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Digital Inclusion and Accessibility E-Government in the Padang City

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Abstract

The implementation of e-government in Indonesia continues to evolve alongside the transformation of public services into digital formats. This article aims to analyze the level of inclusiveness and accessibility of e-government services in the Padang City using the Technology Acceptance Model (TAM) approach. This research focuses on how the perceived usefulness and perceived ease of use of digital services affect public acceptance of this technology. The research method employed is qualitative descriptive, with data collected through interviews, observations, and document analysis. The findings indicate that although digital services in Padang offer numerous benefits, significant challenges remain in ensuring accessibility for vulnerable groups, including persons with disabilities. This article recommends enhancing accessibility features in e-government applications and implementing policies that support digital inclusiveness across all sectors of society.

Keywords:

e-government; inclusion; accessibility

Introduction

The role of Information and Communication Technology (ICT) is increasingly recognized. Adopting private-sector approaches into public services has been viewed as one of the primary methods to improve services and foster innovation. Concurrently, the necessity to perform better before the public and to ensure that the community receives a diverse array of up-to-date and participatory services has emerged as a priority agenda, culminating in the transformation of public services. Public service transformation, or e-government, refers to the utilization of digital technology by the government for various functions, ranging from the provision of services and information to more participatory and interactive activities (Leonidas, 2014). It is hoped that e-government will enhance governmental performance and meet public expectations for improved governance. The digitization of public services aims to facilitate service delivery within public organizations by creating a well-managed system that can be accessed swiftly and accurately, while also fostering better interaction opportunities between the public and the government (Indrajit, 2016).

E-government initiatives in Indonesia are mandated through Presidential Instruction No. 3 of 2003 concerning the National Policy and Strategy for E-Government Development. The instruction contains directives to develop e-government by optimizing the use of information

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technology. The state of e-government in Indonesia has shown significant improvements over the years. According to the *E-Government Development Index (EGDI)* survey conducted by the United Nations, Indonesia climbed 11 ranks in 2022 compared to 2020, ranking 77th from 88th in 2020 and 107th in 2018.

Table 1.

***E-Government Development Index (EGDI)* Indonesia 2016 – 2022**

No.	Year	Ranking	EGDI
1.	2016	116	0,4478
2.	2018	107	0,5258
3.	2020	108	0,6612
4.	2022	77	0,7160

Source: E-Government Survei 2022 byDepartment of Economic and Social Affairs, United Nation

The survey results indicate that the development and implementation of the Electronic-Based Government System (SPBE) in Indonesia are progressing well. This achievement is attributed to the hard work and cooperation of the SPBE implementation team in ministries, agencies, and local governments. According to data from the Ministry of Administrative and Bureaucratic Reform (KemenpanRB), as of 2024, a total of 27,000 public service applications have been recorded, including duplicate applications. This also includes applications originating from the regions. The City of Padang, as the capital of West Sumatra province, possesses significant potential for e-government development. According to the West Sumatra Provincial Statistics Agency (BPS) publication in 2021, 63.61% of Padang's 909,040 residents are internet users. This should serve as a note to enhance the implementation of e-government in the City of Padang. As of 2023, there are 88 websites and applications launched by the Padang City Government to assist in service delivery across various agencies.

However, conventional services have only recently been "digitalized" without considering the actual impact on the public. While the implementation brings many benefits, a significant challenge remains in ensuring the inclusiveness and accessibility of these digital services. According to Aisyah (2019), digital inclusiveness refers to the extent to which technology can be accessed and utilized by all segments of society, without exception. Meanwhile, accessibility refers to the ability of all individuals, including vulnerable groups and persons with disabilities, to access services without physical or technical barriers.

