

Review Article

Systematic Literature Review of Digital-Based Public Service Innovation in Civil Servant Pension Administration Services

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Abstract: Digital transformation in the public sector has driven various service innovations, including pension administration services for State Civil Apparatus (ASN). This study aims to analyze the development of digital-based public service innovations in pension administration and identify the benefits and challenges of their implementation. This study used the Systematic Literature Review (SLR) method by reviewing various relevant scientific articles from national journals that discuss the digitalization of public services and pension administration. The literature selection process was carried out systematically to identify, evaluate, and synthesize research findings related to digital-based pension service innovations. The review results indicate that digitalization of pension administration services through the use of electronic service applications and platforms can improve administrative efficiency, accelerate data verification and pension fund disbursement, and increase transparency and accountability in public services. The implementation of digital services also contributes to simplifying bureaucratic procedures and increasing service accessibility for retirees. However, the literature review also revealed challenges in implementing digital pension services, including low digital literacy among retirees, limited access to technological devices, and suboptimal dissemination of service information. The findings of this study indicate that the success of digital-based service innovations depends not only on technology, but also on human resource readiness, the organizational capacity of government institutions, and the level of public acceptance of the use of digital technology. Therefore, developing digital-based pension services requires a comprehensive strategy.

Keywords: E-Government; Pension Administration; Public Service Innovation; Public Service; Service Digitalization.

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1. Introduction

The development of information and communication technology has brought significant changes to governance systems in many countries. Digital transformation in the public sector has become one of the main strategies to improve the quality of public services, administrative efficiency, and transparency in government administration. Governments across the world are increasingly encouraging the implementation of digital technologies through various e-government policies as an effort to improve bureaucratic performance and expand public access to government services.

Innovation in the process of delivering public services within government bureaucracies arises due to certain motivations, namely: career, idealism, self-fulfillment, money (salary), prestige, professional recognition, and potential for spin-off business. These motivations

occur at the individual level, while at the organizational level they are created for the propagation of policy, idea or rationality, increased funding, problem solving (in order to reach objectives), more staff, and public relations (Marom, 2015). Perspectives on successful innovation suggest that it results from the creation and implementation of new processes, service products, and methods, as well as from tangible improvements in efficiency, effectiveness, and quality of outcomes (Muluk, 2008).

In the context of public administration, public service innovation is an important instrument in realizing good governance. Public service innovation can be defined as efforts to renew methods, processes, or technologies used by public sector organizations to improve the quality of services provided to the community (Osborne & Brown, 2011). The use of digital technology has become one of the most rapidly developing forms of innovation in the public sector because it can increase bureaucratic efficiency, reduce administrative costs, and accelerate decision-making processes. In Indonesia, digital transformation in public services has also become an important part of the bureaucratic reform agenda implemented by the government. Various policies have been introduced to encourage the digitalization of public services, including the development of an Electronic-Based Government System (SPBE). The implementation of SPBE aims to create public services that are more effective, efficient, transparent, and integrated across government agencies. The digitalization of public services is also expected to reduce complex bureaucratic procedures and improve public satisfaction with government services.

Digitalization of public services is part of the implementation of e-government, which aims to utilize information technology to improve administrative efficiency, accelerate service processes, and expand public access to government services. The adoption of digital technology enables bureaucratic processes that were previously manual and layered to become simpler, integrated, and based on electronic data. In addition, digitalization can also enhance transparency and accountability in government administration (Aprilina et al., 2025). In the context of public administration, digitalization is not merely the adoption of technology but also represents a paradigm shift in the way governments design, manage, and evaluate public services (Chatfield & Reddick, 2016). Digital governance requires cross-sector collaboration and information openness to enhance service accountability (Gil-Garcia et al., 2016). Indonesia's geographical complexity and digital divide also require inclusive designs for technology-based public services (Wahyunengseh et al., 2020).

Digital transformation also aims to increase citizen satisfaction, reduce operational costs, and accelerate administrative processes within government institutions (Cullen, 2015; Srivastava et al., 2025). The success of digital services is strongly influenced by user experience, accessibility, and clarity of procedures within government digital platforms (Anderson et al., 2015). In addition, the COVID-19 pandemic accelerated the widespread adoption of digital public services, providing clear evidence of the urgency and potential of public sector digitalization in Indonesia. This situation further reinforces the need for empirical analysis regarding the effectiveness of digital transformation in improving government service delivery (Criado & Gil-Garcia, 2019).

One area of public service with considerable administrative complexity is the pension administration service for Civil Servants (PNS). Pension services constitute an important part of personnel management in the public sector, related to the provision of employee rights after entering retirement. The pension administration process involves various administrative stages, ranging from verification of personnel data, submission of retirement proposals, determination of pension rights, to the disbursement of pension benefits. These processes also involve coordination among various government agencies such as the institution where the employee works, personnel agencies, and pension fund management institutions.

