Leadership and Institutional Design in Public Service Digitalization

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ABSTRAK

Digitalisasi pelayanan publik telah menjadi agenda penting bagi pemerintah di era digital saat ini. Namun, untuk mencapai keberhasilan dalam transformasi digital ini,terdapat permasalahan ketidaksiapan lembaga dan pimpinan dalam menghadapi perubahan seperti ketidaksiapan infrastruktur dan sumberdaya serta ketidaksesuaian antara regulasi dan kebijakan. Penelitian ini bertujuan untuk menganalisis dan menjelaskan mengenai desain kepemimpinan dan kelembagaan yang sesuai dalam digitalisasi pelayanan publik. Metode yang digunakan adalah pendekatan studi kasus dengan pengumpulan data menggunakan wawancara terhadap informan penelitian, hasil wawancara diolah menggunakan aplikasi pengolah data Nvivo 12 Plus dan dianalisis secara kualitatif. Hasil penelitian menemukan bahwa peran kepemimpinan dan kelembagaan saling terkait dan saling mempengaruhi dalam digitalisasi pelayanan publik. Desain kepemimpinan yang kuat dalam visi dan strategi, membangun budaya inovasi, bersama dengan desain kelembagaan yang mampu mengatur, memfasilitasi kolaborasi, dan mengelola perubahan organisasi, membentuk fondasi yang solid untuk kesuksesan digitalisasi pelayanan publik. Namun perubahan tersebut juga harus diimbangi dengan evaluasi yang terus menerus untuk memperbaiki dan meningkatkan layanan digital. Penelitian ini diharapkan dapat memberikan kontribusi terhadap pemerintah dalam menghadapi tantangan dalam pelaksanaan digitalisasi pelayanan publik terutama dalam desain kepemimpinan dan kelembagaan.

ABSTRACT

Digitalization of public services has become an influential agenda for the government in today's digital era. However, to succeed in this digital transformation, institutions and leaders face challenges, such as unpreparedness of infrastructure and resources and mismatches between regulations and policies. This study analyzes and explains the appropriate leadership and institutional design in digitalizing public services. The method used is a case study approach with data collection using interviews with research informants. The results of the interviews are processed using the Nvivo 12 Plus data processing application and analyzed qualitatively. The results found that leadership and institutional roles are interrelated and influence each other in digitalizing public services. Robust leadership design in vision and strategy, building a culture of innovation, along with institutional design that can organize, facilitate collaboration, and manage organizational change, form a solid foundation for the success of digitizing public services. However, these changes must be balanced with continuous evaluation to refine and improve digital services. This research is expected to contribute to the government in facing challenges in implementing the digitalization of public services, especially in leadership and institutional design.

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INTRODUCTION

Leadership and Institutional Design in Public Service Digitalization stand at the forefront of a rapidly evolving global landscape. As societies navigate the complexities of an increasingly interconnected world, the role of leadership and the structure of institutions become pivotal in harnessing the potential of digital technologies to transform public services. This issue transcends geographical boundaries and cultural divides, representing a shared endeavor to adapt to the opportunities and challenges presented by the digital age. Digitalizing public services has become a prominent feature of governance and administration in the modern world, characterized by globalization, technological advances, and the proliferation of information. From developed countries to emerging economies, governments are increasingly turning to digital solutions to improve efficiency, transparency, and citizen engagement. This shift reflects a broader worldview that recognizes the transformative power of technology in the way public services are delivered and experienced. Central to the narrative around leadership and institutional design in digitalizing public services is the pursuit of progress and innovation that serves social welfare.

This story unfolds against the backdrop of a rapidly changing global landscape where the imperatives of the digital age are challenging traditional governance models. It is a story that speaks to the aspirations of countries and communities to leverage technology to promote comprehensive development, effective governance, and responsive public services. Ultimately, this is a story of adaptation and evolution as leaders and organizations navigate the complexities of digital transformation to build a future that is both technologically advanced and equitable Socially. According to the 2020 UN E-Government Survey, the global average E-Government Development Index (EGDI) increased from 0.57 in 2018 to 0.64 in 2020, indicating an increasing trend in the use of digital government.

