public management. This wide perspective is necessary in order to understand the transformative character of e-government and its role in reforming the relationship between citizens and the state in the information age.

The digital transformation in the public service innovation of e-government is a landscape of multiple digital transformational forms and collectively processes of governance and service delivery. These innovations

can be classified into three basic types: process innovation, service innovation, and governance innovation, all focusing on different areas of public administration. Process innovations seek to increase internal efficiency of public administration with the use of digital technology, such as electronic document management systems, workflow automation and integrated databases. Pratama (2019) emphasizes that by simplifying the bureaucracy, such innovations simplify administrative process, reduce paperwork, and increase operational efficiency, thus allowing public officers to direct more resources away from administration to service rendering. It might answer to digital filing systems, automated approval workflows, and enterprise-wide financial management systems that enable more effective use of resources. Service innovations are new mechanisms for delivering goods or public services that use the Internet or other digital technologies to improve accessibility, convenience and the user experience (Damanpour & Schneider, 2009). These range from mobile apps to web portals and digital kiosks through which citizens can avail of government services remotely, instead of physically going to the government office. Disruptive services have replaced the once tedious activities that included insurance applications, payment of taxes, soliciting for documents and many other processes that can be completed and accessed from everywhere on the globe where internet is available. Cinar et al., (2022) concerning governance innovation to wider changes in how public organizations relate to their

stakeholders and manage governance processes. They range from participatory budgeting platforms allowing citizens to shape resource allocation, over digital citizen engagement tools allowing for a constant dialogue between government and communities, to open-data initiatives driving public administration towards more transparency and accountability. Government innovations radically alter the citizens' relationship with the state, enabling an open, participative and transparent modalities of operating.

The effective roll-out of e-government initiatives depends on a number of key factors that together shed light on how well the process of implementing digitalization is being managed in the public administration space. Recognition of these determinants are of utmost importance in laying down holistic strategies towards both technical and non-technical issues on e-government deployment. HRM comes up as a key role player in the success of e-government and development of necessary digital skills amongst public officials. As emphasized by Afrilia et al. (2024), people working in the government will need to acquire new digital skills which include the ability to operate digital technology, digital literacy, and change management skills to successfully transition to digital government. This requires overall capacity building programs where public servants trained on how to use digital tools and are able to change over time as technology evolves.

Suri et al. (2024) postulates that leadership commitment and organizational support is another important driver of e-government implementation. Clear political direction, sustained political determination and institutional support fosters an environment for digital innovation in public administration. This involves the battle for resource allocation, cross-departmental working and shaping a culture wherein technology change and innovation is embraced. E-government initiatives run the risk of institutional inertia and lack of visionary leadership.

Staged implementation and strategic planning greatly increase the chances of success for e-government (Hakim et al., 2022). This includes articulating clear roadmaps with realistic deadlines, focusing on high-impact projects, and embracing agile practices that enable ideation and prototyping, as well as iteration and refinement, in response to user feedback and new developments. A well-planned strategy also needs to include strong monitoring & evaluation systems to track progress, highlight barriers, and respond appropriately to the implementation of strategies.

Citizen participation and user-centred design principles are getting recognized more and more being key factors for success of e-government (Napitupulu, 2014). This guarantees that digital services are built around real community needs and wishes, rather than just be a machination of bureaucratic thinking. Higher adoption, greater satisfaction with e-government services etc are the results of User-End features and facility

provided by government such as User-Friendly interfaces, design, and regular demand for citizens' opinion.

Although it has the potential for a revolutionary impact, implementation of e-government at the local level is replete with challenges that stand in the way of meaningful transformations. These have technical, institutional and socio-cultural dimensions and require multi-pronged approaches to successfully navigate and address them. Technical and infrastructure limitations are also immense obstacles, especially in resource-poorer settings. A significant number of local authorities battle with insufficient digital infrastructure, poor internet accessibility or outdated IT systems unable to support advanced e-government tools. Saragih (2024) adds constraints from the financial aspect, avoiding investments for technology development and maintenance. Overcoming these challenges will require a strategy for allocating resources, creative financing arrangements, and possible collaboration with private sector technology companies.