In this context, it is essential to evaluate how the Padang City Government has worked to ensure inclusiveness and accessibility in the implementation of e-government. Based on a review of the literature on previous studies, including research on user satisfaction with the Integrated Information System (SIPD) in Gianyar Regency (Riania, Putri, & Pratama, 2021) and the impact

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of satisfaction on increasing e-government adoption (Sorongan, Sari, Kusno, & Zulfariansyah, 2023), the approach used in this research to analyze technology acceptance in e-government services is the Technology Acceptance Model (TAM) introduced by Davis (1989). This model assesses the factors influencing technology adoption, particularly perceived ease of use and perceived usefulness of the implemented technology (Nugraha, Achmad, Warsono, & Yuniningsih, 2023). In the context of Padang, TAM can analyze how the community receives and uses e-government services and the factors that hinder or support inclusiveness and accessibility.

Therefore, this study aims to analyze the level of inclusiveness and accessibility of e-government in the City of Padang using the Technology Acceptance Model (TAM). This research is expected to provide deeper insights into the factors influencing the community's acceptance of digital services and formulate policy recommendations to enhance the inclusiveness of digital services provided by the Padang City Government.

Methods

The research methodology essentially refers to scientific methods for obtaining data for specific purposes (Sugiyono, 2008). This research employs a qualitative approach with a descriptive method. Data collection steps in this research include interviews, observations, and document gathering. Data analysis is conducted from the data collection stage to the report writing stage. The data analysis technique used is the analysis according to Miles and Huberman (1992), which includes data reduction, data presentation, and conclusion drawing. These three steps are carried out and repeated until the research is completed. The validity of the data uses source triangulation, which compares and checks the degree of trustworthiness of the information obtained through different times and methods (Sugiyono, 2008). Cross-checking several sources of information will produce conclusions regarding the inclusiveness and accessibility of e-government in the City of Padang.

Results and Discussion

Perceived Usefulness

The International Organization for Standardization (ISO) defines usability as the degree to which a product can be used by specific users to achieve their goals effectively, efficiently, and satisfactorily within its intended use context. Usability can be evaluated through the benefits perceived by users regarding the quality of the website, including trustworthiness, being up to date, and the level of detail of information.

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The implementation of smart city initiatives in Padang has reached its sixth year since being designated as one of the 100 smart cities by the central government. Gradually, public facilities and government administration services have utilized electronic systems to facilitate service delivery to the citizens of Padang. Several document processing tasks, such as family cards at the Department of Population and Civil Registration, can now be completed online, allowing citizens to print these documents from home. The use of electronic signatures on documents issued by several regional organizations (OPD) in Padang has eliminated delays caused by the need for signatures from department heads. Public services that have employed Internet-based applications include:

1. **External Services to the Public**
   a. Online Payment Service System (POSS) for Property Tax (PBB)
   b. Reporting of Property Tax Notification Letters (SPPT PBB)
   c. Online Licensing (Saporancak)
   d. Population Administration Information System (SIAK)
   e. E-Kelurahan (administrative service application at the village and sub-district levels) integrated with the Integrated Licensing Service System (SIM Paten)
   f. Padang City Dashboard
   g. Public Procurement Information System (SIRUP)
   h. E-Procurement Application
   i. E-Puskesmas (Puskesmas Management Information System)
   j. Online Complaint Web
   k. SILARAS (Information System for Reporting Violence)
2. **General Administration and Management**
   a. E-Takah
   b. SiSukma (electronic letter)
   c. Licensing administration SIM and departmental email
3. **Legislative Administration**
   a. JDIH (Legal Product Information System)
4. **Development Management**
   a. E-Planning (planning)
5. **Financial Management**
   a. E-Budgeting (Budget Management Information System)
   b. SIMBADA (Asset Inventory Management Information System)
   c. Salary application integrated with the TASPEN salary system
   d. SIPKD (Regional Financial Management Information System)

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6. Personnel Management

a. SIMPEG (Personnel Management Information System)

The digital service applications mentioned above, as a form of e-government implementation in the City of Padang, provide convenience for each agency in delivering services to the public and facilitate citizens in accessing services, from population documents to village levels. For instance, the e-Kelurahan application processed 4,341 services in Kuranji Village during 2022, making it the village with the highest service demand, compared to a population of 38,308. Utilization of the e-Kelurahan service can be seen from the number of certificates issued by all villages in Padang from 2020 to 2022, as detailed in the table below:

Table 2.