The survey also found that 84% of countries now have a dedicated institution or agency responsible for coordinating digital governance efforts, indicating growing recognition of the importance of institutional design in digital transformation. Leadership in the context of public service digitalization refers to the guidance, direction, and vision provided by individuals in positions of authority within government organizations. Effective leadership is essential for initiating, managing, and sustaining digital transformation efforts. Meanwhile, Institutional design refers to the deliberate structuring and arrangement of government institutions, processes, policies, and systems to facilitate digital transformation and optimize the delivery of public services. Leadership and Institutional Design in Public Service Digitalization involves the strategic direction, organizational leadership, and structural arrangements needed to harness the potential of digital technologies to transform governance, improve service delivery, and enhance citizen engagement and satisfaction. The digitalization of public services involves using digital technology and the internet to provide more efficient, responsive, and accessible services to the public. (Breaugh et al., 2023).

There are several challenges in digitalizing public services, such as the complexity of public accessibility and the lack of leadership and institutional roles in implementing digitization. Significant changes in how governments and public institutions provide services have yet to be entirely accepted by the public and stakeholders involved in these services. This change involves transforming administrative processes, information dissemination, and interactions between the government or government institutions and the public. In this context, leadership design becomes crucial because such changes require leaders who can overcome challenges and lead digital transformation with a clear vision. Effective leadership is needed to identify and leverage digitization opportunities, coordinate transformation efforts, and manage cultural and policy

changes within government organizations or public institutions (Hammerschmid et al., 2022).On the other hand, institutions also play an essential role in digitalizing public services. Good institutions involve adequate organizational structures, appropriate policy frameworks, and efficient decision-making mechanisms. The digitization of public services often involves collaboration between government entities, public institutions, the private sector, and the community. Therefore, strong institutions ensure good collaboration and effective coordination in digitalizing public services (De Coninck et al., 2023).

Research on leadership and institutional design in the digitization of public services aims to analyze and understand the factors influencing the success of digital transformation in the public sector. By analyzing successful leadership practices and effective institutional patterns, the research will result in an ideal design for leadership and institutions in digital public services. The findings of this research are expected to provide insights and recommendations to aid decision-makers in designing and implementing successful digital service initiatives. The internet or digitization in public services has been implemented in many sectors in Indonesia, but the utilization of digital technology has yet to be optimal. Government services provided online still require the public to visit the service offices, meaning the expected ease of digital services has yet to be achieved because it does not align with the digital services' goals. Therefore, success in this digitization becomes crucial, and this research is vital because leadership and institutions play a significant role in digitization success, creating a practical framework to optimize the benefits of technology, improve service quality, encourage community participation, and address challenges related to technological changes and the complexity of public services. These challenges can be overcome through effective leadership and institutional design. (Eriksson et al., 2020).

Literature Review

Digitalization of public services relies on integrating previously separate public services into a unified system through shared usage provided by various parties. (Hsieh et al., 2003). In public administration, where service delivery extends beyond organizational, sectoral, and territorial boundaries, digital service delivery can be seen as a loosely combined complex network provided by various inter-organizational networks. (Breaugh et al., 2018). Collaboration between public organizations in inter-organizational networks has become an excellent coordination approach to advancing digital public service delivery. (Breaugh et al., 2023) In this context, collaboration refers to activities where two or more organizations work together to achieve common goals. (Mikalef et al., 2023). The benefits of inter-organizational collaboration regarding service integration have been widely recognized in the literature, particularly for e-government. (De Coninck et al., 2023). Benefits related to better service delivery, achieving better goals, and resource sharing (Mislawaty et al., 2022). Leadership and institutions are crucial in the collaborative process, determining the roles of leadership and institutions in digitizing public services to improve public services.