Institutional inertia causes another major hurdle; bureaucracy and resistance to change existing in brick and mortar companies easily obstruct any digital overhaul. E-government initiatives are opposed by public servants who see digitalization as challenging existing power relations or their jobs, which results in (whether passive or active) resistance from various administrations. This resistance must be addressed with holistic

change management, involving articulate reasoning on the benefits of digital transformation, engagement of stakeholders in the design, and phased implementation to permit adjustment and learning.

Scarce resources also seriously limit e-government uptake, especially in local government that is not likely to have significant budgets for digital ventures. The costs of technology development and deployment far exceed available resources, and the costs of applying developed technology is very high which make it almost impossible for local municipalities to employ those technologies (UN, 2024). Such financial limitations can however be alleviated by novel financing structures such as public-private partnerships, donor co-financing, and e-services with revenue generation models (Dias, 2020). Regulatory obstacles and policy gap also hinder the growth of e-government, with current legal systems often unsupportive of, or challenging to, electronic processes and transactions. Concerns surrounding digital signatures, data privacy, cybersecurity, and electronic record keeping, lack clear regulatory framework in most jurisdictions that has not been exhaustively worked (Chukwudi et al., 2023). Forming supportive laws and rules is important as it represents the spine that the introduction of e-government successful stands.

Efforts to address the issues of e-government require strategic approaches that considers technical and non-technical aspect for public

sector digitalization. These can be adapted in local conditions with lessons and best practices for successful models applied globally.

Leadership commitment is the keystone of successful e-government adoption, and is defined as the vision, authority, and resources for the digital transformation. Good leadership is really about being clear about digital governance strategies and have stakeholders buy into it and sponsors innovation, even when that innovation faces obstacles or resistance (Yudha & Susanto, 2019). Leaders must take the fight to the cultural changes that digital transformation warrants, demonstrating resilience and a willingness to look for new ways to do governance and delivery.

Sufficient budgetary provision is required to sustain e-governments, including financial investment, human resources and technology infrastructure. The prioritization of strategic resource allocation involves focusing on high-impact creative solutions, as well as maximizing the use of available resources, including using alternative financing instruments such as public-private partnerships or phased approaches that distribute costs over time (Hardiyansyah et al., 2020). Funds allocated for e-government capacity-building are investments in programs that support technical and management skills in building and sustaining e-government projects.

Active involvement of user is potential to become responsive, effective long term and open e-governance by involving multiple perspectives in design and development stage. Nuryadin et al. (2023)

explains his is intended to cover involving citizens, CSOs, private sector organizations and different government departments to co-create digital solutions that respond to real needs not perceived needs. User-involvement in the design of e-government generates a sense of ownership amongst stakeholders thus promoting adoption rates and the sustainability of e-government.

Citizen-centered service design is a move away from the traditional bureaucratic view, with its emphasis on administrative convenience, to one based on the needs, preferences and experiences of users. This includes user research, interface design, and iterating existing services based on user feedback. They are also citizen-centric concerning accessibility making the e-government services usable to people with different levels of digital literacy and people with disabilities (Anas, 2024).

1.6.2 Subdistrict Government and Its Importance in Local Public Services

The subdistrict is an important administrative subunit of Indonesia's decentralized governance and a crucial intermediary between district/municipal governments and local communities. Regulation of the Government Number 17 of 2018 explains that the subdistricts form one of the regional governance structures and function as an intermediary institution for public service provision at the local level (Simangunsong & Hutasoit, 2018). This positioning places sub-districts in the role of

translating government policies at the higher levels to meet community-level grassroots needs.

In the Indonesian administrative structure, the subdistricts are governed by regent or mayor through a territorial extension of the district/municipal government. This framework promotes accountable governance by being closer to the people they serve, hence responsive and contextually relevant and appropriate. Its intermediary location makes the subdistrict able to translate the general development goals of the region into practical local strategies and to facilitate the local community's aspiration upward to the district level (Efriandi, 2021).

