Journal of Ethnic and Cultural Studies
2026, Vol.13, No. 5, 366-390
http://dx.doi.org/ 10.66815/ejecs/3471

Copyright 2026
ISSN: 2149-1291

Digital Citizenship in an Aging Society: Culture, Inclusion, and Public-Service Governance in Yogyakarta

Yudi Rusfiana[1]
Institut Pemerintahan Dalam Negeri, Sumedang, Indonesia

Dewi Kurniasih
Universitas Komputer Indonesia, Bandung, Indonesia

Abstract: This study examines how platform design, government arrangements, and Yogyakarta's cultural and social setting shape digital accessibility for older adults. It asks how documented inequalities in later-life connectivity, Javanese norms of respect and intergenerational support, and the institutional design of Jogja Smart Service (JSS) affect the conditions for equitable digital citizenship. A qualitative documentary case study was conducted using 23 case documents collected and checked between September and October 2026, including national and regional statistics, laws and presidential regulations, the JSS portal and terms of use, municipal communications and complaint data, and Yogyakarta demographic publications. The qualitative content analysis and pattern matching followed a conceptual framework linking five accessibility dimensions, six governance mechanisms, and a cross-cutting cultural-social dimension. National internet access among older adults rose from 26.42% in 2024 to 34.13% in 2025, but access remains uneven by age, disability, economic position, and residence. Yogyakarta is especially salient because the Special Region had the highest share of older adults in Indonesia in 2025 (17.83%). JSS is an integrated municipal platform that combines online and offline public-service functions and requires registration based on personal data. The case documents also show an active complaint channel within JSS. When assessed alongside research on Javanese aging, these features suggest that family and community assistance can enable access while also creating risks to autonomy, privacy, and the invisibility of non-users. Inclusive municipal digital government should treat cultural intelligibility, accessible design, assisted-channel continuity, privacy-safe support, and representation of diverse older adults as linked public-value obligations rather than separate technical concerns.

Keywords: older adults, culture, digital inclusion, Jogja Smart Service, Indonesia, Yogyakarta

[1] Corresponding Author: Corresponding Author: A Lecturer of Institut Pemerintahan Dalam Negeri, Sumedang, Indonesia. Email: yudirusfiana@ipdn.ac.id
Copyright © 2026 by the author(s). Published by CECS Publications, United States. This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Digital government increasingly connects identities, data, workflows, payments, complaints, information, and sectoral services through shared platforms. Such integration can make transactions faster, more traceable, and less dependent on location, but it can also transfer administrative burden to citizens who must navigate devices, connectivity, terminology, authentication, and error recovery (Buyannemekh et al., 2026; Casalini & Zavolokina, 2025; Chen & Wang, 2026; Hegemann & Ritz, 2026). The United Nations E-Government Survey 2024 therefore places inclusion and accountability alongside technological progress. Public-value research likewise shows that citizens judge digital services through fairness, trust, transparency, and democratic value as well as convenience (Lee et al., 2024; Luna et al., 2024; Mansoor, 2021).

These concerns become sharper in later life. Digital exclusion among older adults is heterogeneous and cumulative: device access, skills, self-efficacy, anxiety, privacy concerns, sensory or motor limitations, cognitive load, social support, and interface design interact rather than operate independently (An et al., 2024; Ge et al., 2025; Kim et al., 2023). Accessible web-design research similarly identifies cognitive, physical, psychological, security, and structural barriers and cautions against treating older adults as a uniform group (Chiriboga-Casanova et al., 2025). For public services, the central issue is not whether a service exists online but whether citizens with unequal capabilities can convert digital availability into an effective and dignified service outcome.

Culture is part of that conversion process. In the Special Region of Yogyakarta (Daerah Istimewa Yogyakarta [DIY]), older adults live in a social environment where Javanese cultural values remain influential. Research with older adult return migrants in DIY identifies values such as gotong royong (mutual assistance), ewuh pakewuh (sensitivity to others), tepo seliro (tolerance), and differentiated use of Javanese language as resources for social adaptation (Noveria et al., 2025). Research in Yogyakarta also emphasizes family responsibility, social reciprocity, and the continuing productive and relational roles of older people (Anaf et al., 2024), while community-dwelling older adults in Sleman describe autonomy, family relationships, and harmonious social relations as elements of aging well (Kusumaningrum et al., 2026). These findings make culture analytically relevant to digital public services: family or community members may mediate access, language choices can shape intelligibility, and norms of deference may influence whether older residents ask for help, complain, or disclose difficulty.

Yogyakarta's special-autonomy arrangements under Law No. 13/2012 recognize cultural affairs as an area of distinctive regional authority (Government of Indonesia, 2012). Existing community-facing structures, including Posyandu Lansia (older-person health posts), Bina Keluarga Lansia (family-development groups), and Sekolah Lansia (older-person learning programs), could provide familiar settings for optional, supervised digital-public-service guidance. Their suitability for JSS, staffing capacity, and ability to safeguard consent and credentials remain proposals for assessment, not documented JSS delivery arrangements. The cultural perspective must not be romanticized. Intergenerational assistance can widen access, but reliance on relatives can also expose passwords, identity data, health information, and other personal information, and shift administrative work from government to households. Gender, disability, class, and age may intersect with those arrangements; available Indonesian evidence links sex with different ways of learning mobile-phone use but does not establish which relatives typically provide JSS assistance (Laksmi et al., 2024). The relevant question is therefore not whether family support is culturally valuable, but how a digital public-service system can benefit from social support without making such support a hidden prerequisite for citizenship.

Direct evidence on technology use supports this proposed connection. In a cross-sectional study of 109 community-dwelling older adults in Jakarta, Laksmi et al. (2024) found that family members played an important role in teaching mobile-phone skills and that only

Journal of Ethnic and Cultural Studies
2026, Vol.13, No. 5, 366-390
http://dx.doi.org/ 10.66815/ejecs/3471
Copyright 2026
ISSN: 2149-1291

19% of respondents learned to use phones independently; learning methods also differed by sex and age. A qualitative study in Singapore likewise identified relatives, friends, and health professionals as sources of awareness and support for older adults using digital health technologies (Leong et al., 2024). These studies focus on mobile and digital-health use, not JSS, and therefore support the plausibility of relational digital assistance rather than its observed prevalence in Yogyakarta municipal services.

o--Indonesia is simultaneously aging and digitizing. The 2025 Intercensal Population Survey placed older adults at 11.97% of the national population (Badan Pusat Statistik [BPS], 2026). In 2025, DIY had an even higher share of older adults at 17.83%, the highest among Indonesian regions (Badan Pusat Statistik Provinsi Daerah Istimewa Yogyakarta [BPS DIY], 2026a). National policy strongly promotes integrated digital government through the Electronic-Based Government System (Sistem Pemerintahan Berbasis Elektronik [SPBE]): Presidential Regulation No. 95/2018 established the framework, Presidential Regulation No. 132/2022 established the national architecture, and Presidential Regulation No. 82/2023 accelerated integrated priority services (Government of Indonesia, 2018, 2022b, 2023). The Public Services Law also establishes participation and complaint-handling obligations, while the Personal Data Protection Law strengthens the rights context for data-intensive services (Government of Indonesia, 2009, 2022a). In emerging economies, data-driven public infrastructures also raise wider concerns about digital rights, surveillance risk, and democratic accountability (Sharmin, 2026).

The Welfare of Older Persons Law recognizes the need to facilitate access to public facilities and services (Government of Indonesia, 1998), while Law No. 8/2016 establishes disability rights, accessibility, and reasonable accommodation (Government of Indonesia, 2016). Presidential Regulation No. 88/2021 sets out a national aging strategy that emphasizes age-friendly environments, institutional coordination, and the rights of older adults (Government of Indonesia, 2021). These duties complement SPBE integration rather than being superseded by it. Jogja Smart Service (JSS) is an instructive municipal case. The City of Yogyakarta presents it as an integrated platform and virtual city hall where residents access multiple municipal functions. Its terms of use define JSS as a mobile and web platform for online and offline public services and require registration with personal data linked to public-service functions (Dinas Komunikasi Informatika dan Persandian Kota Yogyakarta, n.d.; Pemerintah Kota Yogyakarta, 2022). Municipal open data further show that the UPIK complaint channel within JSS received 3,545 complaints in 2025, of which 92.07% were recorded as completed, confirming that JSS is also an accountability interface rather than only an information portal (Dinas Komunikasi Informatika dan Persandian Kota Yogyakarta, 2026b).