In practice, the pension administration process for civil servants often faces various obstacles, such as delays in submitting pension documents, inconsistencies in personnel data, and a lack of transparency of information for employees approaching retirement. Administrative systems that are still manual and poorly integrated often cause the pension process to become slow and inefficient. This condition can ultimately affect the certainty of the timing of pension benefit payments for employees who have entered retirement. The challenges and obstacles in pension administration reflect structural capacity mismatches embedded in decentralized systems rather than merely isolated implementation failures. This highlights the importance of pension service reforms that are sensitive to contextual conditions and oriented toward strengthening capacity in order to promote service equity, accountability, and organizational legitimacy within local governments (Yamlean et al., 2025).

To address these issues, the government has begun implementing various digital-based service innovations, such as personnel information systems, online pension service applications, and electronic-based integration of personnel data. The use of information technology in pension services aims to increase the speed of administrative processes, minimize data errors, and provide easier access for employees approaching retirement (Suryani et al., 2025).

Various previous studies indicate that the digitalization of public services can improve bureaucratic efficiency, service quality, and public participation. However, the implementation of digital innovation in the public sector still faces several challenges, such as limitations in technological infrastructure, human resource capacity, and system integration across institutions (Wahyudi et al., 2025). The application of digital technology in public services can improve service quality and bureaucratic efficiency. A study conducted by Janssen and Estevez (2013) shows that the implementation of e-government can improve the effectiveness of public services through the integration of information systems and increased transparency in government administration. Meanwhile, research by Mergel et al. (2019) indicates that digital transformation in the public sector is not only related to the use of technology but also involves changes in organizational structures, work processes, and bureaucratic culture.

Nevertheless, the implementation of digital innovation in the public sector also faces various challenges. Several studies indicate that the success of public service digitalization is strongly influenced by factors such as organizational readiness, human resource capacity, availability of technological infrastructure, and government policy support (Gil-Garcia, Helbig, & Ojo, 2014). In addition, the integration of information systems across government agencies remains one of the main challenges in developing digital-based public services. Although research on the digitalization of public services has grown rapidly, studies specifically examining digital-based innovations in civil servant pension administration services remain relatively limited and scattered across different studies. Therefore, a comprehensive study through a Systematic Literature Review (SLR) is needed to identify research developments, trends in digital innovation, and implementation challenges in civil servant pension administration services. Furthermore, most existing studies use case study approaches within specific institutions, and thus do not provide a comprehensive overview of research developments related to digital-based pension administration service innovation. Therefore, a research approach capable of systematically synthesizing various previous research findings is required.

One approach that can be used to comprehensively examine research developments is the Systematic Literature Review (SLR). The SLR method enables researchers to identify, evaluate, and synthesize various relevant studies systematically and transparently (Kitchenham & Charters, 2007). Through this approach, researchers can gain a deeper understanding of research trends, forms of digital innovation that have been developed, and challenges encountered in the implementation of digital-based pension administration services. Based on the above explanation, this study aims to conduct a systematic review of various literature discussing digital-based public service innovation in civil servant pension administration services. This research is expected to contribute to enriching academic studies on public service digitalization and to provide recommendations for the development of digital-based pension service innovations within the government sector...

2. Literature Review

Public Administration in the Era of Digitalization

The digital era has brought significant changes to various aspects of society, particularly in the realm of public administration. The integration of digital technology into public service operations has transformed how governments interact with their citizens, manage information, and deliver services. The delivery of public services digitally has become a crucial component since the emergence of e-government or digital government over the past two decades. Governments at all levels are attracted to the much lower transaction costs of online services compared to manual transactions (Mukherjee & Roy, 2017). Digital transformation is seen both as an opportunity and a challenge for governments in providing services through information technology.

The transformation of public administration in the digital technology era is a necessity to meet the demands of modern society for faster, more efficient, and accountable services.

This process is not merely the adoption of technology but represents a structural and cultural reform that touches the core of public bureaucracy. The implementation of digital technology in government has changed the management of data, inter-agency communication, and the provision of direct services to the public. By integrating information and communication technology (ICT), governments can simplify procedures, shorten bureaucratic chains, and expand service reach without being limited by space or time. This digitalization not only enhances internal government work efficiency but also responds to public expectations for more transparent and responsive services (Agustin et al., 2025).

The success of digital transformation in public administration is also heavily influenced by the quality of human resources. Continuous training is required to improve civil servants' capacity to operate digital systems and to build new communication patterns with the public. The synergy between technical skills and public service competence is key to creating high-quality services. In other words, the success of digital public service is not solely dependent on sophisticated systems but also on the readiness of the people behind them to understand, manage, and serve the public with empathy (Yunaningsih et al., 2021).