The level of subdistrict has strategic importance as it is the primary point of interface between people and administration, particularly in rural and semi-urban cultural contexts where access to district/municipal administration could even be hampered by geographical and infrastructural barriers. This configuration allows subdistricts to become local governance nodes that bring basic public services closer to the local populace and help promote inclusive participation in decision making. In accordance to Law Number 23/2014 regarding Regional Governance, it was clear that the formation of this network represents the government of Indonesia's commitment to keep government close to people, and reflect central government's policy in decentralized administration.

Subdistricts' role is thus a complex one which includes activities typical of general administrations as well as specialized service delivery activities. They have several mandate areas, namely community agency coordination, public service delivery when of village/urban ward-scope, public peace and security in their jurisdictional area, as well as delegated duties from district/municipal authorities (Hoffman et al., 2024). Such functional versatility places subdistricts as integrated service delivery units that can meet a range of community needs under a single central administrative roof.

Subdistrict governments are supported with a strong legal basis and government regulations as stipulated in Law 23/2014 on Regional Government and in Government Regulation 17/2018. Regarding legal structures it is extended the definition of sub-districts as public legal persons, with individual boundaries and administrative competences. Both required functions for all subdistricts and discretionary responsibilities that can differ between them depend on delegated authority from district/municipal authorities, therefore allowing for a flexible framework that adapts against local contextual conditions.

The subdistrict head is the highest official in the subdistrict, and is responsible for the subdistrict apparatus and reports directly to the regent/mayor. The authority of the subdistrict head includes supervising the villages, coordinating a variety of sector agencies at the sub district level,

enacting programs that are planned at the district/municipal level and facilitating improved public service (BPS, 2025). This leadership position calls for a delicate balance of ensuring compliance with institutional and corporate decisions while also meeting the needs of community members, requiring a combination of both administrative and interpersonal skills. The subdistrict staff of specialized technical or administrative agents serve the subdistrict head in the fulfillment of the subdistrict's many roles. These staff oversee different service departments such as civil registration, social welfare program delivery, local economic development programs and infrastructure maintenance cooperation. The performance of subdistrict governance largely relies on the competency and professionalism of this administrative machinery, which indicates the significance of the quality of human resources for local public service provision.

The subdistricts acts as one of Indonesia’s public service delivery system anchor, as they are the primary points of access for many administrative services, especially for those Indonesians with low mobility or digital connectivity. The proximity of such sub-county structures to the villages and communities means that these facilities are more accessible than the district level, which in turn reduces the cost and time spent by citizens for accessing government services. This accessibility feature is particularly important in areas of difficult terrain, poor transport infrastructure or dispersed settlement.

The activities provided by these services from each of the subdistrict offices are vast, according to Utomo et al. (2023) that includes civil registration (birth, death, marital), social welfare program participation and tracking, licensing of microenterprises, land use verification and community development program coordination. This package transforms subdistricts into multi-service "one-stop service centers" access points for a range of administrative provisions by people in order to make decision making processes easy and reduce bureaucracy. Beyond the provision of services, subdistricts support coordination across villages/urban wards in the area targeted and the provision of services and a more equitable distribution of resources through a coordinated approach to development. This organizing function allows district-level programs to be implemented more efficiently by localizing these to the district context while preserving overall policy consistency. In addition, subdistricts enable bridging between the community-based initiatives and higher level regional development strategies promoting synchronization and interlinkages across governance scales (Armiwal et al., 2018).

1.6.3 Adoption of Technology and Digitalization in Local Government's Innovation

The term digitalization has been used to describe the transition from manual based systems to digital systems (Heiskala et al., 2016). Government digitization represents a paradigm shift from manual systems to integrated

digital systems harnessing digital technologies and data-driven processes for improving governance at the local level. It requires more than just technological transformations, but also a re-organization of administrative entities, re-engineering of processes and cultural adaptation. This shift increases transparency and accountability through better data management, automation of records, and stronger monitoring systems (Janowski, 2015). The use of digital systems can help district governments audit more efficiently and citizens can track service delivery more easily.