The study addresses three research questions: RQ1: What do official statistical and JSS-related documents show about digital access conditions relevant to older adults in Yogyakarta? RQ2: How do cultural and social mediation, accessibility requirements, and governmental arrangements interact in the documented JSS service ecosystem? RQ3: What theoretical, policy, and practical implications follow for culturally responsive and age-inclusive digital public services? The article contributes by integrating later-life digital inclusion with culture and public-service governance and by distinguishing documented case evidence from interpretive claims that require future user research.

Literature Review

Digital Accessibility, Meaningful Inclusion, and Later-Life Heterogeneity

Digital inclusion has at least three distinct layers: access to technology, the capability to use it, and the ability to obtain meaningful outcomes. A citizen can possess a smartphone and

still be excluded from public services because authentication is too difficult, the language is opaque, a task requires repeated data entry, the interface does not support magnification or assistive technology, or the user cannot find help after an error. Liu et al. (2025), reviewing 98 studies of vulnerable groups in public services, showed that digital inclusion occurs at the macro, meso, and micro levels and requires both goal-oriented and action-oriented interventions. This perspective is particularly appropriate for public administration because service outcomes depend on the relationship between citizens and institutions, not merely on individual motivation.

Older adults expose the limitations of access-only measures. Ge et al. (2025) identify personal, technological, social, and environmental mechanisms of exclusion in later life. Kim et al. (2023) synthesize evidence on technology anxiety, resistance, fear, and hesitation, while An et al. (2024) show that technology anxiety and self-efficacy are associated with older adults' intention to use digital public services. Pajula et al. (2024) added the concept of "mental access": pressure, trust, prior experiences, and the rapid pace of digitization can shape the willingness and perceived ability to enter a digital service environment. These findings imply that an accessibility assessment must observe not only whether a technically competent user can complete a task, but whether a heterogeneous population can understand, trust, navigate, recover, and obtain the intended result without disproportionate dependence on another person.

Recent design research makes the same point from a technical perspective. Chiriboga-Casanova et al. (2025) identified 25 categories of accessibility problems and more than 100 proposed improvements in the literature on older-adult web use. Idrobo Cruz et al. (2023) focused specifically on access to government information and proposed user-centered recommendations for older adults. WCAG 2.2 provides the current internationally recognized baseline for web accessibility, adding requirements relevant to focus visibility, target size, consistent help, redundant entry, and accessible authentication (World Wide Web Consortium [W3C], 2024). These criteria matter for public services because small touch targets, repeated information requirements, hidden focus, and cognitively demanding authentication can turn minor design inconveniences into administrative barriers.

Technical standards are necessary but insufficient. Local-government research shows that accessibility is also an organizational learning outcome. Frandell and Allgood (2026) found that oversight, government structures, stakeholder influence, and website operational duration are associated with accessibility outcomes. Abdurahman and Kabanda (2024), studying accessible digital government services in South Africa, identified organizational and stakeholder-support structures as key factors and highlighted practices such as accessibility champions, omnichannel provision, in-house guidelines, digital learning, assistive-technology support, and reflection. These studies shift attention from "does the interface comply?" toward "does the organization possess the structures that repeatedly produce accessible services?"

Accessibility as Public Value

A narrow efficiency model would evaluate JSS by service counts, transaction speed, user volume, system uptime, or administrative cost. These measures matter, but they do not show that digital transformation creates public value for citizens with unequal capabilities. Luna et al. (2024) showed that citizens' perceptions of digital services connect individual convenience to social and democratic values. Lee et al. (2024) likewise placed public value at the center of digital-policy design. For accessibility, this means the relevant outcome is not only successful digital completion but successful public-service access under conditions of fairness, dignity, legality, and accountability. Public value is especially useful in an aging context because the state is not simply offering an optional consumer product. Population administration, complaints, local taxes, licensing, health information, and emergency-related services may be linked to statutory rights and obligations. Failure to complete a transaction can therefore create

Journal of Ethnic and Cultural Studies
2026, Vol.13, No. 5, 366-390
http://dx.doi.org/ 10.66815/ejecs/3471
Copyright 2026
ISSN: 2149-1291

material consequences. Morte-Nadal and Esteban-Navarro (2025) found that vulnerable groups encounter barriers in digital public services and recommend simpler interfaces, tailored support, intermediary organizations, performance indicators, and hybrid digital/face-to-face provision. Their finding that not all services should be exclusively online is important for governmental politics: channel strategy is a distributive choice about who bears the cost of digital transition.

A public-value lens also reframes independence. Independent use is desirable because it protects autonomy and privacy, but inclusion does not require that every older person perform every transaction alone. Wale et al. (2025) found that interventions can improve digital skills, self-efficacy, and technology use among diverse older populations, yet intervention effects vary considerably. Assisted digital services can therefore be legitimate components of an inclusive system when they preserve agency, confidentiality, and continuity. The governance objective should be to maximize autonomous access while ensuring that citizens who require help are not penalized, stigmatized, or forced to restart a service journey through a different channel.

Culture, Aging, and Mediated Digital Citizenship

A culturally responsive account of digital inclusion asks who normally helps older adults, which language registers are intelligible and respectful, how community organizations mediate access, and whether assistance preserves agency. Yogyakarta is not culturally homogeneous: migrant students and Chinese-Indonesian communities, among other residents, make a solely Javanese interpretive lens insufficient for all older citizens. Nevertheless, research in DIY shows that Javanese language, mutual assistance, respect, family relations, and harmonious social interaction remain salient in the lives of many older residents (Anaf et al., 2024; Kusumaningrum et al., 2026; Noveria et al., 2025). Culture is therefore treated here as a context that can enable or constrain access, not as a fixed attribute of an ethnic group.

This perspective also sharpens the distinction between independent and supported use. Assistance from children, spouses, neighbors, community cadres, or frontline staff may align with local relational norms and reduce anxiety. However, digital public services often require credentials, identity verification, and personal data. If the system assumes that support is private household work, culturally embedded solidarity can become an unrecognized administrative infrastructure. A rights-sensitive approach must make assistance safe and optional, provide direct routes for older adults who prefer to use it independently, and avoid designing processes that require relatives to disclose credentials.

Conceptual Framework

The revised conceptual framework combines five citizen-facing accessibility dimensions, six governance mechanisms, and one cross-cutting cultural-social dimension. The five accessibility dimensions synthesize process-oriented accessibility scholarship, Web Content Accessibility Guidelines (WCAG) 2.2, and research on older-adult digital exclusion. The six governance mechanisms draw on digital government, public value, local-government transformation, organizational learning, and Indonesian smart-city scholarship. The cultural-social dimension draws on research on Javanese aging and social relations in Yogyakarta and interprets how language, family support, community structures, and intersecting inequalities mediate access.