Types of Certificates Issued by Villages

Nama Izin	Jumlah Selesai
Business Certificate	36169
Individual Not Able	32790
Family Not Able Certificate	15932
Marriage Introduction Letter (N1)	14004
Individual Not Able Certificate (Non-DTKS)	12568
Business Residence Certificate	11249
Death Certificate	6147
Heir Certificate	5766
Unmarried Certificate	4464
Income Certificate	4265
Police Clearance Certificate (SKCK)	3379
Change of Employment Certificate	2363
Widow/Widower Certificate	1834
Parent Marriage Permission (N4)	1676
Impact of COVID-19	1176
Good Conduct Certificate	1123
Wedding Celebration Recommendation	960
Name Discrepancy Certificate	782
Celebration Statement	652
NOT USED ANYMORE	589
Home Ownership Certificate	510
Parent's Certificate	509
Missing Person Certificate	410
Death of Spouse Certificate (N6)	321
Origin Statement	293
Widow/Widower Statement	265
Income Not Taxable Certificate	154
Land Object Statement	100
Family Relationship Certificate	66
Business Certificate	51

Source: Communication and Information Office of Padang City in 2023

Based on the table above, it is evident that the utilization of e-Kelurahan services is quite high. The implementation of these services varies among villages according to the population size and the community's service needs in each area. Service providers, such as villages, sub-districts, and departments, have reported benefits from utilizing digital services compared to traditional

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manual service delivery. With manual processing, officials had to input each citizen's data individually into predefined formats. With digital services, particularly in population administration that is integrated with the population data of Padang City, officials can simply enter the name or ID number, and the relevant personal data will automatically appear. Furthermore, citizens can submit requests for document issuance or permits online from anywhere, which reduces both distance and time, thereby significantly enhancing service efficiency. However, in public service delivery, many instances of citizen dissatisfaction are still observed. Generally, complaints from the public stem from the online service mechanisms, which are perceived as complex and convoluted

Perceived Ease of Use

Accessing websites is often hindered by designs that are not user-friendly. E-government services that lack user-friendliness can affect the satisfaction of users and the productivity of services. Therefore, easy access to e-government applications should be prioritized. As a new service, e-government applications must display clear information that facilitates smooth service processes and feature attributes tailored to service needs. Information about service processes that should be published includes procedures, requirements, costs, and the time needed. This information must be made publicly available, easily accessible, and comprehensible.

The applications and websites of e-government in Padang are managed directly by the Communication and Information Office of Padang City. The Communication and Information Office serves as the head of the Smart City Implementation Team in Padang. In this context, the Office has undertaken various activities aimed at inventorying the management needs of the websites and implementing integration of existing information systems within the Padang City Government. This strategy is part of the Communication and Information Office's efforts to enhance the quality of public services through the integration of online-based public services and the establishment of user-friendly web services. User-friendly means that applications are easy to use, easily understood by users, and provide benefits as expected.

Based on the researcher's observations of several digital applications launched by Padang City, it was found that the service menu lists on the applications are organized in stages and function according to the established service flow. For instance, the e-Kelurahan application serves as a population management tool at the village level, while SIRANCak functions as a service application for population matters at the Department of Population and Civil Registration of Padang City. Each feature supports the issuance of documents at the village level, accompanied by clear information on each menu. Such as information regarding the description of the e-Kelurahan service, service procedures, instructions for each service menu, and the e-Kelurahan service status checking information indicating the progress of document completion as follows:

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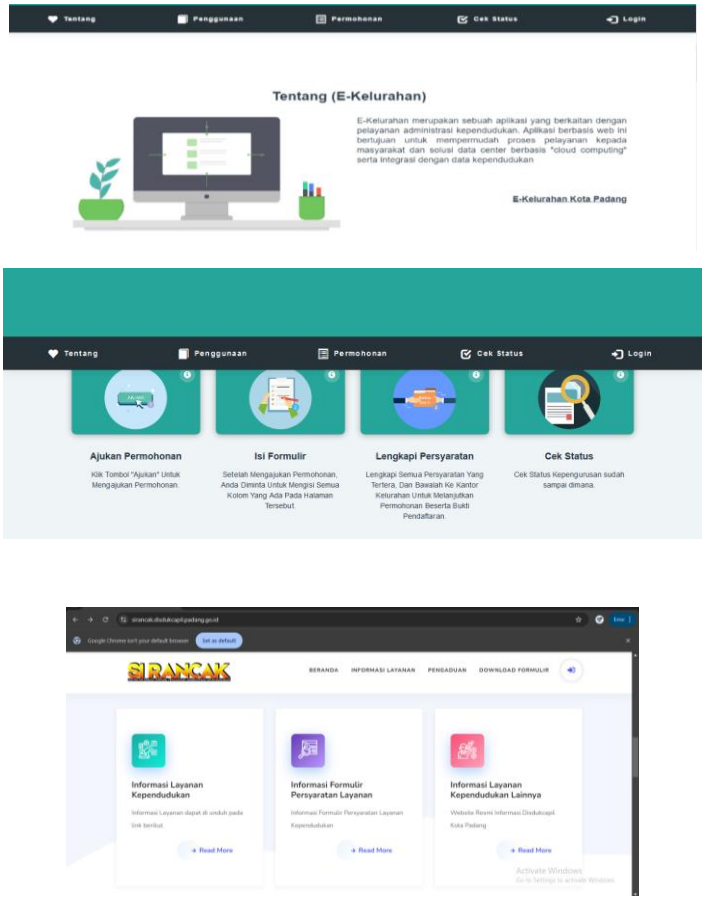
Picture 1.

Information on Service Applications in the Padang City



Source: e-kelurahan.go.id,sirancak.go.id

Accessibility in e-government applications means that the applications created are universal, meaning they can be accessed by everyone, regardless of any limitations they may have. Fundamentally, service applications are designed to be accessible to their target audience irrespective of their abilities. This is an essential aspect as it directly impacts the achievement of targets and goals. When applications are poorly designed, they create barriers that can hinder access for some individuals.

The service applications launched by the Padang City Government are web-based digital services that can be accessed through various platforms such as smartphones, iOS devices, and personal computers. However, challenges persist when accessing services like e-Kelurahan, Saporancak, or Sirancak, with errors in the applications and unstable networks causing disruptions in access, necessitating a return to manual processing. Currently, all villages in Padang are provided with internet access by the Padang City Government at a speed of 10 Mbps for each village. Based on previous research conducted, network issues in the villages are not due

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to small bandwidth or capacity but rather due to the outdated devices used by each agency, which disrupts network performance.

When linked to the aspect of inclusiveness, digital service applications in Padang have not yet been accessible to all community groups, particularly persons with disabilities. Individuals with disabilities often encounter challenges in accessing digital services. The e-government services in Padang currently lack disability-friendly features such as alternative text or voice functions, meaning visually impaired individuals require assistance from others to access these services. Therefore, it is essential to design applications to be more inclusive, including for individuals with visual, auditory, physical, and cognitive disabilities. As a recommendation, the Padang City Government can enhance accessibility and inclusiveness in application design by adhering to international standards such as the Web Content Accessibility Guidelines (WCAG), which provide design guidelines for creating more inclusive applications

Conclusion

The implementation of e-government in Padang has significantly facilitated public access to various services. However, this study found that while the perceived usefulness and ease of use of e-government applications are generally high, there are shortcomings in inclusiveness and accessibility, particularly for persons with disabilities. Digital services are not yet fully accessible, necessitating the government to improve accessibility features and ensure that all segments of society can equally access these services. Additionally, enhancing infrastructure and providing digital literacy training is crucial, especially for underserved communities. Therefore, it is hoped that e-government in Padang will become genuinely inclusive and accessible to all its citizens.

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