Leaders and leadership approaches can be agents that materialize something (Ansell & Gash, 2008). They are essential components of collaborative efforts, including the success of jointly conducted digitization projects (Trkman et al., 2023), (Wouters et al., 2023). (Trkman et al., 2023), (Mikalef et al., 2023) acknowledge the importance of individuals in how technology is structured and the active role played by individuals, or agents, in shaping technology outcomes. However, their conceptualization of leaders as drivers in the advanced social structure of technology views leaders as products of technology rather than agents involved in managing its design and implementation. Leadership

research in emerging *e-government* literature has looked at the role of leadership. Still, most of it focuses on the role of leadership styles in developing and implementing e-government without looking at the broader context (Ingrams, 2023) (Alcaide Muñoz et al., 2023). According to (Ansell and Gash, 2012), the collaborative leadership approach focuses on several vital aspects. These include building social capital, empowering, framing interactive arenas, assuming a mediating role focused on clarifying independence, addressing conflicts, and mediating between stakeholders by aligning interests and building a common framework. They can also reframe issues, seize opportunities for change, or bring new knowledge and actors into play (Fish et al., 2010). In contrast, transactional leaders are often characterized as negotiators, where leaders gain power and legitimacy through conciliation and compromise, and strategies are developed to encourage follower compliance with roles and responsibilities (Anthopoulos et al., 2016).

Institutional design can be identified as a structural component of collaborative implementation that reflects a set of formal and informal rules guiding interactions and seeks to align them with the goals of digital service implementation. (Brito & Adeodato, 2023) (Wouters et al., 2023) Refer to this type of structure as the organizational environment. Institutional design is crucial in digitalizing public services as it provides governance mechanisms for collaborative implementation. (Eriksson et al., 2020). Building legitimacy and formalizing the implementation of digital public service delivery is essential. It also reduces insecurity related to complexity, perceived risks, and power imbalances. (Elnaghi et al., 2019). According to (Hsieh et al., 2003), institutional design can limit actors in digitization because digital service delivery generally involves complex decision-making modes and inter-organizational collaboration. Therefore, institutional design features will play a significant role in explaining how this can be implemented.
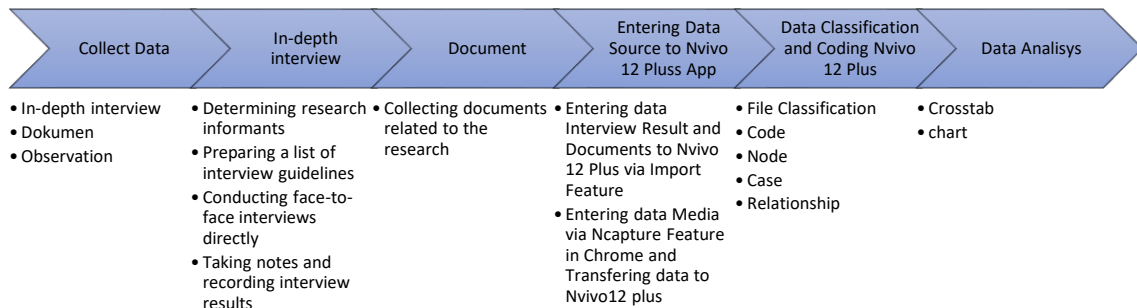
From various literature, most research on digital service digitization focuses more on prerequisites or early stages in the implementation of digital services or examines how individuals, leaders, and humans interact with technology itself but have not yet reached sustainability regarding the design of the roles of leadership and institutions in the success of digital public service digitization.

According to (Ingrams, 2023), technological development begins with the interaction between agents and structures (norms, rules) embedded in the institutional context. The novelty of our study lies in its comprehensive examination of the interplay between leadership, institutional design, and the digitalization of public services. While existing literature often focuses on individual aspects of this topic, such as leadership in digital transformation or institutional factors affecting public service delivery, our research takes a holistic approach by integrating these elements into a unified framework. Furthermore, our research goes beyond mere description or analysis of isolated case studies. Instead, we aim to develop a nuanced understanding of how leadership and institutional design interact to shape the process and outcomes of public service digitalization. By exploring the dynamic relationships between leadership styles, organizational structures, governance mechanisms, and technological innovations, we seek to uncover the underlying mechanisms driving successful digital transformation in the public sector.