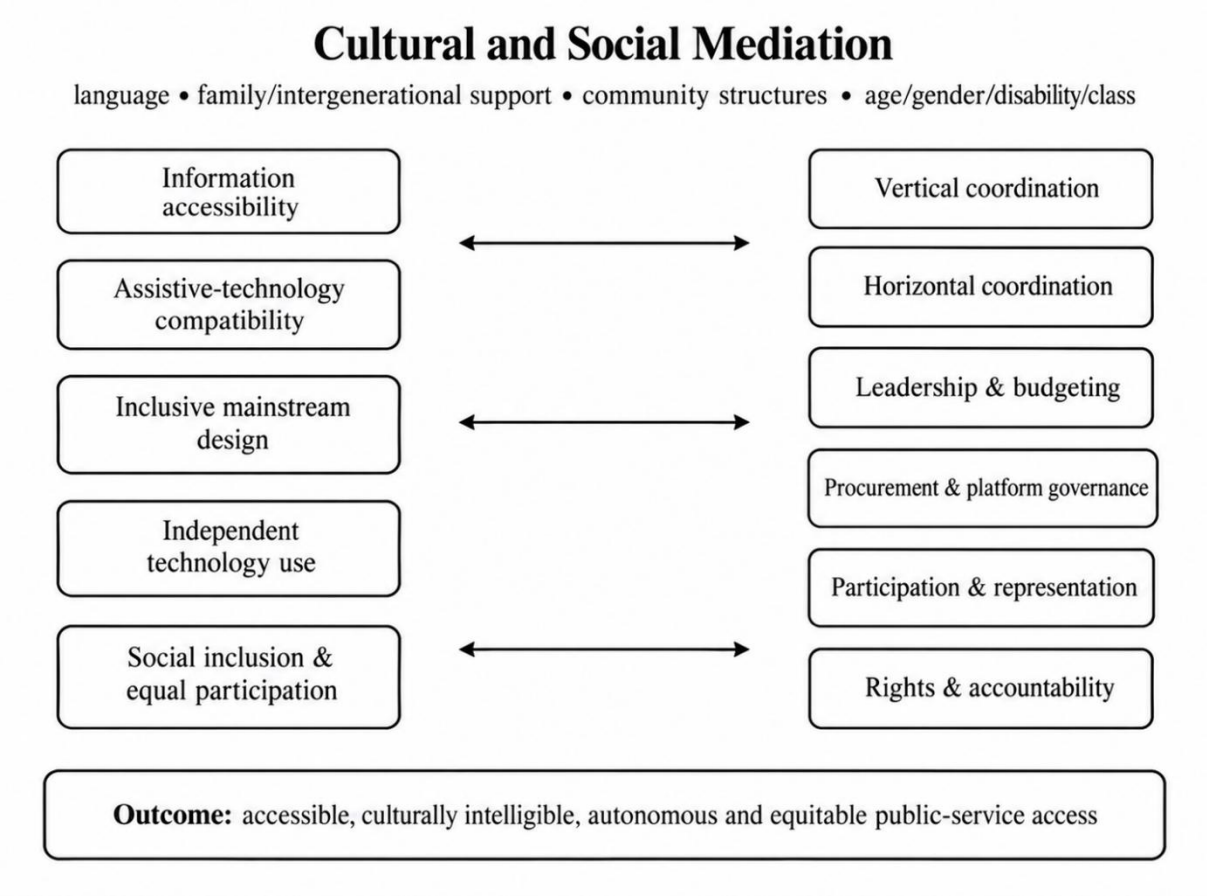
Table 1
Sources and Functions of the Conceptual Framework

Dimension or mechanism	Primary grounding	Conceptual function
Accessibility of information	Lazar et al. (2015); Idrobo Cruz et al. (2023); W3C (2024)	Findable, perceivable, understandable, actionable information
Assistive-technology compatibility	W3C (2024); Chiriboga-Casanova et al. (2025)	Alternative input/output and operating-system accessibility
Inclusive mainstream design	Lazar et al. (2015); Abdurahman & Kabanda (2024)	Accessibility embedded in the ordinary service
Independent technology use	An et al. (2024); Kim et al. (2023); Wale et al. (2025)	Core tasks can be completed without disproportionate dependence
Social inclusion and equal participation	Liu et al. (2025); Pajula et al. (2024)	Equitable access, voice, dignity, and participation
Vertical coordination	Government of Indonesia (2018, 2022b, 2023); Gascó Hernández (2024)	National-regional-city mandates and interoperability
Horizontal bureaucratic coordination	Pribadi et al. (2024)	Ownership, data, workflows, and cross-agency resolution
Leadership and budgeting	van Roekel et al. (2025); Virnandes et al. (2024)	Agenda setting, skills, staffing, resources
Procurement and platform governance	Lazar et al. (2015); Abdurahman & Kabanda (2024)	Standards, vendors, acceptance testing, releases
Participation and representation	Pajula et al. (2024); Paskarina et al. (2026)	Whose knowledge enters design and evaluation
Rights and accountability	Government of Indonesia (2009, 2022a); Luna et al. (2024)	Privacy, complaints, explanations, equal access, hybrid channels
Cultural and social mediation	Anaf et al. (2024); Kusumaningrum et al. (2026); Noveriad et al. (2025)	Language, family/intergenerational support, community structures, intersections

Figure 1 shows the conceptual framework.

Journal of Ethnic and Cultural Studies
2026, Vol.13, No. 5, 366-390
http://dx.doi.org/ 10.66815/ejecs/3471
Copyright 2026
ISSN: 2149-1291

Figure 1
Conceptual Framework for Culturally Responsive Digital Inclusion



Note. Authors' own elaboration based on Lazar et al. (2015), W3C (2024), later-life digital-inclusion research, Indonesian digital-governance research, and Yogyakarta research on culture and aging. Bidirectional arrows indicate that governance arrangements shape citizen-facing accessibility and that citizen experience and participation can generate organizational learning.

Method

Research Design and Case Selection

The study uses a qualitative documentary case-study design. Qualitative inquiry is appropriate because the research questions concern meanings, institutional relationships, and documented mechanisms rather than causal effect estimation. Document analysis systematically reviews and interprets documentary material and is particularly appropriate when policy architecture, official representations, service rules, and published administrative data are central evidence (Bowen, 2009). JSS was selected as a single, information-rich case because it is an integrated municipal gateway, is embedded in Indonesia's SPBE architecture, and operates in a region with the country's highest share of older adults. A single case can be analytically valuable when selected for what it reveals about a phenomenon rather than for statistical representativeness (Flyvbjerg, 2006; Stake, 1995; Yin, 2018).

Document analysis was chosen instead of interviews or a live accessibility audit because the present research questions focus on publicly documented institutional conditions: demographic inequalities, formal rights and responsibilities, platform rules, municipal service integration, complaint channels, and the cultural context established in prior research.

Documents cannot establish how individual older adults actually experience JSS, whether every interface component conforms to WCAG 2.2, or why a particular design decision was made. Those questions require user testing, interviews, technical auditing, or internal process data and are explicitly reserved for future research.

Data Sources and Collection

The case corpus contains 23 official or first-party documents collected or rechecked between 13 September and 24 October 2026. It comprises six national statistical publications/releases, three regional or city statistical publications/releases, nine national legal instruments, and five JSS/municipal sources. Peer-reviewed literature was not treated as case data; it was used to derive the conceptual framework and interpret documented patterns. WCAG 2.2 served as an external accessibility benchmark rather than case evidence. Inclusion criteria were direct relevance to older-adult demographics, JSS service architecture, public-service rights, SPBE governance, data protection, or municipal accountability; an identifiable issuing authority; and a publication or retrieval date. Duplicate news items, undated reposts, and sources that merely repeated another official source without additional evidence were excluded. Literature searching was purposive rather than systematic. Searches were conducted through academic search engines and publisher databases using combinations of older adults, ageing/aging, digital inclusion, digital public services, accessibility, culture, Javanese, Yogyakarta, Indonesia, smart city, public value, government platform, participation, and administrative burden. Priority was given to peer-reviewed work published from 2023 through 2026, supplemented by established methodological and accessibility sources. This literature supports conceptual derivation and comparison; it is not counted as documentary case evidence. See Table 2.

Table 2
Documentary Case Corpus and Collection Log

Document/source group	Issuing body	Date	Use in analysis	Access/check date
BPS, Statistics of Aging Population 2021–2025	BPS	2021–2025	National aging and ICT trends	13 Sep–6 Oct 2026
SUPAS 2025 national release	BPS	5 May 2026	National older-adult share	6 Oct 2026
SUPAS 2025 DIY release	BPS DIY	5 May 2026	DIY aging context	6 Oct 2026
Yogyakarta City Regional Statistics 2025	BPS Yogyakarta City	25 Sep 2025	City demographic context	6 Oct 2026
Law No. 13/1998, Welfare of Older Persons	Government of Indonesia	1998	Older-adult welfare rights	6 Oct 2026
Law No. 25/2009, Public Services	Government of Indonesia	2009	Service, participation, complaints	6 Oct 2026
Presidential Regulation No. 95/2018	Government of Indonesia	2018	SPBE framework	6 Oct 2026

Copyright 2026
ISSN: 2149-1291

Table 2
Continued

Document/source group	Issuing body	Date	Use in analysis	Access/check date
Law No. 27/2022, Personal Data Protection	Government of Indonesia	2022	Privacy and data rights	6 Oct 2026
Presidential Regulation No. 132/2022	Government of Indonesia	2022	National SPBE architecture	6 Oct 2026
Presidential Regulation No. 82/2023	Government of Indonesia	2023	Integrated national digital services	6 Oct 2026
JSS Terms and Conditions, v1.0	City of Yogyakarta	13 Oct 2022	Platform definition, registration, data, complaints	6 Oct 2026
JSS portal/service categories	City of Yogyakarta	current page	Public-facing platform role	6 Oct 2026
Municipal communication on JSS/SPBE	Dinkominfosan Yogyakarta	2026	Institutional purpose and integration	6 Oct 2026
Yogyakarta complaint dataset 2025	Dinkominfosan Yogyakarta	10 Mar 2026 update	UPIK JSS complaint volume/outcomes	6 Oct 2026
Law No. 8/2016, Persons with Disabilities	Government of Indonesia	2016	Accessibility and reasonable accommodation	24 Oct 2026
Law No. 13/2012, Yogyakarta Special Status	Government of Indonesia	2012	Cultural institutional context	24 Oct 2026
Presidential Regulation No. 88/2021, National Strategy for Ageing	Government of Indonesia	2021	Age-friendly governance	24 Oct 2026
Mayor Decision No. 208/2023, JSS super-app	City of Yogyakarta	2023	JSS legal governance and consultations	24 Oct 2026
BPS DIY city mobile-phone statistical table, 2025	BPS DIY	23 May 2026 update	Verifies 92.75% citywide mobile use (age 5+)	24 Oct 2026

Note. BPS = Badan Pusat Statistik (Statistics Indonesia); DIY = Daerah Istimewa Yogyakarta; JSS = Jogja Smart Service; SPBE = Sistem Pemerintahan Berbasis Elektronik. The first row represents five separate annual BPS publications, producing 23 case documents in total. URLs are provided in the reference list where available.