Digital transformation also cannot be separated from the role of regulations that guide and direct the process of change. Presidential Regulation No. 95 of 2018 on the Electronic-Based Government System and Presidential Instruction No. 2 of 2021 on Accelerating National Digital Transformation provide a binding legal foundation and promote consistent implementation across all levels of government. With this regulatory foundation, each public institution has clear guidelines for developing digital systems according to the needs and conditions of their respective regions.

Digitalization of public administration has significant potential to improve the effectiveness and efficiency of public services. Digital technology can minimize operational costs, simplify administrative processes, and facilitate faster and easier access to information (Jia et al., 2015; Myronchuk et al., 2020). Additionally, because data can be recorded and audited in real time, digital systems enhance transparency and accountability. The use of e-government systems, smart governance, and other digital platforms has demonstrated how technological advances can improve public service quality and increase public trust in government.

The digital era brings new hopes for a more transparent and democratic government. Governments proficient in digital technology can engage more closely with citizens through interactive platforms, data-driven services, and digital channels for citizen aspirations. For instance, the concept of Government 4.0 emphasizes public participation in decision-making and policy formulation based on real-world situations (Li et al., 2016; Zhidkov, 2017). This indicates that digitalization not only improves efficiency but also enhances citizen participation in public administration systems.

However, digitalization of public administration also presents technical and structural challenges. Structural challenges arise from rigid bureaucratic culture, resistance to change, and limited digital leadership. On the other hand, technical challenges include system integration, inter-agency data interoperability, and information security, which is vulnerable to cyberattacks. Although these issues cannot be addressed partially, they require a comprehensive and systemic approach encompassing legal elements and organizational governance (Mashudin, 2025).

In the digital era, the transformation of public administration results from global changes characterized by advances in information and communication technology. This process not only requires technical changes in bureaucratic operations but also a paradigm shift toward governance that is clearer, more effective, and accountable. Digital innovations such as e-government, the use of big data, and application-based public services have enhanced public participation and service quality. Nonetheless, many challenges continue to emerge during implementation. These include organizational cultural resistance, limited human resource capacity, fragmented systems across divisions, and cybersecurity vulnerabilities.

Research indicates that the success of digital public administration depends heavily on four main pillars: technological readiness, human resource capability, adaptive regulatory frameworks, and cross-sector synergy between government, private sector, and society. Furthermore, digital approaches must be combined with the development of new bureaucratic values, such as openness, innovation, and public needs-based service. Without a digital approach, good public service is unattainable. Therefore, public administration transformation must be viewed as a reform process encompassing structural, cultural, and managerial aspects of governance, not merely a technical program. Governments must

continuously promote this transformation through integrated and sustainable strategies to address contemporary challenges and meet citizens' expectations for faster, more transparent, and inclusive public services (Mashudin, 2025).

E-Gov in the Public Administration Paradigm.

The emergence of e-Government (e-Gov) is one of the most compelling concepts introduced in public administration in the late 1990s, adopted from e-business and e-commerce in the private sector (Moon, 2002; Brown, 2005). The e-Gov initiative has been loosely used to describe any legacy of ICT use in the public sector; for those who view it as an extension of e-commerce into the government domain, it represents the use of the internet by governments to provide information and services to citizens (Bhatnagar, 2004).

Belanger and Carter (2012) define e-Gov as the use of information technology to enable and enhance the efficiency of government services provided to citizens, employees, businesses, and institutions. The utilization of ICT in government is expected to bring many improvements to bureaucratic performance. As Fang (2002) stated: "These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions."

Meanwhile, Awan (2015) defines e-Gov as electronic interaction (transactions and information exchange) between the government, society (citizens and businesses), and employees. Through e-Gov, many objectives can be better served, including the provision of government services to the public, improved communication with businesses and industries, citizen empowerment through information access, and more competent government management. The most prominent aspect of e-Gov services is the provision and use of information pages on the Internet, commonly referred to as the World Wide Web (WWW). According to Andrisani, Hakim, and Savas (2000), e-Gov was introduced as one of the pillars in efforts to achieve efficiency and effectiveness in public service delivery. The implementation of e-Gov is expected to create a more responsive bureaucracy in delivering public services through the maximization of ICT functions. The values introduced in e-Gov, according to Nygren (2009), align with the spirit of New Public Management (NPM):

"Electronic administration is described with the help of discursive practices such as 'cost-effectiveness', 'customer orientation', and 'rationalisation'. These are in fact terms that are intimately associated with the broad 'marketisation' of civil society. The understanding of electronic administration demonstrated in the texts analysed here is at heart a matter of public service and instrumental operational development. Equally, these discursive practices can be viewed in the light of a more general marketisation of civil society. NPM is one element in this marketisation, and the introduction of electronic administration is consistent with its ambitions."