The government digitalization is currently being accelerated, there are more and more Indonesian local governments who apply electronic-based government systems which is backed with Presidential Decree Number 91 of 2018 as its operational guideline. This evolution suggests a broader recognition that digital transformation is not a technical refresh, but a reimagining of the relationship between government and citizens. The pathway is also demonstrated through various digital initiatives like improving the quality of service delivery and governance. Studies was conduct by Jatnika et al. (2024), demonstrated considerable example on the West Java Digital Service program with strategically utilizing digital economic framework for village potential and connecting urban-rural development disparity. This program shows the potential for digitalization to be a driver of balanced regional development, on which technological benefits spread from cities to rural areas.

Government workforce digital maturity is a particularly important factor in the success of technology adoption. This includes not only technical acumen but also adaptive skills and digital dexterity on the part of government employees (Burtscher et al., 2024). But this realignment potential in the face of digital initiatives is only partly addressed without parallel investment towards developing human capital and organizational learning systems. Gusman (2024) contends that the technological base that lies beneath the drive to digitalize—such as the availability of hardware, network readiness and system integration capabilities—represents a fundamental precondition for successful digitalization. The availability, quality and scalability of this infrastructure are critical for how local governments are able to implement and scale digital service delivery models.

Among the biggest obstacles of digitalization is the digital divide-both geographically and socially, and unequal technology availability in different areas (World Bank, 2020). This lack of digital infrastructure could become an impediment to development and aggravate pre-existing inequalities. The existence of limited digital abilities from the government officers is hampering their effective use of technology, whereby the importance of human capital development or capacity building (Sarah, 2024) is in terms of organisational cultural adaptation and training curriculum or program all the more necessary. It also involves risks of data protection, privacy, and cyber security (Sarjito, 2024). With governments accessing ever

more citizen data, strict legislation and technical measures must keep sensitive information safe and ensure trust in digital governance is upheld.

1.6.4 Human Resource Management in Local Government Innovation

Human resource management (HRM) is an essential building block for the successful implementation of innovation in local government. This long-term and strategic function consists of several closely interrelated dimensions that include human capital planning, competencies development, leadership development, and performance and behavior management tools. Based on Roziqin & Fajrina (2021), a wide HRM will guarantee that public officials have adequate skills-sets and capabilities to adequately facilitate digital public services. Adapting human resources to broader innovation goals guarantees that the workforce development is closely linked to the improvement of service delivery. A good approach integrates innovation into the culture of the company, and does not make it an isolated initiative. This view reframes the role of human resource from reactive technology procurers to the catalysts of change, and playing a critical role in nurturing a workforce that is agile, innovative and digitally-led. This strategic role of HRM goes beyond the mere administrative role and serves as a driver for organizational and innovation culture change.

There is a clear correlation between employee competencies' profiles and digital public services' effectiveness. Highly digital literate and skilled public servants are more skilled in engaging citizens, effective services

delivery and innovative solution to problem solving. This relationship results in a number of observable benefits, such as decrease in processing time, increase in public satisfaction and system usage, and better quality of service.

The relationship between competency and performance is exercised through several mechanisms: better technology-interface management, new data-use possibilities, and better communication digital strategy. With government employees who have the mix of technical capacity and public service mindset at their core, those two pieces combine and empower otherwise mundane digital tools to become responsive vehicles for service delivery by, for and with citizens.

A holistic approach to enhancing human capital goes beyond standard training methods involving multi-faceted growth initiatives. Such a scaffold combines both technical capabilities and non-technical soft skills like critical thinking, teamwork attitudes, and creative problem solving methods. The intertwined technical and adaptive needs are also addressed and a basis for sustainable innovation is established.

This technique also acknowledges the critical role of cultivating supportive organizational climates that foster innovation through cultivating psychological safety, free experimentation and reward systems. Through promoting cross-departmental collaboration and breaking down departmental and institutional silos, government can harness shared

expertise and varied perspectives to better tackle wicked public service problems.

Local councils need to take a long-term investment perspective in lifelong skills development to ensure its workforce remains current in the face of advancing technology. These initiatives need to be viewed not as discretionary spending but as a core investment in infrastructure development that shapes the quality of service delivery and an organization's ability to nimbly adapt.