Data Analysis

Analysis combined directed qualitative content analysis and case-study pattern matching (Hsieh & Shannon, 2005; Yin, 2018). The unit of coding was a meaningful documentary segment: a clause, paragraph, table cell, service description, or statistical indicator that addressed one or more framework components. The author conducted coding using a structured codebook. The initial codes were the five accessibility dimensions and six governance mechanisms; a twelfth code, cultural and social mediation, was added in response to the revised journal scope and was grounded in the Yogyakarta literature. Text that did not fit the initial codes was retained in analytic memos and examined for whether it represented a contextual condition, rival explanation, or genuinely new theme rather than being forced into a category. See Table 3.

Table 3
Directed Content-Analysis Codebook

Code	Definition	Inclusion rule	Example evidence
Information accessibility	Content can be found, perceived, understood, acted upon	Include language, instructions, service discovery	JSS service categories/terms
Assistive-technology compatibility	Compatibility with alternative input/output	Include explicit standards or technical accessibility provisions	WCAG benchmark applied to documented service conditions
Inclusive mainstream design	Accessibility within ordinary service pathway	Include integrated/mainstream service requirements	JSS integrated platform definition
Independent use	Ability to complete core tasks without disproportionate dependence	Include authentication, data entry, help, recovery	Personal-data registration requirements
Social inclusion/equal participation	Access, voice, dignity, participation	Include complaints, participation, non-user visibility	UPIK complaint channel
Vertical coordination	Cross-level authority/interoperability	Include national-regional-city rules	SPBE regulations
Horizontal coordination	Cross-agency ownership/workflows	Include integrated city services and hand-offs	JSS one-door structure
Leadership/budgeting	Priorities, staffing, resources	Include formal ownership or resource implications	Municipal SPBE/JSS governance communication
Procurement/platform governance	Vendor, standards, acceptance, release control	Include platform-wide standards and dependencies	Integrated platform as shared infrastructure

Journal of Ethnic and Cultural Studies
2026, Vol.13, No. 5, 366-390
http://dx.doi.org/ 10.66815/ejecs/3471
Copyright 2026
ISSN: 2149-1291

Table 3
Continued

Code	Definition	Inclusion rule	Example evidence
Participation/representation	Whose perspectives enter decisions	Include complaint/user feedback mechanisms	UPIK JSS and Public Services Law
Rights/accountability	Privacy, complaints, explanations, alternatives	Include data rights and redress	PDP law and JSS terms
Cultural/social mediation	Language, family/community support, intersecting social position	Include documented Yogyakarta cultural mechanisms	Javanese language and mutual-assistance literature

Note. Examples identify the type of evidence coded; they are not claims of direct user experience. PDP = Personal Data Protection.

Pattern matching compared expected relationships from the conceptual framework with the documentary record. A proposed institutional mechanism was retained only when (a) a case document established the relevant institutional or service condition and (b) the literature supplied a theoretically plausible link to an accessibility outcome. Rival explanations were considered by asking whether the same evidence could reflect general platform integration, security, administrative complexity, or population inequality rather than age or culture specifically. Where the documentary record could not discriminate among explanations, the wording was limited to risk, condition, or implication rather than a claim that JSS caused a specific user outcome.

Trustworthiness, Document Quality, and Ethics

Trustworthiness was addressed through source hierarchy, triangulation, an explicit codebook, and an evidence matrix. Following Lincoln and Guba (1985) and Nowell et al. (2017), credibility was supported by triangulating statistical, legal, platform, and municipal administrative sources; transferability was supported through detailed description of the case and its boundaries; dependability was strengthened through a documented coding structure and source log; and confirmability was addressed by separating descriptive, institutional, and interpretive claims. The study appraised documentary quality using Scott's (1990) criteria of authenticity, credibility, representativeness, and meaning. The analysis treated official statistics and legal instruments as authoritative within their institutional scope, while treating municipal web pages as evidence of public-facing representation rather than proof of user experience.
One coder conducted the analysis; therefore, no intercoder coefficient is reported. This is acknowledged as a limitation rather than replaced with an artificial reliability statistic. To make single-coder decisions auditable, the revision provides the codebook, corpus log, and source-by-finding matrix. Web sources were recorded with retrieval/check dates because content may change. The study used only publicly available documents and did not recruit human participants or access identifiable personal records, so institutional informed-consent procedures were not applicable. Generative AI assistance used during revision is disclosed near the end of the manuscript; responsibility for verification and final submission remains with the author(s).

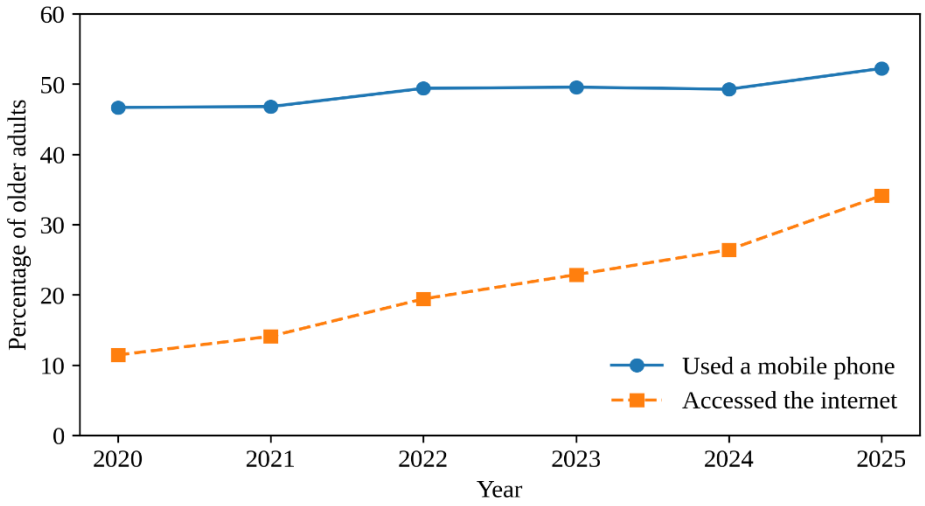
Findings

Digital Access Is Expanding but Remains Unequal

National statistics show substantial growth in later-life connectivity. Internet access among older adults rose from 11.44% in 2020 to 34.13% in 2025, while mobile-phone use rose from 46.68% to 52.23% (BPS, 2021, 2022, 2023, 2024, 2025). The 2025 increase is important, but it still means that roughly two-thirds of older adults were not recorded as internet users. In 2024, internet access also fell sharply across age groups—from 32.35% among those aged 60–69 to 18.56% among those aged 70–79 and 8.49% among those aged 80 or older (BPS, 2024). See Figure 2 and Figure 3.