RESEARCH METHODS

This research uses a qualitative approach to explore information regarding appropriate leadership and institutional design in digitalizing public services. To obtain primary data, in-depth interviews were conducted with research informants consisting of the Head of the Communications and Informatics Service, the Head of the Population and Civil Registry Service, the Head of Tuah Madani Subdistrict, and operator staff. Then, direct observations were carried out for one month at the three organizations. Secondary data was obtained through document analysis.

Figure 1.
Research Data Analysis Process

Collect Data	In-depth interview	Document	Entering Data Source to Nvivo 12 Pluss App	Data Classification and Coding Nvivo 12 Plus	Data Analisys
• In-depth interview • Dokumen • Observation	• Determining research informants • Preparing a list of interview guidelines • Conducting face-to-face interviews directly • Taking notes and recording interview results	• Collecting documents related to the research	• Entering data Interview Result and Documents to Nvivo 12 Plus via Import Feature • Entering data Media via Ncapture Feature in Chrome and Transfering data to Nvivo12 plus	• File Classification • Code • Node • Case • Relationship	• Crosstab • chart

Source: Process by the Author, 2024

This research was analyzed using a qualitative data analysis program called Nvivo 12 Plus. This application makes collecting, managing, and analyzing research data easy. The results of interviews with research informants and documents were input into the Nvivo 12 Plus data processing application dataset using the data input feature. Data entered into the application will be coded according to each research indicator in the form of nodes that follow the scope of analysis and data using the crosstab, chart, and chart hierarchy features in the Nvivo 12 Plus application. Data was obtained based on coding results, which were then explained in triangulation, and the digitalization of services produced a picture of leadership and institutional design. The results of the analysis are presented descriptively.

RESULTS AND DISCUSSIONS

Leadership Role in the Digitization of Public Services

Leadership in digitalization public services plays a crucial role in directing digital transformation and providing maximum benefits to the public. Based on the interviews conducted with respondents, it is known that leadership plays a significant role in realizing digital public services. Digital services are realized when leaders have a mature vision and strategy for their implementation. Leaders must be able to establish partnerships and collaborate with other departments or institutions related to the implementation of digital public services. Leaders

must catalyze the change from manual systems to digital services, especially by understanding policy implementers, such as employees directly providing public services. Every digitally conducted service activity must also be evaluated and measured periodically to determine the extent of achievement of the digital services that have been implemented. The research results are presented in the following figure:

Figure 2.
Leadership Roles in Public Service Digitalization
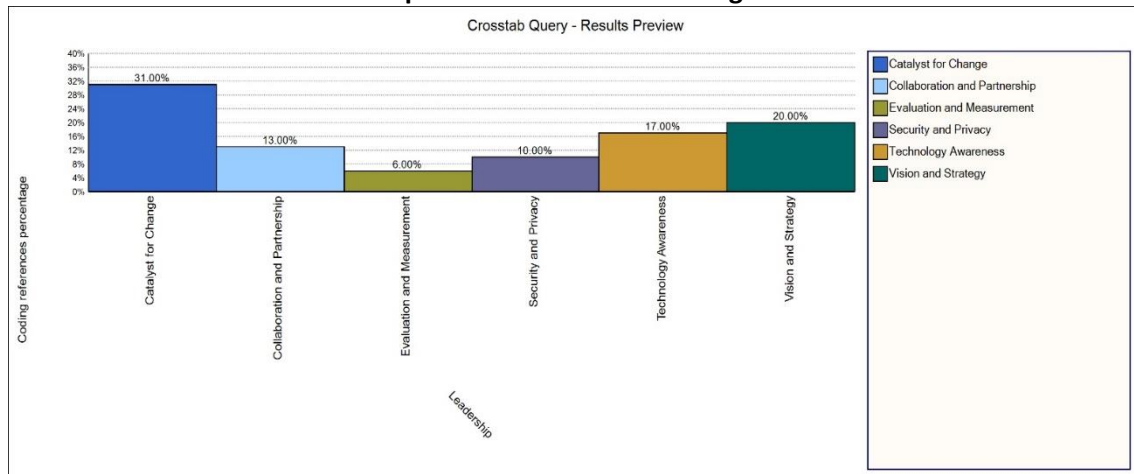
Source: Captured From Nvivo 12 by Researcher (2023)