Beyond the influence of global pressures, the growth of e-Gov in developing countries has also been driven by the role of international financial institutions such as the World Bank and the IMF (Heeks, 2002). During this period, NPM was promoted worldwide as a solution to bring efficiency to public sector organizations, with these international financial institutions using it as a condition for providing financial assistance to developing countries. Heeks (2002) explains that international financial institutions promoted this agenda by combining and transferring the message of e-Gov as part of the NPM package.

The presence of e-Gov is inseparable from the development of public administration paradigms, particularly in the NPM era. Efforts to maximize efficiency values in public service delivery have synergized with ICT advances already applied in the business sector. Considering that e-Gov service connections include interactions between government agencies (A-to-A), between government and citizens (A-to-C), and between government and businesses (A-to-B), e-Gov is expected not only to achieve internal efficiency in government management functions but also to enhance public service delivery to various stakeholders. This enables services to be more convenient for citizens, cost-effective, and positively influence the relationships between bureaucracy and citizens, companies, other public institutions, as well as public employees. The use of ICT in the public sector to improve service efficiency is the fundamental motivation behind the emergence of e-Gov.

Public Service Innovation

Innovation is related to something new for individuals, organizations, communities, or specific situations. Innovation itself encompasses the development and implementation of something new. The term “new” here does not necessarily mean an entirely original product, but rather refers to newness. This newness implies that innovation involves creating and implementing something that already exists into a new combination. Newness is also related to the dimensions of space and time (Prabowo et al., 2022). Innovation consists of generating new ideas and implementing them into new products, processes, or services through a long and cumulative process involving numerous organizational decision-making stages, from the idea generation phase to the implementation phase (Urabe et al., 1988).

Innovation is viewed as the process of adopting or implementing new ideas, where these new ideas are transformed into actual products or services (Godin, 2014; Osborne, 2013). Innovation has traditionally been more developed in the private sector because it can break free from various constraints that hinder creativity. The private sector has embraced the mindset of “innovate or die,” whereas the public sector still treats innovation as optional or discretionary. Public institutions rarely feel threatened even if they lack any innovation. While the government may not “die” or be dissolved without innovation, it will certainly lose legitimacy and public trust (Prabowo et al., 2022).

The potential benefits of public sector innovation are significant, and the size of the public sector varies across countries. On average, the public sector constitutes about one-third of a country’s economy. Such a size indicates that public sector innovation has the potential to contribute significantly to economic growth and national prosperity directly by reducing the cost of providing public services and improving the quality and composition of services, and indirectly by enhancing private sector productivity through the expansion and improvement of publicly provided infrastructure upon which the private sector depends (Osborne & Brown, 2012).

Innovation is needed to improve or even enhance the quality, efficiency, and effectiveness of public service delivery. Through innovation, systems, methods, and technologies can be created to reduce costs, shorten service time, cut bureaucracy, and, most importantly, build public trust in government performance. Public service innovation represents a breakthrough in public services, whether as original creative ideas or as adaptations/modifications that provide direct and indirect benefits to society. Original creative ideas reflect the positive contribution of a public service provider in offering novelty in its services (Prabowo et al., 2022).

Public sector innovation has emerged from studies primarily dominated by private sector innovation (Moore & Hartley, 2008; Torfing et al., 2020). Innovation is also essential for effective public service management in dynamic societies, increasingly diverse communities, and among individuals who demand more from public services. New ICT and communication methods, new work practices, novel forms of social and family organization, and societal changes have caused previously homogeneous social groups to become more diverse.

According to Kuratko (2007), innovation consists of four types:

- a. Invention – the creation of a new product, service, or process that has never been done before. This concept is often described as revolutionary.
- b. Extension – the development of an existing product, service, or process. This concept involves applying an existing idea in a new or different way.
- c. Duplication – copying an existing product, service, or process. However, duplication is not mere imitation; it often adds creative touches to improve the concept to gain a competitive edge.
- d. Synthesis – combining existing concepts and factors into a new formulation. This process involves taking multiple previously discovered ideas or products and reshaping them into a product that can be applied in a new way.

Public sector innovation can relate to new outcomes (e.g., new services), the processes to achieve those outcomes (e.g., using co-design methods), and the support provided to facilitate those processes (e.g., innovation labs supporting teams in co-design processes to achieve innovative results) (Nählinder & Eriksson, 2019). Public sector innovation is often driven by public sector agents (e.g., civil servants, public institutions, state-owned enterprises, etc.), and as noted, it frequently involves or impacts actors across the entire ecosystem.

However, public sector innovation can sometimes be driven more by actors outside the public sector than by those within it.