Figure 2

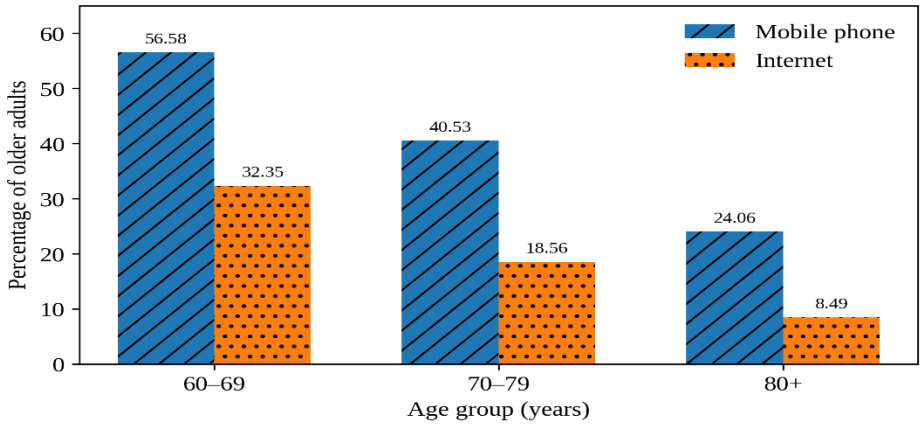
Mobile-Phone Use and Internet Access Among Older Adults in Indonesia, 2020–2025



Note. Values are percentages of older adults. Source: BPS annual Statistics of Aging Population series (2021–2025), based primarily on the National Socio-Economic Survey (Susenas). The 2020 value is reported in the 2021 series; the 2025 internet and mobile-phone values are 34.13% and 52.23%, respectively.

Figure 3

Mobile-Phone Use and Internet Access by Older-Age Group, Indonesia, 2024



Note. Older adults are people aged 60 years and over. Internet access refers to access within the BPS/Susenas reference period reported in Statistics of Aging Population 2024. Source: BPS (2024), Table 3.4.

Journal of Ethnic and Cultural Studies
2026, Vol.13, No. 5, 366-390
http://dx.doi.org/ 10.66815/ejecs/3471
Copyright 2026
ISSN: 2149-1291

The same 2024 publication documents intersecting inequalities: internet access was 10.82% among older adults with disabilities compared with 28.12% among those without disabilities; 11.77% among the bottom 40% of household expenditure compared with 57.24% among the highest expenditure group; and 14.95% in rural areas compared with 35.52% in urban areas (BPS, 2024). These are national rather than JSS-user estimates. They establish that age intersects with disability, economic position, and residence and therefore caution against treating 'older adults' as a single administrative user profile.

The local demographic context underscores the issue's relevance. DIY's older-adult share reached 17.83% in 2025, the highest in Indonesia (BPS DIY, 2026a). The published city-level ICT table for 2025 shows very high mobile-phone use among Yogyakarta City residents aged five and over (92.75%), but it does not provide an age-specific estimate for older adults. This study therefore does not substitute general city connectivity for older-adult connectivity; the absence of a published city-level age-specific ICT estimate is itself an evidence limitation. The 2025 city statistical publication is listed in the reference section (Badan Pusat Statistik Kota Yogyakarta [BPS Kota Yogyakarta], 2025). The citywide 92.75% figure is independently reported in the BPS DIY 2025 municipality-by-sex mobile-phone-use table (BPS DIY, 2026b); it pertains to residents aged five years and above rather than specifically to older adults.

JSS Is an Integrated and Data-Intensive Municipal Gateway

The JSS terms of use define the platform as an integrated City of Yogyakarta service available through mobile applications and a website for online and offline public services. The terms state that users register and provide personal information and documents. They identify data categories, including civil registration, health, education, and other service information (Pemerintah Kota Yogyakarta, 2022). The current portal presents JSS as a virtual city hall and one-door gateway to municipal functions (Dinas Komunikasi Informatika dan Persandian Kota Yogyakarta, n.d.). These documents establish integration and data intensity; they do not establish whether any specific screen is accessible or inaccessible.

The complaint function also provides case evidence of JSS as an accountability interface. Municipal open data report 3,545 complaints submitted through UPIK JSS in 2025, with 92.07% recorded as completed (Dinas Komunikasi Informatika dan Persandian Kota Yogyakarta, 2026b). The dataset does not identify complainants by age and therefore cannot show whether older adults use the channel proportionately. However, it shows that complaint handling is embedded within the platform ecosystem and can be treated as part of accessibility governance rather than an external afterthought.

Cultural and Social Mediation Changes the Meaning of Access

The case documents do not record ethnicity, household assistance, or language preferences of JSS users. Cultural findings must therefore be stated as contextual interpretation rather than direct platform effects. Yogyakarta-based research indicates that Javanese cultural values and language remain important in older adults' social adaptation, including mutual assistance, respect, tolerance, and language use calibrated to social relationships (Noveria et al., 2025). Research on families with older adults in Yogyakarta similarly describes family responsibility and community mutual help as resources during hardship (Anaf et al., 2024), while older adults in Sleman emphasize autonomy, family achievement and relationships, and harmonious social relations in their accounts of aging well (Kusumaningrum et al., 2026).

Placed alongside JSS's registration and personal-data requirements, these studies identify a concrete governance tension. Family and community members can act as valuable intermediaries when an older adult has limited digital confidence or access. However, assistance

with identity-based government services can also expose credentials or private data, create dependence, and obscure the older adult's own preferences. The documentary evidence supports the existence of the institutional conditions—integrated digital service, personal-data registration, and complaint mechanisms—while the cultural literature explains why supported use is plausible and why it should be designed rather than left informal.

Language is similarly important. JSS's public-facing terms are in Indonesian and include legal and bureaucratic vocabulary. Noveria et al. (2025) show that differentiated Javanese language remains socially meaningful among older adults in DIY. The present study did not test comprehension and cannot conclude that JSS language is a barrier. It identifies an empirical question an age-inclusive service should test: whether older residents can understand service labels, eligibility rules, privacy notices, error messages, and help information without relying on a family interpreter or bureaucratically experienced intermediary.

Governance Mechanisms Shape Whether Accessibility Is Durable

National SPBE rules create a vertical governance environment that favors integration and interoperability (Government of Indonesia, 2018, 2022b, 2023). JSS, however, remains a municipal interface linking services with different substantive owners. This means that accessibility responsibility can cross organizational boundaries. The Public Services Law sets expectations for participation and complaint handling, and the Personal Data Protection Law establishes a rights framework for authentication, assistance, and personal information (Government of Indonesia, 2009, 2022a).

At the municipal level, Mayor of Yogyakarta Decision No. 208/2023 formally designates JSS as an electronic-government service super-app, recognizes applications submitted through it as valid, and requires participating offices to provide service procedures and consultation staff (Pemerintah Kota Yogyakarta, 2023). This offers direct institutional evidence of the service-owner and assisted-support responsibilities relevant to RQ2, without establishing whether older residents currently receive accessible assistance.

Horizontal coordination is visible in the platform's integrated service model. A one-door interface can reduce fragmentation for citizens, but only if terminology, help, authentication, and cross-agency hand-offs are coordinated. The documentary corpus does not contain an internal JSS accessibility standard, procurement specification, or release-testing protocol. Consequently, the study cannot report whether WCAG 2.2 is currently embedded in procurement or quality assurance. The absence of such a document in the public corpus is reported as an evidence gap, not as proof that no internal practice exists.

Government-as-platform research emphasizes ecosystem coordination and organizational capabilities (Danneels & Viaene, 2025), while public-sector digital-infrastructure reviews identify implementation and interoperability as recurring organizational challenges (Lusi et al., 2025). The municipal description of JSS/SPBE likewise situates the platform within local smart-governance implementation (Dinas Komunikasi Informatika dan Persandian Kota Yogyakarta, 2026a).

The evidence on participation is mixed in a useful way. JSS includes a large complaint channel, showing that post-use feedback is institutionally available. However, complaint data capture people who entered the system and chose to report a problem; they cannot reveal older non-users, people who abandon a task, or residents who rely entirely on relatives. The combination of high regional aging and lower national later-life internet use makes those invisible populations analytically important.

Table 4 summarizes the study’s findings and the principal evidence.