Figure 2 illustrates that the leadership roles in public service digitalization in Pekanbaru consist of Evaluation and Measurement at 6%. This role involves evaluating the effectiveness and impact of digitalization efforts through a rigorous measurement and evaluation process. Managers in this role are responsible for identifying key performance indicators (KPIs), collecting relevant data, and analyzing results to determine the success of several technical initiatives. They play a crucial role in identifying areas for improvement and providing information. Future strategic decisions act as a catalyst for change by 31%. Leaders in this role promote and facilitate the adoption of digital technologies and practices within the organization. They inspire, motivate, and empower employees to embrace change, overcome obstacles, and adapt to new working methods. They create a culture of innovation and continuous improvement through effective communication, training, and support.

Ensure security and privacy by 10%; Leaders in this role ensure digital systems, data, and information security and privacy. They develop and implement robust cybersecurity measures, compliance frameworks, and data protection policies to protect against cyber threats, breaches, and unauthorized access. Their efforts are critical to building trust among stakeholders and maintaining the integrity of digital services. Increasing technology awareness by 17% is the responsibility of leaders in this role who educate and inform stakeholders about digital technologies' benefits, risks, and potential impacts. They raise awareness of emerging trends, best practices, and innovative solutions, helping develop employees' and communities' digital culture and skills. Their efforts contribute to informed decision-making and efficient use of technological resources.

Collaborative efforts and collaboration with stakeholders amounted to 13%. Leaders in this role focus on developing cooperation and partnership with diverse stakeholders, including

government agencies, private sector organizations, civil society groups, and community members. They facilitate dialogue, exchange knowledge, and mobilize resources to co-create solutions, address shared challenges, and achieve shared goals. Through effective collaboration, they enhance the impact and scalability of digital initiatives and set vision and strategy at 20%; setting vision and strategy is a foundational leadership role that involves defining the overarching goals, priorities, and direction of digital transformation efforts. Leaders in this role develop strategic plans, roadmaps, and priorities aligned with organizational objectives and stakeholder needs. They provide direction, guidance, and inspiration to guide decision-making and resource allocation, ensuring that digitalization efforts are purposeful and aligned with the organization's mission and values.

The research results found that the evaluation and measurement conducted by leaders in implementing digital public service has yet to be performed, making it impossible to measure the extent to which the goals of implementing digital public service have been achieved. Evaluation and measurement are crucial as they help assess the effectiveness of digital public service digitization (Hsieh et al., 2003). The extent to which digital technology has improved public service efficiency, speed, and quality can be evaluated by collecting relevant data and information. Evaluation and measurement activities help identify potential issues that may arise during the digitalization of public services. By analyzing data, barriers, constraints, or deficiencies in implementing digital technology can be identified, enabling appropriate corrective measures. Evaluation and measurement also provide a solid factual basis for digital public service digitization decision-making. The collected data and analysis help identify areas that require improvement, measure the impact of changes, and determine priorities for further action (Ingrams, 2023).

Effective leadership in digitalizing public services requires a clear vision of the future driven by technology. Leaders must develop directed strategies to achieve these goals, considering community needs, operational efficiency, and service quality improvement. (Andriani et al., 2018). Additionally, leaders must be able to set long-term goals and create clear guidance on the desired direction and the ease of the strategy steps needed to achieve digital public service digitization. (Bassem & Adel, 2018). Leadership also needs to strengthen efficiency and effectiveness in digital public service digitization. They enhance government efficiency and effectiveness by automating processes, reducing bureaucracy, and improving accessibility. With the right vision and strategy, leaders can prioritize investments in the right technology, identify areas that need change, and develop measures to enhance productivity and service quality.