3. Materials and Method

This study employs a descriptive research design using the systematic literature review (SLR) method to answer research questions systematically, referring to the PRISMA model (Page et al., 2021). The PRISMA approach is a well-defined review that uses a systematic tool to identify relevant findings, extract and analyze results for interpretation (Moher et al., 2009).

The data collection technique used in this study is documentation, involving the search for sources or literature relevant to the research focus. The search process is conducted to answer research questions through relevant sources that can serve as references. In this study, literature related to Digital-Based Public Service Innovation in Civil Servant Pension Administration was identified. Data collection was carried out by searching for information from various sources, including Google Scholar, Garuda, PubMed, and other sources.

The sampling was conducted using purposive sampling, which involves selecting samples based on the research objectives and their relevance to the studied issues, ensuring that the samples are considered representative of the characteristics of the defined population. The inclusion and exclusion criteria in this study include:

Table 1 Inclusion and Exclusion Criteria.

Inclusion Criteria	Exclusion Criteria
Published between 2020–2025	Published before 2020
The article is a peer-reviewed journal	The article is not a peer-reviewed journal
Journal indexed in Sinta	Journal indexed outside Sinta
Written in Indonesian or English	Text not written in Indonesian or English
Related to Innovation, Public Service, Digitalization, Pension Services	Not related to Innovation, Public Service, Digitalization, or Pension Services
Empirical research	Not empirical research

The article selection process was conducted by referring to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. In the initial search stage, 33 articles published between 2020 and 2025 were identified. After the screening process, 23 articles were found to meet the criteria for further review. These articles were then evaluated for quality, resulting in 7 articles being used in the final synthesis of the literature review.

4. Results

Based on the results of the selection process, using the Systematic Literature Review (SLR) technique with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) method on Digital-Based Public Service Innovation in Civil Servant Pension Administration, 7 articles were identified for further analysis. A summary of the analysis results is presented in Table 2.

Table 2 Digital-Based Public Service Innovation in Civil Servant Pension Administration.

No	Title, Author Name, Year	Result
1	Digital Transformation in Pension Payments: Education and Socialization of the Andal Taspen Among Retirees. Firmansyah et al (2025)	Digital transformation in pension payments through applications represents an innovative step to improve the efficiency and transparency of pension fund disbursement for retired Civil Servants (ASN). This digitalization aims to simplify administrative processes, reduce payment delays, and enhance transaction security. However, the implementation of this digital system faces a major challenge: the low digital literacy among retirees, who are generally accustomed to conventional methods of receiving pension funds. Therefore, education and socialization are strategic steps to ensure that retirees can easily adopt and benefit from this innovation.

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| 2 | <p>Digitalization of Civil Servant Pension Services at Taspen
(A Study on Taspen Authentication at PT Taspen (Persero) KCU Bandar Lampung). Muhammad Faizal, Dedy Hermawan, Eko Budi Sulistio.</p> | <p>The pension services provided by PT. Taspen (Persero) after the implementation of digital Taspen authentication have not been fully optimized, due to a lack of openly available information to the public. As a result, many people are still unaware of the effectiveness, efficiency, and responsiveness of civil servant pension payment services at PT. Taspen (Persero). The challenges faced by PT Taspen and pension participants in using the digital Taspen authentication application include:</p> <ol style="list-style-type: none"> a. The application system is not yet perfect (system errors). b. Not all members of the public understand digital technology. c. The socialization of Taspen authentication has not been maximized. |
| 3 | <p>Digitalization of Pension Payment Services Through the Taspen Authentication Application at PT Taspen (Persero) Kendari. Sabaruddin, et al. (2022)</p> | <p>The results of the study on the digitalization of pension payment services through the Taspen Authentication application at PT Taspen (Persero) Kendari show that it has been running well, as it has implemented three key elements of digital development in the public sector. First, Support from PT Taspen (Persero) Kendari, which includes backing from the branch head to staff, as well as the allocation of human resources, finances, manpower, time, information, and technological infrastructure. Second, Capacity, in terms of financial resources, technological infrastructure, and competent human resources. Third, Value, provided to retirees through the Taspen Authentication application, which includes familiarity and convenience in using the application, as well as assisting retirees in performing monthly authentication more efficiently and affordably.</p> |
| 4 | <p>Implementation of an Innovation-Based Personnel Service Program: Personnel Service Application System (SAPK)
(A Study on the Employee Pension Service Application at the Regional Personnel Agency of East Java Province). Setyawan, Z.D dan Prabawati, I. (2021).</p> | <p>Communication within SAPK determines the success of achieving Service Innovation. The human resources of SAPK operators in the employee transfer section contribute positively to the achievement of Service Innovation. The disposition and attitude of the operators, who ensure employees' rights to receive the best and non-discriminatory service, also contribute positively to the achievement. The Bureaucratic Structure, which relates to responsibilities and the division of tasks among policy implementers in executing the Innovation-Based Personnel Service Program through the Personnel Service Application System, provides a significant contribution to the achievement of the program.</p> |
| 5 | <p>The Use of the Taspen Authentication Application to Improve the Effectiveness of Pension Payment Services at Sengkang Post Office.. Syamsiar., Herlina,B dan Ainun, A.A. (2023).</p> | <p>The use of the Taspen Authentication application at Sengkang Post Office is effective; the pension payment services at Sengkang Post Office have become effective following the implementation of the Taspen Authentication application.</p> <p>The factors that hinder the use of the Taspen Authentication application include elderly retirees, retirees who are not familiar with technological developments, unsupported smartphone specifications, issues with facial recognition, voice recognition, inadequate lighting, and poor network connections.</p> |
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		The factors that support the use of the Taspen Authentication application include unrestricted access to the application, the ability to perform authentication anywhere, and assistance from payment officers and others.
6	Effectiveness of the Digital Use of the Pension Recipient Authentication Application System of PT. Taspen Using Smartphones in Padang City. Nurhasana & Frinaldi. (2020)	The digital use of PT. Taspen's Pension Recipient Authentication Application via smartphone in Padang City has not yet been fully effective. Out of eight indicators of effectiveness, three have not been met in the use of the pension recipient authentication application. First, the clarity of the objectives to be achieved has not been fully realized. Second, the process of thorough policy analysis and formulation has not been carried out effectively. Third, there are still challenges faced by pension participants, namely that the resources of the pension recipients have limited understanding, which has not yet been effectively addressed..
7	The Use of the Taspen One Hour Online Services (Toos) Application in Improving Pension Services". Fadhila, H.A. (2025).	The TOOS application innovation has successfully accelerated the pension administration processing time from an average of 7 days to just 1 hour, in line with the commitment to digital-based services. In addition, 85% of respondents expressed satisfaction with the ease of access and the transparency of information provided by this application..