Journal of Ethnic and Cultural Studies
2026, Vol.13, No. 5, 366-390
http://dx.doi.org/ 10.66815/ejecs/3471
Copyright 2026
ISSN: 2149-1291

Table 4
Summary of Findings and Evidence

Research question/theme	Documented finding	Principal evidence
RQ1: access conditions	Internet access rose to 34.13% in 2025; steep age and socioeconomic gradients remain; DIY older-adult share 17.83%.	BPS 2024–2026; BPS DIY 2026a
RQ1: JSS conditions	JSS is an integrated mobile/web municipal platform; registration involves personal data; UPIK JSS received 3,545 complaints in 2025.	JSS terms/portal; municipal open data
RQ2: cultural mediation	Yogyakarta literature documents Javanese language, mutual assistance, family relations, and social harmony as salient to older-adult life.	Noveria et al. 2025; Anaf et al. 2024; Kusumaningrum et al. 2026
RQ2: governance	SPBE integration, public-service participation, complaint handling, and data-protection duties create multi-level accessibility responsibilities.	Government of Indonesia 2009, 2018, 2022a, 2022b, 2023
RQ2: evidence gaps	No age-specific JSS usage, older-user testing, WCAG audit, internal procurement protocol, or city-level older-adult ICT estimate was located.	Corpus-wide negative evidence; reported as limitation, not absence of practice

Note. Only claims supported directly by the documentary corpus are labeled documented findings. Cultural mechanisms are contextual findings from peer-reviewed Yogyakarta research and are used for interpretation, not as direct evidence of JSS user behavior.

Discussion

RQ1: Digital Opportunity Has Expanded, but Older-Adult Access Is Still Stratified

The first research question asked what official statistics and JSS documents reveal about access conditions. The updated 2025 series change the scale of opportunity: internet access among older adults reached 34.13%, up sharply from 26.42% in 2024. This confirms that later-life digital participation is not static. At the same time, the 2024 age gradient and inequalities by disability, expenditure, and residence support Ge et al.'s (2025) account of digital exclusion as multi-mechanism and heterogeneous. They also align with An et al. (2024) and Kim et al. (2023), who show that psychological and capability-related barriers can coexist with nominal technology access. This case extends that literature by situating these inequalities within an integrated municipal gateway rather than treating them as general technology-adoption outcomes.

The local aging context also matters. DIY's 17.83% older-adult share means that age inclusion is not peripheral to municipal service design. Yet the documentary record lacks city-level age-specific ICT use and age-disaggregated JSS use. This absence complicates performance claims. A platform can report high overall uptake while remaining unable to identify which older residents never enter the service ecosystem. Liu et al. (2025) described

digital inclusion as a multi-level public-service problem; the JSS case shows why operationalizing that principle locally requires population denominators and non-user evidence.

RQ2: Culture Can Enable Access and Also Conceal Administrative Burden

The second research question examined how culture, accessibility, and governance interact. The Yogyakarta literature adds a dimension missing from the original manuscript. Noveria et al. (2025) showed that Javanese values and language remain active resources in older adults' social adaptation; Anaf et al. (2024) identified family and community reciprocity in household resilience, and Kusumaningrum et al. (2026) placed autonomy and harmonious family and social relations within older adults' own accounts of successful aging. These findings do not prove how JSS is used. However, they make a specific hypothesis plausible: digital government in Yogyakarta is often experienced within relational networks rather than by isolated individuals.

That interpretation both confirms and extends previous digital-inclusion research. Studies of older adults often treat social support as a resource that can reduce anxiety and support learning. The present analysis adds a public-administration qualification: when a service requires identity verification and personal data, social support must be governed. Informal assistance can broaden access, but if a relative routinely enters credentials or interprets legal notices, autonomy and confidentiality may weaken. Research on digital data security in public institutions identifies password practices, device misuse, and weak data storage among the main user-related threats (Özdoğru & Aslanlı, 2023), which makes credential sharing a governance issue rather than a private family arrangement. The relevant design objective is therefore not independence at all costs; it is supported autonomy, in which the older adult can choose assistance without surrendering control of identity, consent, or the service outcome.

This cultural reading also complicates a purely technical interpretation of accessibility. WCAG 2.2 can test target size, focus, help, redundant entry, and accessible authentication, but it does not determine whether service language is culturally and administratively intelligible, whether a complaint process feels socially safe to use, or whether community organizations can help without becoming unofficial gatekeepers. Chiriboga-Casanova et al. (2025) emphasized the diversity of older-adult accessibility problems; the JSS case extends this by showing why cultural-social mediation should sit alongside technical and organizational dimensions in a municipal conceptual framework.

RQ3: Accessibility Is a Public-Value and Governance Capability

The third research question asked what implications follow. The findings support Gascó Hernández's (2024) argument that digital transformation is simultaneously technological and organizational. They also complement Pribadi et al. (2024), who connect Indonesian digital governance with skills, leadership, regulation, transparency, and accountability. In JSS, the documented combination of platform integration, personal-data use, complaint handling, and multi-level SPBE rules means that interface designers alone cannot be assigned responsibility for accessibility. It is a cross-cutting capability involving service owners, legal and data-protection functions, procurement, support channels, and the units responsible for complaints and performance data. The legal framework also makes age- and disability-inclusive support a public obligation: the 1998 older-person welfare law, the 2016 disability law, and the 2021 national aging strategy collectively support accessible service pathways, reasonable accommodation, and cross-sector age-friendly arrangements (Government of Indonesia, 1998, 2016, 2021).

The case also provides a concrete response to Paskarina et al. (2026) and Muallidin and Supratikta (2026), who cautioned that smart-city systems can create technocratic forms of

Journal of Ethnic and Cultural Studies
2026, Vol.13, No. 5, 366-390
http://dx.doi.org/ 10.66815/ejecs/3471
Copyright 2026
ISSN: 2149-1291

participation. JSS has an active complaint channel, but complaints are necessarily generated by visible users. Older adults without internet access, those who depend on family, or those who abandon a task can remain absent from platform data. Representation therefore requires deliberate recruitment of non-users and assisted users, not only analysis of digital feedback. Comparative smart-city scholarship also highlights how institutional configurations affect urban inclusion (Liando et al., 2026), and Indonesian evidence connects digital transformation to citizen trust and participation (Nurlinah et al., 2025). These studies reinforce the need to evaluate participation beyond registered platform users.

Compared with the earlier JSS study by Pramudita and Syafiqurrohman (2024), which emphasizes agile and digital governance and the virtual-city-hall model, this study foregrounds who may be excluded from that model and how culture changes the unit of analysis from an individual user to a user embedded in family and community relations. The contribution is not a technical verdict on JSS conformance. It is a culturally situated governance framework that clarifies what evidence and institutional arrangements are needed before an integrated platform can be called inclusive.

A further implication concerns the relationship between universal design and cultural responsiveness. Universal accessibility standards matter precisely because they set a common minimum that does not depend on assumptions about a user's age, ethnicity, language, or family situation. Cultural responsiveness adds a second question: whether the standardized service is meaningful in the social setting in which it is used. In Yogyakarta, this means testing not only whether information can be technically perceived but whether older residents with different education, language practices, and levels of bureaucratic familiarity can understand instructions, privacy notices, and help routes. It also means avoiding the opposite error of building a separate 'elderly' pathway that stereotypes older people or reduces their choices. A more defensible approach is an accessible mainstream service with optional, well-governed linguistic, human, and community support.

The documentary evidence also suggests evaluating accountability across channels. The Public Services Law and JSS complaint infrastructure establish formal routes for feedback. However, an older adult who cannot register, authenticate, or identify the correct service may never reach the point at which a digital complaint can be filed. This is why complaint resolution rates cannot by themselves demonstrate inclusion. A culturally and age-responsive accountability system needs ways to hear from people who use telephone, counter, family-assisted, or community-assisted pathways, and it should preserve the older person's own account rather than automatically treating the intermediary as the service user. This extends Pajula et al.'s (2024) concern with organizational responsibility for older-adult participation by locating responsibility not only in design workshops but in routine service governance.

Implications

Theoretical Implications

Theoretically, the study adds cultural and social mediation to the relationship between accessibility and digital-government governance. Digital inclusion is not simply a property of an individual, interface, or organization. In culturally relational settings, language, expectations of family support, community mediation, and norms governing help-seeking and respect also shape it. The concept of supported autonomy captures this interaction: assistance can be inclusion-enhancing when it preserves agency, privacy, and direct entitlement to public services.

Policy Implications

For the City of Yogyakarta, accessibility should be formalized as a municipal service-quality responsibility across JSS and connected services. Priority journeys should have named end-to-end owners, accessibility requirements should enter procurement and release testing, and complaint and performance data should be supplemented with age-inclusive research. Nationally, SPBE integration policy should explicitly recognize accessibility, assisted-channel continuity, and non-digital equivalence as qualities of interoperable public services rather than exceptions to digital transformation. Mayor of Yogyakarta Decision No. 208/2023 offers a practical governance entry point: consultation staff and service procedures required of participating offices could be developed into consistently documented, privacy-preserving assisted pathways for older residents (Pemerintah Kota Yogyakarta, 2023). Service designers should test plain Indonesian, explain unavoidable bureaucratic terminology, and examine whether optional Javanese-language or community-mediated support improves comprehension without stereotyping users. Frontline staff need procedures for privacy-safe assistance that do not require them or relatives to take control of a citizen's password. Families and community organizations can be recognized as supportive partners, but services should not assume they are available. Older adults—including non-users, people with disabilities, those aged 80 and over, and residents with low digital confidence—should be recruited for service-journey testing and feedback. See Table 5.