Successful professional development programs use cyclical learning methods that allow learners to acquire skills, apply them and benefit from feedback and learning reinforcement. This perpetual learning model provides public servants with up-to-date knowledge on changing technological terrains and metacognitive skills for independent adaptation to future innovations.

Policies and programs that address media literacy are also core to workforce development in governments. Such programs need to be phased with tiered pathways to allow for different baseline competences and clear developmental routes from the acquisition of basic operational skills to becoming technically autonomous. Holistically speaking, digital literacy encompasses technical skills, access to and reading information, digital communication, understanding of online privacy and digital governance issues. The combination of these different approaches means that public

servants develop not just technical skills, but also the reflection and critique involved in responsible digital service provision.

Technical training in specialized areas such as data analytics, cybersecurity and digital service management fill critical capability gaps within government workforces. Pratama (2019) shows that domain-focused training allows public officers to tackle the technical aspects of digital governance instead of leaving everything to be done by outsiders. These technical courses should incorporate the right mix of theory and hands-on experience that will allow the training content to be assimilated into the plant environment. Effective programs include situations specific to real governance, problems collaboratively resolved, and mentoring implementation projects that connect classroom learning with the operational world.

Leadership skills are an ultimate game changers for digital transformation, it decides whether the transformation creates a prosper or fiasco. Unique executive training programs provide public sector managers with the strategic insight, change management tools, and technical skills that they require to successfully lead organizational change. Afrilia et al. (2024) Stress that digital leadership programs must prepare leaders to manage uncertainty, create innovation climates, and harness organizational resources toward digital priorities. Successful digital leadership programs mix training in technical knowledge and develop adaptive leadership skills, equipping

public servants to manage both the technological complexities and the human dimensions of change. Such programs are evolving to help create collaborative leadership models, which prefer distributed authority, collective wisdom and cross-functional teamwork over traditional hierarchical models.

Resistance to change is an important obstacle to the adoption of innovation, and it can range from passively objecting to actively fighting against new technology and operations systems. Such resistance can be attributed to various factors such as skill deficits, anxiety of workflow interference, preference for the status quo and lack of clear value propositions of the suggested change.

Another hindrance that became a catalyst is weak technological skills which adding the insult to practical barriers, further obstructing the way when attitudinal opposition is behind us. Differential digital skill levels in government workforces are causing operational blockages as innovation adoption rests in few hands with the necessary expertise, which in turn affects the scalability and sustainability of digital work.

Saragih (2024) also observed that budget constraints have long been the barrier for having “comprehensive training programs” to improve the capability of the workforce. Negative financial impact are reduced the duration of the training period, curtailed program scope, reduced access by

the participants and inadequate support for transfer, a factor that decreases overall effectiveness of learning interventions.

The disconnect between investment and return in the development of human capital is especially problematic because it requires trade-offs among time periods such as short and long run, and the clock for producing budgetary results is always now, now, now. This time lag often results in underinvestment in developmental efforts even though they are vital to longer term innovation capabilities.

E-government is particularly affected by differences in the digital adaptation between generations. Younger staff tend to be natively facile in digital systems, whereas long-serving staff steeped in hard-won institutional knowledge can struggle with some aspects of technology change, even when they have decades of public service expertise.

These generations differences call for management styles where the strengths of each are used to counterbalance their shortfalls. Reverse mentoring models, collaborative learning and customized adaptation pathways accounting for a range of learning styles and initial skills are often successful components.

The transition from traditional bureaucratic styles to novel tech-focused regimes is probably the biggest challenge any government's digitalization can face. Such a shift requires not just recalibration of the organisational values, the way we operate, reward and who we are, but the

very identity of the organisational practice which many have built over decades of stable administrative systems.

Cultural change requires complete management plans to handle the formal aspects of organizations (policies, procedures, structures), as well as informal, embodied characteristics (attitudes, relationships, unwritten rules). Effective leadership commitment, consistent expression of compelling change rationales, visible early successes and patience as the inevitable bumpiness of adaptation process occurs is essential for successful management of this transformation.