Based on a Systematic Literature Review using the PRISMA method, seven journal articles were identified as relevant to the theme of public service digitalization and pension administration. These articles were sourced from national journals via Google Scholar, Garuda, and PubMed. The extraction results indicate that the implementation of digital-based service innovations is a strategic step in improving the quality of public services in the pension administration sector. Digitalization of pension services, particularly through the utilization of applications such as digital authentication systems and electronic-based human resource service platforms, aims to simplify administrative procedures, accelerate pension disbursement processes, and enhance transparency and accountability in services provided to pensioners.

Findings from various studies show that implementing digital systems in pension services offers several significant benefits. First, digitalization can increase service process efficiency by reducing previously manual bureaucratic procedures. Some service innovations have even shown substantial improvements in administrative processing time, where processes that previously took several days can now be completed within hours. This demonstrates that digital transformation has great potential to enhance the performance of public service organizations, particularly in managing pension administration.

Second, digitalization also provides easier access for pensioners to carry out verification or authentication processes independently via digital devices such as smartphones. This system allows authentication to be conducted from anywhere without the need to visit service offices or pension disbursement institutions in person. Thus, this innovation not only improves time and cost efficiency for beneficiaries but also enhances convenience and flexibility in accessing public services.

Third, the implementation of digital pension services has also shown an increase in user satisfaction levels. Several studies report that most respondents express satisfaction with the ease of using the application, the speed of service, and the transparency of information provided by the digital system. This indicates that information technology-based service innovations contribute positively to improving the quality of public services.

However, the literature review also shows that digital pension services still face various challenges affecting the effectiveness of their implementation. One major obstacle is the low digital literacy among pensioners, most of whom are from older age groups and are not accustomed to using digital technology in daily activities. This condition causes some pension

recipients to struggle with operating service applications, particularly in digital authentication processes that require the use of technological features such as facial or voice recognition.

Additionally, limitations in technological devices also hinder the implementation of digital services. Not all pensioners have smartphones with specifications that support optimal use of digital service applications. Technical issues such as unstable internet quality, insufficient lighting during authentication processes, and system application errors also affect the smooth execution of digital services.

Another challenge in implementing digital pension services is the limited socialization and dissemination of information to the public. Several studies show that many pension participants still do not fully understand the existence or benefits of the digital service applications provided. A lack of openly and systematically communicated information results in the utilization of digital services not reaching its full potential.

On the other hand, the analyzed literature also shows that the successful implementation of digital service innovations is strongly influenced by organizational and policy factors. Institutional support, the availability of competent human resources, adequate technological infrastructure, and effective communication in policy implementation are key elements in supporting the success of digital transformation in the public service sector. Furthermore, a clear bureaucratic structure and organizational commitment to improving service quality also play a crucial role in ensuring that digital service innovations are implemented sustainably.