Table 5
Priority Implications for Inclusive JSS Governance

Domain	Action	Indicative evidence or metric
Accessibility ownership	Adopt a cross-JSS standard and assign accountable owners	Named owner; remediation log; priority journeys tested
Culturally intelligible information	Test plain language, terminology, help, and language preferences with diverse older adults	Comprehension testing; help discovery; language findings
Supported autonomy	Design privacy-safe assisted completion and channel switching	Assisted completion; credential-sharing incidents; continuity
Procurement/release governance	Specify WCAG 2.2 and older-adult usability in contracts and acceptance tests	Contract clauses; regression tests; defect closure
Representation	Include non-users, assisted users, disability groups, families, community cadres, and frontline staff	Participant diversity; documented design changes
Equity monitoring	Interpret platform metrics against local population composition	Age-disaggregated completions where lawful; abandonment; non-user research

Note. Recommendations are limited to areas linked to the documented findings and evidence gaps. WCAG = Web Content Accessibility Guidelines.

Journal of Ethnic and Cultural Studies
2026, Vol.13, No. 5, 366-390
http://dx.doi.org/ 10.66815/ejecs/3471
Copyright 2026
ISSN: 2149-1291

Limitations and Future Research

This study has five principal limitations. First, it relies on documents and therefore cannot reproduce older adults' own voices or establish how they experience specific JSS journeys. Second, the study conducted no live WCAG audit or task-based usability test; therefore, it makes no claim about the platform's current technical conformance. Third, the study uses national statistics on age-specific digital inequalities because it could not find a city-level estimate of older-adult ICT use; it reports general city connectivity only as context, not as a substitute. Fourth, the single-case design supports analytical rather than statistical generalization. Fifth, web content is changeable, and public documents may not expose internal procurement, budgeting, design, or release-management practices. The analysis also used one coder and therefore cannot report intercoder reliability.

Future research should combine this documentary baseline with interviews and task-based observation involving older residents across the 60–69, 70–79, and 80+ groups; purposively include disability, gender, socioeconomic, language, and living-arrangement diversity; conduct a structured WCAG 2.2 and mobile-accessibility audit of selected high-impact JSS journeys; interview municipal service owners, frontline staff, and vendors about procurement and cross-agency responsibility; and examine how families, neighborhood organizations, Posyandu Lansia, and other community structures mediate digital public-service access. Longitudinal work should also test whether accessibility improvements reduce reliance on informal credential sharing while increasing successful independent or privacy-safe assisted completion.

Conclusion

RQ1 showed that later-life digital opportunity is expanding rapidly but remains unequal, while Yogyakarta's exceptionally old population makes age inclusion a central municipal issue. RQ2 showed that JSS is documented as an integrated, data-intensive service and complaint platform operating within multi-level SPBE, public-service, and data-protection rules. When interpreted alongside Yogyakarta research on Javanese language, mutual assistance, family relations, and social harmony, digital access is best understood as culturally and institutionally mediated rather than solely individual or technical. RQ3 therefore points to a public-value approach centered on supported autonomy, culturally intelligible information, accountable service ownership, privacy-safe assistance, and representation of non-users as well as users. The study contributes a culturally situated conceptual framework for examining age-inclusive digital government without overstating what the documentary evidence can establish. The JSS case does not show how every older resident experience the platform, nor does it provide a technical accessibility verdict. It does show why an integrated municipal service should be evaluated through the relationships among population inequality, culture, service rules, governance, and rights. For an aging Yogyakarta, a smart public service is inclusive only when integration expands effective access without making family help, digital confidence, or disclosure of personal information hidden conditions of citizenship.

Declarations

Author Contributions

Yudi Rusfiana conceptualized the study, designed the methodology and conceptual framework, collected and verified the case documents, conducted the directed content analysis and pattern matching, and wrote the original draft. Dewi Kurniasih helped develop the

framework's cultural-social dimension, validated the coding and interpretation of the findings, and reviewed and edited the manuscript. Both authors have read and approved the final manuscript.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Ethics Statement

This study is based exclusively on publicly available documents, including official statistics, laws and regulations, the Jogja Smart Service portal and terms of use, municipal communications, and published demographic reports. It did not involve human participants, interviews, or access to personal or identifiable data. Therefore, ethical approval and informed consent were not required.

Data Availability Statement

All 23 case documents analyzed in this study are publicly available from the official sources cited in the article. A list of the documents, with their sources and access dates, is available from the corresponding author upon reasonable request.

Acknowledgments

The authors thank Institut Pemerintahan Dalam Negeri (IPDN) for institutional support and the anonymous reviewers for constructive comments.

Conflicts of Interest

The authors declare no conflicts of interest

Publisher’s note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim its manufacturer may make that, is not guaranteed or endorsed by the publisher.

References

Abdurahman, S., & Kabanda, S. (2024). Factors influencing the design and implementation of accessible e-Government services in South Africa. *The Electronic Journal of Information Systems in Developing Countries*, *90*(4), Article e12317. https://doi.org/10.1002/isd2.12317

An, J., Zhu, X., Wan, K., Xiang, Z., Shi, Z., & Huang, W. (2024). Older adults' self-perception, technology anxiety, and intention to use digital public services. *BMC Public Health*, *24*, Article 3533. https://doi.org/10.1186/s12889-024-21088-2

Anaf, A., Purwaningsih, S. S., Noveria, M., Harfina, D., Raharjana, D. T., & Utami, D. W. (2024). Resilience of families with the elderly amid the COVID-19 pandemic: Lesson

Copyright 2026
ISSN: 2149-1291

learned from two tourism villages in Yogyakarta, Indonesia. *Cogent Social Sciences*, *10*(1), Article 2326693. https://doi.org/10.1080/23311886.2024.2326693

Badan Pusat Statistik. (2021). *Statistik penduduk lanjut usia 2021* [Statistics of aging population 2021]. https://www.bps.go.id/id/publication/2021/12/21/c3fd9f27372f6ddcf7462006/statistik-penduduk-lanjut-usia-2021.html

Badan Pusat Statistik. (2022). *Statistik penduduk lanjut usia 2022* [Statistics of aging population 2022]. https://www.bps.go.id/id/publication/2022/12/27/3752f1d1d9b41aa69be4c65c/statistik-penduduk-lanjut-usia-2022.html

Badan Pusat Statistik. (2023). *Statistik penduduk lanjut usia 2023* [Statistics of aging population 2023]. https://www.bps.go.id/en/publication/2023/12/29/5d308763ac29278dd5860fad/statistics-of-.html

Badan Pusat Statistik. (2024). *Statistik penduduk lanjut usia 2024* [Statistics of aging population 2024]. https://www.bps.go.id/id/publication/2024/12/31/a00d4477490caaf0716b711d/statistik-penduduk-lanjut-usia-2024.html

Badan Pusat Statistik. (2025). *Statistik penduduk lanjut usia 2025* [Statistics of aging population 2025]. https://www.bps.go.id/id/publication/2025/12/12/868d335b088dcddc3ddee052/statistik-penduduk-lanjut-usia-2025.html

Badan Pusat Statistik. (2026, May 5). *SUPAS 2025: The total fertility rate (TFR) is 2.13, the infant mortality rate (IMR) is 14.12, and the percentage of older persons has reached 11.97 percent* [Press release]. https://www.bps.go.id/en/pressrelease/2026/05/05/2645/

Badan Pusat Statistik Kota Yogyakarta. (2025). *Statistik daerah Kota Yogyakarta 2025* [Yogyakarta City regional statistics 2025]. https://jogjakota.bps.go.id/id/publication/2025/09/25/4a054477fde7dc600e6eb902/statistik-daerah-kota-yogyakarta-tahun-2025.html

Badan Pusat Statistik Provinsi Daerah Istimewa Yogyakarta. (2026a, May 5). *Hasil Survei Penduduk Antar Sensus (SUPAS 2025) D.I. Yogyakarta* [Results of the 2025 Intercensal Population Survey of the Special Region of Yogyakarta] [Press release]. https://yogyakarta.bps.go.id/id/pressrelease/2026/05/05/1762/hasil-survei-penduduk-antar-sensus--supas-2025--d-i--yogyakarta.html