The most crucial aspect of the system changes from manual to digital is the implementers' understanding of the change. They can execute changes effectively if leaders can be influential organizational change agents. They need to promote the acceptance of change and overcome obstacles that may arise during digitization. Strong leaders will motivate employees to adapt to change, provide necessary training and support, and create an organizational culture that supports innovation and collaboration. Digitalizing public services involves significant changes in how the government interacts with its citizens. Leaders with a strong vision and sound strategy can drive this transformation by advocating using relevant technology and accelerating innovation adoption. (Doberstein, 2016). They can also build an organizational culture that supports change and motivates employees to adapt to new technology. Therefore, a leader must have a strong understanding of information technology and current trends. This includes

understanding the strengths and weaknesses of various technology solutions relevant to providing public services. Leaders must identify the right technology to meet the needs and achieve the organization's goals. Leadership in digitalization public services involves collaboration with internal and external stakeholders. Leaders must build partnerships with the private sector, community organizations, and academics to share knowledge, resources, and experiences. Through this collaboration, leaders can gain valuable insights, expand the reach of technology solutions, and minimize implementation risks. (Anthopoulos et al., 2016).

Evaluation and measurement will become a force of accountability and transparency in the provision of public services. Precise data and metrics can account for whether the implementation of digital technology has achieved the set goals and whether public services have improved overall. This will also be the foundation for continuous improvement and enhancement in the digitization of public services. By identifying successes and failures and learning lessons from previous implementations, the government can improve strategies and implement best practices to enhance user experience and public service efficiency. (Breaugh et al., 2023).

Evaluation and measurement help assess policies and budget allocations for digitalizing public services. The collected data and information can help assess whether the investments have yielded the expected results and whether resources have been allocated effectively. Overall, evaluation and measurement are essential in digitalizing public services to ensure success, address weaknesses, and direct necessary improvement steps in digital government transformation. Leaders must use a practical evaluation and measurement process to track progress in digitalizing public services. They need to identify relevant performance indicators, collect necessary data, and conduct analyses to measure the impact of changes. Policy actors' motivation and commitment to digital transformation can be influenced by various factors such as personal beliefs, values, and career aspirations. Those intrinsically motivated by purpose, passion for innovation, or desire to positively impact society may demonstrate greater resilience, perseverance, and dedication in driving digital initiatives. With continuous training, leaders can identify improvement opportunities and take necessary actions to ensure the success of digitization implementation.

Institutional Roles in Public Service Digitalization

Institutional involvement in digitalizing public services is about forming and regulating organizational structures that support the effective implementation of digital public services. Solid and effective institutions are crucial in digitalizing public services. They can provide guidance, coordination, supervision, and the cultural change needed to implement successful digital solutions and maximize public benefits. The research results regarding the role of institutions during the digitization of public services in Pekanbaru are presented in Figure 2 below:

Figure 3.
Institutional Role in the Digitalization of Public Services
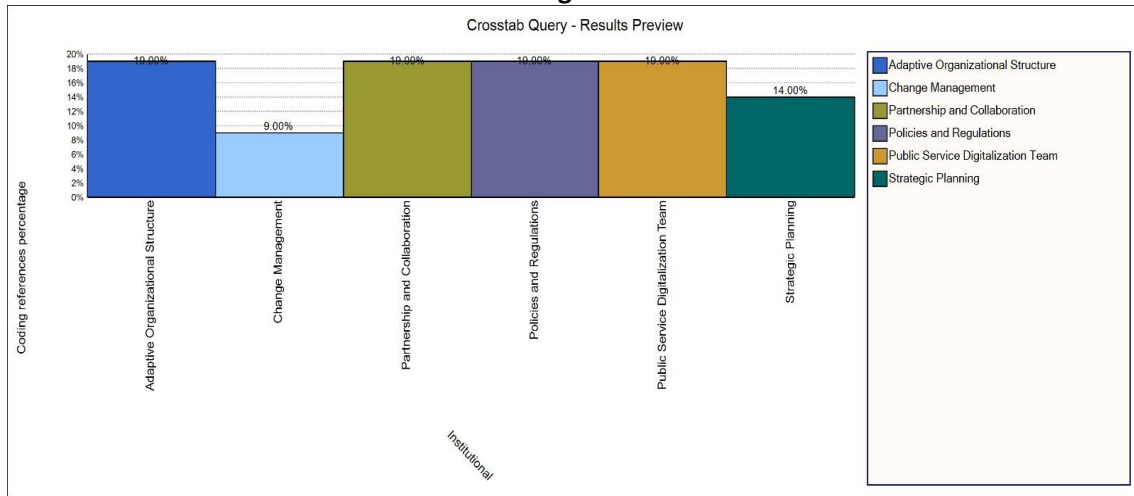
Source: Captured From Nvivo 12 by Researcher (2023)