Overall, the results of this Systematic Literature Review indicate that the digitalization of pension payment services has significant potential to improve efficiency, effectiveness, and the quality of public services. However, achieving optimal implementation requires a more comprehensive effort, particularly in enhancing pensioners' digital literacy, strengthening information technology infrastructure, refining the applications used, and expanding public outreach programs. With an integrated approach combining technology, organizational, and human resource aspects, digital-based public service innovations in pension administration are expected to provide broader benefits to pension recipients and enhance overall public service performance.

5. Discussion

The research findings indicate that the implementation of digital-based service innovations is a strategic step in improving the quality of public services in the pension administration sector. The digitalization of pension services, particularly through the use of applications such as digital authentication systems and electronic-based human resource service platforms, aims to simplify administrative procedures, accelerate pension fund disbursement processes, and enhance transparency and accountability in services provided to pensioners. This means that digital transformation in pension administration services can create a more effective, efficient, and responsive service system, particularly for retired Civil Servants. The utilization of information technology not only shortens previously manual and hierarchical bureaucratic processes but also improves the quality of interactions between the government and citizens through faster, more transparent, and easily accessible service mechanisms. This digitalization of services also represents a bureaucratic reform effort in achieving good governance by enhancing accountability, transparency, and efficiency in public services.

The literature synthesis shows that implementing digital-based service innovations in pension administration is a crucial strategy for improving the quality of public services. Digitalizing pension services through digital authentication systems, electronic HR service applications, and the integration of HR databases can simplify bureaucratic procedures, accelerate administrative verification processes, and minimize face-to-face interactions, which often cause inefficiencies. This transformation not only increases the speed and accuracy of services but also strengthens transparency and accountability in pension fund management. In the context of modern public administration, the use of digital technology enables the government to provide services that are more responsive, adaptive, and user-centered.

These findings are consistent with the perspective of Innovation Theory in the public sector, which explains that innovation is an essential mechanism for government organizations to improve service performance by applying new ideas, processes, or technologies that add value to society. According to Everett M. Rogers (2003), innovation is understood as an idea, practice, or object perceived as new by a social system and adopted to achieve more effective organizational work processes. In the context of public services, digital

innovation accelerates the adoption of more efficient service systems and enhances the quality of interactions between the government and citizens. Research on public sector innovation also shows that digitalization of government services is a form of administrative innovation capable of improving organizational efficiency, service quality, and public user satisfaction (Hartley, 2005; Osborne & Brown, 2011).

Furthermore, these findings align with the concept of E-Government, which involves the use of information and communication technology by the government to improve public service quality, administrative efficiency, and governance transparency. According to Indrajit (2002), implementing e-government enables the transformation of bureaucratic processes from manual systems to more integrated digital systems, allowing public services to be delivered faster, more accurately, and transparently. International studies also indicate that digital government can reduce the complexity of administrative procedures, improve service accessibility, and strengthen government-to-citizen (G2C) interactions (United Nations, 2022; Mergel, Edelmann, & Haug, 2019). Therefore, digitalization of pension administration services can be understood as part of digital government transformation, contributing to bureaucratic modernization and sustainable improvements in public service quality.

The literature review also shows that digital pension services still face various challenges affecting implementation effectiveness. One major obstacle is low digital literacy among pensioners, most of whom are older and not accustomed to using digital technology in daily activities. In addition, limitations in technological devices also hinder the implementation of digital services. Another challenge in implementing digital pension services is the limited socialization and dissemination of information to the public. This means that the success of implementing digital-based public service innovations is determined not only by the availability of technology but also by human resource readiness, the digital literacy level of the public, and the effectiveness of government communication strategies in promoting digital services to users. In other words, digital transformation in public services requires a comprehensive approach, including strengthening user capacity, improving access to technology, and implementing effective outreach strategies so that innovations can be widely adopted by the community.

These findings align with the Public Service Innovation Theory, which explains that the success of an innovation is strongly influenced by the adoption process among users within a social system. According to Everett M. Rogers (2002), in the Diffusion of Innovations theory, the adoption rate of innovation is determined by several factors, including the characteristics of the innovation, the readiness level of users, and the effectiveness of communication in disseminating the innovation. In the context of public services, low digital literacy and limited access to technology can slow the diffusion of innovation, meaning that digital service innovations have not yet been fully utilized by all societal groups.

Additionally, these findings are consistent with the concept of E-Government, which emphasizes that digital transformation in government is not only about using information technology but also includes organizational readiness, human resource capacity, and public accessibility to digital services. According to Ines Mergel, implementing digital government often faces challenges such as the digital divide, limited technology literacy, and resistance to changes in digital system usage. Therefore, successful e-government implementation requires strategies that include strengthening public digital literacy, improving technological infrastructure, and providing inclusive and easily accessible services for all societal groups.