Well-designed incentive models and structured schemes of support for mentorship may also go a long way to motivate staff to engage in innovation and professional development activities. Good incentive plans include elements of extrinsic (praise, advancement, bonuses) and intrinsic (autonomy, opportunities for mastery, purpose) motivation to cover the spectrum of motivation.

Mentoring programmes establish nurturing developmental relationships that allow for a passing-on of wisdom, create psychological safety in learning, and offer tailored support in facing transformational difficulties. When done right, these initiatives expedite the process of competency building and strengthen the fabric of an organization by building relationships across generations and across departments.

Cooperative learning methods capitalizes on group knowledge and perspective to improve the capacity of both the individuals and the organization. These models involve other ways to organize communities of practice, peer learning groups, multi-disciplinary project teams and problem-solving workshops that cut across traditional organizational lines.

The cooperative learning can be fruitful in terms of reduced training costs, higher relevance through applied context, more robust organizational networks, and also the potential for innovation by bringing fresh eyes to a problem. Such models prove particularly helpful in government settings where specialized expertise is frequently distributed in silos across various offices and agencies.

Performance-oriented assessment models offer systematic tools to measure the effectiveness of training and progress of technology adoption. These models set explicit standards for acceptable proficiency, hold stakeholders accountable for development results, and rely on data for ongoing program improvement.

Good evaluation systems should integrate quantitative data (completion rates, test scores, implementation figures) with qualitative data (quality improvements, innovation processes, feedback from stakeholders) in order to have a fuller appreciation of the development impacts. Paired with effective feedback systems, these assessments become powerful learning tools rather than mere boxes to check.

Formal recognition of accomplishments in digital competencies achieves a number of objectives such as motivation, skill visibility raising, career paths, competences mapping. These recognition systems could take the form of digital badges, competence certificates, job-related roles, and career paths that reward digital competencies as well.

Recognition systems need to set intermediate achievement goals that offer both immediate recognition and longer-term development opportunities. When well-executed, such systems build virtuous circles: Recognition begets more development, leading to an ongoing increase of the organization's capacity.

The coordination among multi-stakeholders makes a synergy to build the partners to develop human resources through collaboration of the two strengths and resources. These partnerships foster knowledge transfer, resource sharing and creative program development that would be challenging for any one entity to achieve on its own.

Coordinated action requires purposeful partnerships that are established on a clear governance, joint objectives, sprawling, companion resource contribution, and an equitable distribution of those benefits. When managed well, such partnerships grow sustainable development ecosystems that can evolve to meet emerging capacity needs in the digital transformation of government.

On one hand, by fostering public-private partnerships, governments keep away from all the knowledge and the latest technology that only industry can afford. These partnerships facilitate knowledge spill over, access to expertise training, technology exposure, and innovation techniques that hasten the journey of the public sector into capabilities developments (OECD, 2017).

Successful public–private partnerships favour the private sector's effectiveness and innovation while considering the public sector's equity and governance. When designed thoughtfully, these structures generate mutual value by increasing government's capacity, deepening private sector understanding of the public dimension, and building a commitment to improve efficiency in the provision of public service.

Holistic digital skills frameworks outline clear statements of development that are applicable across a range of public service roles. Such frameworks specify what it means to be at progressively higher levels of competence; they describe developmental paths and promote shared understanding of skill needs across organizations.

Good frameworks cover general digital competences that are needed across all positions as well as specific competences for roles. When connected with larger HRM frameworks, such as recruitment and development, performance, career development, etc., these frameworks are

powerful mechanisms for mediating alignment between individual development needs and organizational capability requirements.

Strategically linking HR planning and digital transformation efforts ensures that workforces are cultivated to serve future organizational goals. This integration facilitates capacity building proactively, not reactively during implementation.

Successful integration is dependent on joint strategic development that includes human resource experts as well as the digitalisation professionals in the planning and implementation process together. When done right, this integration leads to virtuous cycles in which the development of human capabilities drives the pace of digital transformation, and vice versa, while informing future competency requirements for continual workforce development.