Figure 3 illustrates the institutional role in the digitalization of public services in Pekanbaru City, consisting of several crucial aspects: Policy and Regulation, Partnerships and Collaborations, Change Management, Strategic Planning, Adaptive Organizational Structure, and the existence of the Public Service Digitalization Team. Digitalization institutions in public services must have a clear policy and regulatory framework. This includes privacy and data security policies, interoperability standards, the use of open technology, and addressing ethical issues related to the use of technology in public services. These policies and regulations should reflect best practices and ensure compliance with applicable regulations. Institutions that are digitalizing public services can benefit significantly from partnerships and collaborations with the private sector, civil organizations, academia, and other stakeholders. These partnerships can involve knowledge, resources, and experience and expand the reach of available technology solutions. Through collaboration, institutions can accelerate innovation, reduce costs, and improve the quality of public services.
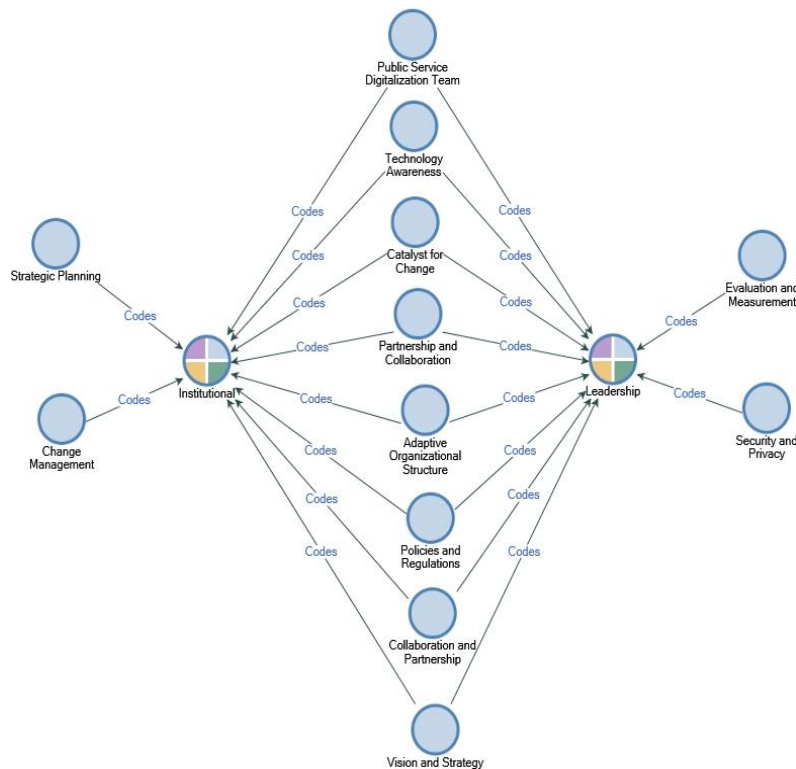
Successful institutions in digitalizing public services must be able to manage changes related to technology implementation. This involves effective communication, training, and development of employees, as well as support for adopting new technology. Change management also includes continuous monitoring, evaluation, and adjustment to ensure the success of implementation and sustainable improvement in public services. Successful institutions in the digitalization of public services require mature strategic planning. This involves setting clear goals, prioritizing support, and developing targeted action plans to implement digitalization initiatives. Strategic planning should cover technology needs, human resources, budget, policies, and risk management, (Mukhopadhyay & Bouwman, 2018). An adaptive organizational structure is an organizational structure that can quickly respond to changes and meet the community's needs. Successful institutions in digitalizing public services must have an adaptive and responsive organizational structure to technological changes. The formation of specialized units or divisions responsible for digitalization initiatives and integrating information technology functions into existing organizational structures should be done to avoid overlapping roles.