6. Conclusion

Based on the results of research on Digital-Based Public Service Innovation in Civil Servant Pension Administration Services, the following conclusions can be drawn:

Based on the literature review, it can be concluded that the implementation of digital-based pension administration service innovations is a strategic step in improving the quality of public services. The digitalization of pension services through various electronic platforms can simplify administrative procedures, accelerate verification and pension fund disbursement processes, and enhance transparency and accountability in public service delivery. Thus, digital transformation in pension services contributes to creating a service system that is more effective, efficient, and responsive to the needs of pensioners as service users.

However, the review also shows that the implementation of digitalized pension services still faces several challenges, such as low digital literacy among pensioners, limited access to technological devices, and suboptimal socialization regarding the use of digital services. These

challenges indicate that the success of digital-based public service innovations depends not only on the availability of technology but also on human resource readiness, enhancement of user capacity, and effective communication strategies to introduce digital service systems to the public.

The findings of this research contribute to the development of studies in public administration, particularly regarding digital-based public service innovation. The literature synthesis shows that the application of digital technology in pension administration services functions not only as a tool for service modernization but also strengthens the conceptual framework for public sector innovation and digital government transformation. From the perspective of innovation theory, the use of digital service systems reflects the process of innovation adoption in government organizations, as explained by Everett M. Rogers (2002) in the concept of diffusion of innovations i.e., the process of spreading new ideas or technologies within a social system to improve organizational effectiveness and efficiency. Additionally, these findings reinforce the concept of E-Government, which emphasizes the importance of using information and communication technology to enhance public service quality. The implementation of digital-based pension administration services demonstrates that bureaucratic transformation toward digital government can improve transparency, accountability, and efficiency in public service processes. Therefore, this research supports the view that technological innovation in the public sector is a crucial factor in enhancing government organizational performance and the quality of services provided to the public.

Practically, this research offers several implications for government agencies providing pension administration services. First, the digitalization of pension administration services should continue to be developed through the integration of HR information systems, pension data verification systems, and digital service platforms that can be easily accessed by pensioners. Strengthening IT infrastructure and integrating databases across agencies are critical factors to ensure the effective implementation of digital services. Second, the government needs to enhance the capacity of civil servants through digital competency training and development to manage technology-based service systems optimally. Digital transformation requires not only technological support but also organizational readiness and the ability of staff to operate and manage digital service systems professionally. Third, it is important for the government to ensure that digital service innovations remain accessible to pensioners, especially for groups with limitations in using digital technology. Therefore, the development of digital services should be accompanied by support services, application usage socialization, and hybrid service alternatives that combine digital and in-person services. Thus, implementing digital-based pension administration service innovations contributes not only to bureaucratic efficiency but also to more transparent, responsive, and citizen-centered public services.

Although this research provides a comprehensive overview of digital-based public service innovation in pension administration, several limitations should be noted. First, this study uses a Systematic Literature Review approach, which relies on the availability and quality of published articles in academic databases. Therefore, some relevant studies may not have been identified, especially articles not indexed in the databases used. Second, most of the studies analyzed employ qualitative approaches and case studies on specific government agencies, so the findings have limited generalizability to broader public administration contexts. Variations in institutional conditions, technological capacity, and human resource readiness in each government organization can also affect the success of digital service innovation implementation. Third, this research primarily focuses on the digital service innovation aspect from the government organization's perspective, without deeply exploring user experiences, particularly pensioners as the primary beneficiaries of the service system. In fact, the user perspective is critical in assessing the effectiveness and quality of digital public services.

Based on these limitations, future research can develop several deeper research agendas. First, future studies can employ empirical approaches using quantitative or mixed methods to more comprehensively examine the relationship between digital innovation implementation and improvements in pension administration service quality. Such approaches can provide stronger empirical evidence on the impact of service digitalization on bureaucratic efficiency, transparency, and user satisfaction. Second, future research can explore user perspectives more deeply, particularly those of retired Civil Servants (ASN), to understand acceptance levels, perceived ease of use, and benefits derived from digital pension service systems. This approach is important for assessing the success of digital innovation implementation from the citizens' perspective. Third, future studies can examine organizational and institutional

factors influencing the success of digital public service implementation, such as bureaucratic leadership, human resource capacity, technology infrastructure, and government policies driving digital transformation. Such studies will provide a more comprehensive understanding of the dynamics in implementing digital innovations in the public sector. Fourth, comparative studies across regions or countries can identify best practices in providing digital-based pension administration services. In this way, future research is expected to contribute more broadly to the development of public service innovation theory and the implementation of digital government in public administration contexts.

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