1.7 Research Methods

1.7.1 Research Design

This study employs a qualitative descriptive research design to analyze the implementation and impact of e-government on human resource management in subdistrict governance, with a focus on Dramaga Subdistrict, Bogor Regency. The descriptive approach seeks to provide a comprehensive understanding of the phenomena under study, generating accurate insights into the challenges, strategies, and implications of e-government implementation at the subdistrict level.

The research combines data collection from interviews and observations to examine the real-world challenges and opportunities in managing human resources for e-government. The goal is to explore how subdistrict-level governance adapts to digital transformation and to identify solutions for improving human resource capacity. Primary data from government institutions and civil society informants will be supported by secondary data from academic literature, previous studies, and policy documents related to e-government and subdistrict governance.

1.7.2 Research Subject and Object

The subjects of this research include government institutions and civil society stakeholders who are directly involved in or impacted by e-government initiatives in Dramaga Subdistrict. These informants are vital for obtaining data related to human resource challenges and strategies in implementing e-government at the subdistrict level.

Government Institution:

1. Officials from the Dramaga Subdistrict Office
2. Officials from the Regional Secretariat of Bogor Regency governance division

Civil Society:

1. Resident of Dramaga Subdistrict

1.7.3 Data Source

Data are empirical collected by researchers with the aim of solving problem or answering research questions. Research data can be obtained from various sources that are collected using various techniques.

1. **Primary Data**

   Data obtained directly through structured interviews with informants and observations of e-government activities in Dramaga subdistrict. These provide firsthand insights into the challenges and impacts of e-government implementation.

2. **Secondary Data**

   Supporting data sourced from books, journals, official reports, and previous research studies on e-government, subdistrict governance, and human resource management. These provide context and validation for the primary findings.

1.7.4 Data Collection Technique

Data collection in research needs to be monitored so that the data obtained can maintain the level of validity and reliability. Data collection in this study will use the following techniques:

1. **Interview**

   Structured interviews with government officials and civil society representatives to gather insights into the implementation of e-government, challenges in human resource management, and

potential solutions. These interviews will use a checklist of prepared questions to ensure comprehensive and consistent data collection.

2. **Observation**

   Field observations in Dramaga Subdistrict to examine how e-government initiatives are implemented at the subdistrict level. This includes observing government activities, community participation, and digital infrastructure usage, enabling synchronization between policy goals and on-ground realities.

3. **Data Analysis**

   In the data analysis, the researcher aims to collect information based on the perspectives of government officials and civil society representatives involved in e-government implementation in Dramaga Subdistrict, Bogor Regency. This data serves as supporting information to analyze the impact of e-government on human resource management within subdistrict governance. Using qualitative insights from structured interviews and field observations, combined with secondary data from policy documents and academic studies, the researcher seeks to identify challenges, opportunities, and strategies for improving human resource capacity in the context of e-government implementation.

1.7.5 Data Analysis Technique

Data analysis carried out in this study was carried out throughout the study form the start. Since this type of research is a descriptive qualitative research, it must be analyzed since the start of the research. The following is the process of analyzing research data:

1. **Data Reduction**

   Data reduction is the researcher's way of summarizing the core data obtained and focusing only on the important things. Summarizing and focusing on essential data while discarding irrelevant information to ensure clarity and relevance. This step simplifies the data, ensuring that only information aligned with the research objectives is retained.

2. **Data Presentation**

   After the data is reduced, the next step is to present the data. This step can be done by presenting an organized and structured set of information. Organizing and structuring the reduced data into an accessible format, enabling interpretation and hypothesis development. This involves combining qualitative insights from interviews and observations with supporting data from secondary sources.

3. Conclusion

The last thing that the researcher did in the data analysis stage was to draw into a comprehensive conclusion from the data source that had been obtained. This step is intended to synthesizing the findings to generate meaningful conclusions about the impact of e-government on human resource management in subdistrict governance. The conclusions will highlight challenges, opportunities, and actionable recommendations for improving e-government implementation at the subdistrict level. By combining the quantitative data and the descriptive qualitative researcher can simplify the findings that can be gained in this study.