The organizational structure should facilitate effective collaboration and coordination between different units and enable quick and flexible decision-making (Wouters et al., 2023). Establishing the Public Service Digitalization Team is crucial in institutionalizing public services. This team can consist of internal personnel already connected to information technology or involve external experts with knowledge and experience in technology implementation. The team must have the skills to manage projects, develop software, ensure information security, manage data and integrate systems. Institutional design can be identified as a structural component of collaborative projects. It reflects a set of formal and informal rules that guide interactions and seeks to align them with the goals of activities (Torfing et al., 2019), referring to this type of structure as an organizational environment.

Leadership and Institutional Design in the Digitalization of Public Services

Digitalizing public services requires leadership and institutional design changes to address challenges in the digital era. Considerations in the design of leadership and institutions in digitalizing public services include visionary leadership needed to articulate the vision and strategy of public digitalization services. Visionary leaders can inspire and motivate organization members to accept and implement changes in digital transformation. With visionary leadership, it will be easier to form competent teams. Digitalizing public services requires technological expertise and a strong understanding of digital innovation. Forming skilled and competent teams in information technology and communication is essential, ensuring they have adequate knowledge of public service aspects.

Figure 4.
Leadership and Institutional Design in the Digitalization of Public Services

Source: Captured From Nvivo 12 by Researcher (2023)

Figure 4 indicates that digitalizing public services requires preparation in leadership and institutions to realize digitalization in services. The roles of leadership and institutions influence changes in the capabilities and skills of government employees. Training and development programs should be provided to enhance digital literacy, technological understanding, and innovation capabilities. Additionally, leaders must encourage continuous learning and facilitate knowledge and experience among organization members. Digitalization of public services often involves the engagement of various stakeholders, both in the public and private sectors. Building partnerships and collaborative strategies with external entities, such as technology companies or civil society organizations, is essential to support digital transformation.

Increased transparency and public participation in decision-making processes will also be realized with the digitalization of public services. Well-designed leadership and institutions should facilitate citizen participation, involve them in designing digital solutions, and ensure fair access and coverage of digital services. (Fliervoet et al., 2016). Risk and security management and privacy must be carefully handled so that the public feels secure with the data they provide (McIntyre & Schultz, 2020). Leadership must prioritize data protection compliance with regulations and provide reliable infrastructure and security systems to protect sensitive information. It is essential to implement a sustainable evaluation cycle to measure the impact of digitalization and make continuous improvements. Adaptive leadership will use data and feedback for decisions and improvements in public service digitalization efforts. Effective leadership and institutional design in digitalizing public services must holistically integrate technology, people, and processes. This requires visionary leadership, cultural transformation, and adaptive solid capabilities in the face of rapid changes in the digital environment.

CONCLUSIONS

Digitalizing public services requires leadership and institutional design to support achieving digital service implementation goals. The leadership needed in digitalization is an individual leader capable of ensuring the security and privacy of service users and must conduct evaluations and measurements of the services provided. The institution must be able to manage change and adapt to the needs of digital service digitalization, and strategic planning must be in place within the institution implementing digital services. Together, leadership and institutions must support the creation of technology awareness for both service providers and service users, strive to create good collaboration for digital service perfection, and change organizational structure with policy-making supporting the achievement of good services for the public. This research finds that innovation in leadership and institutions is needed to adjust to digital services, conducted from structural and policy perspectives, aligning with the shift from manual to digital services. This research impacts the implementation of digitalizing public services, which has so far needed more suitable leadership and institutional design for public service digitalization. This research provides information, perspectives, and considerations for decision-making in implementing digital public services.

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