Badan Pusat Statistik Provinsi Daerah Istimewa Yogyakarta. (2026b). *Persentase penduduk berumur 5 tahun ke atas yang menggunakan telepon seluler (HP)/nirkabel untuk keperluan komunikasi dalam 3 bulan terakhir menurut kabupaten/kota dan jenis kelamin, 2025* [Percentage of the population aged 5 years and over who used a mobile/wireless phone for communication in the last 3 months by regency/municipality and sex, 2025] [Statistical table]. https://yogyakarta.bps.go.id/id/statistics-table/2/NTY2IzI%3D/persentase-penduduk-berumur-5-tahun-ke-atas-yang-menggunakan-telepon-seluler--hp--nirkabel-untuk-keperluan-komunikasi-dalam-3-bulan-terakhir-menurut-kabupaten-kota-dan-jenis-kelamin.html

Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, *9*(2), 27–40. https://doi.org/10.3316/QRJ0902027

Buyannemekh, B., Luna, D. E., Picazo-Vela, S., & Luna-Reyes, L. F. (2026). Citizens' perspectives on administrative burden in digital government services. *Government Information Quarterly*, *43*(3), Article 102165. https://doi.org/10.1016/j.giq.2026.102165

Casalini, F., & Zavolokina, L. (2025). From private platforms to public value: An exploratory analysis of privately-owned public service digital platforms in Italy. *Government Information Quarterly*, *42*(4), Article 102090. https://doi.org/10.1016/j.giq.2025.102090

Chen, J., & Wang, P. (2026). Administrative burdens in digital services: Insights from citizen experiences. *Public Performance & Management Review*, *49*(6), 1519–1545. https://doi.org/10.1080/15309576.2026.2644998

Chiriboga-Casanova, W., Medina-Medina, N., & Paderewski-Rodríguez, P. (2025). Accessible web design for older adults: Challenges and solutions. *ACM Transactions on Accessible Computing*, *18*(3), Article 14. https://doi.org/10.1145/3763243

Danneels, L., & Viaene, S. (2025). Organizational capabilities for government as a platform: The case of engaging the labour market ecosystem. *Information Polity*, *30*(3), 180–200. https://doi.org/10.1177/15701255251349949

Dinas Komunikasi Informatika dan Persandian Kota Yogyakarta. (n.d.). *Jogja Smart Service* (Version 7.0). Pemerintah Kota Yogyakarta. Retrieved October 24, 2026, from https://jss.jogjakota.go.id/

Dinas Komunikasi Informatika dan Persandian Kota Yogyakarta. (2026a, June 2). *IPDN pelajari implementasi smart governance dan SPBE Pemkot Yogyakarta* [IPDN studies the implementation of smart governance and electronic-based government systems (SPBE) in the Yogyakarta City Government]. Pemerintah Kota Yogyakarta. https://dinkominfosan.jogjakota.go.id/detail/index/48953

Dinas Komunikasi Informatika dan Persandian Kota Yogyakarta. (2026b, March 10). *Rincian aduan Pemerintah Kota Yogyakarta berdasarkan jumlah pengaduan masuk tahun 2025* [Details of City of Yogyakarta complaints by number received in 2025] [Data set]. Open Data Kota Yogyakarta. Retrieved October 6, 2026, from https://dataset.jogjakota.go.id/dataset/dataset2025-11

Fernandes, D. R., dos Santos, B. N., Guimarães, C. S., Ferreira, E. B., Margatho, A. S., dos Reis, P. E. D., Pittet, D., & Silveira, R. C. C. P. (2024). Educational technologies for teaching hand hygiene: Systematic review. *PLOS ONE*, *19*(1), Article e0294725. https://doi.org/10.1371/journal.pone.0294725

Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative Inquiry*, *12*(2), 219–245. https://doi.org/10.1177/1077800405284363

Frandell, A., & Allgood, M. (2026). Breaking barriers: Evaluating accessibility in local government online platforms for individuals with disabilities. *Government Information Quarterly*, *43*(1), Article 102111. https://doi.org/10.1016/j.giq.2026.102111

Gascó Hernández, M. (2024). Reflections on three decades of digital transformation in local governments. *Local Government Studies*, *50*(6), 1028–1040. https://doi.org/10.1080/03003930.2024.2410830

Ge, H., Li, J., Hu, H., Feng, T., & Wu, X. (2025). Digital exclusion in older adults: A scoping review. *International Journal of Nursing Studies*, *168*, Article 105082. https://doi.org/10.1016/j.ijnurstu.2025.105082

Government of Indonesia. (1998). *Law No. 13 of 1998 concerning the Welfare of Older Persons*. https://peraturan.bpk.go.id/Details/45509/uu-no-13-tahun-1998

Government of Indonesia. (2009). *Law No. 25 of 2009 concerning Public Services*. https://peraturan.bpk.go.id/Details/38748/uu-no-25-tahun-2009

Government of Indonesia. (2012). *Law No. 13 of 2012 concerning the Special Status of Yogyakarta*. https://peraturan.bpk.go.id/Details/39064/uu-no-13-tahun-2012

Government of Indonesia. (2016). *Law No. 8 of 2016 concerning Persons with Disabilities*. https://peraturan.bpk.go.id/Details/37251/uu-no-8-tahun-2016

Government of Indonesia. (2018). *Presidential Regulation No. 95 of 2018 concerning the Electronic-Based Government System (SPBE)*. https://peraturan.bpk.go.id/Details/96913/perpres-no-95-tahun-2018.html

Government of Indonesia. (2021). *Presidential Regulation No. 88 of 2021 concerning the National Strategy for Ageing*. https://peraturan.bpk.go.id/Details/178090/perpres-no-88-tahun-2021

Copyright 2026
ISSN: 2149-1291

Government of Indonesia. (2022a). *Law No. 27 of 2022 concerning Personal Data Protection*. https://peraturan.bpk.go.id/Details/229798/uu-no-27-tahun-2022

Government of Indonesia. (2022b). *Presidential Regulation No. 132 of 2022 concerning the National SPBE Architecture*. https://peraturan.bpk.go.id/Details/233483/perpres-no-132-tahun-2022

Government of Indonesia. (2023). *Presidential Regulation No. 82 of 2023 concerning Acceleration of Digital Transformation and Integration of National Digital Services*. https://peraturan.bpk.go.id/Details/273981/perpres-no-82-tahun-2023

Hegemann, M., & Ritz, A. (2026). Administrative burden in digital service provision: A systematic literature review and research agenda. *Perspectives on Public Management and Governance*, *9*(3), 171–190. https://doi.org/10.1093/ppmgov/gvag004

Hsieh, H.-F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, *15*(9), 1277–1288. https://doi.org/10.1177/1049732305276687

Idrobo Cruz, C. S., Martínez Flor, E. U., & Vidal Caicedo, M. I. (2023). User-centered web accessibility: Recommendations for ensuring access to government information for older adults. *Ingeniería Solidaria*, *19*(3), 1–22. https://doi.org/10.16925/2357-6014.2023.03.02

Kim, H.-N., Freddolino, P. P., & Greenhow, C. (2023). Older adults' technology anxiety as a barrier to digital inclusion: A scoping review. *Educational Gerontology*, *49*(12), 1021–1038. https://doi.org/10.1080/03601277.2023.2202080

Kusumaningrum, F. M., Dewi, F. S. T., Pangastuti, H. S., & Yeung, P. (2026). Successful aging in Indonesia: The journey toward expectations and serenity. *Activities, Adaptation & Aging*, *50*(2), 191–212. https://doi.org/10.1080/01924788.2025.2483589

Laksmi, P. W., Dinakrisma, A. A., Abdiel, T., Susanto, A. P., Pujitresnani, A., Lukmana, A. A. I., & Yusuf, P. A. (2024). Digital divide: Knowledge, attitudes and practices toward mobile phone and apps use among Indonesian older adults residing in a megapolitan city. *Gerontechnology*, *23*(1), 1–13. https://doi.org/10.4017/GT.2024.23.1.845.03

Lazar, J., Goldstein, D. F., & Taylor, A. (2015). *Ensuring digital accessibility through process and policy*. Morgan Kaufmann.

Lee, J.-Y., Kim, B., & Yoon, S.-H. (2024). A conceptual digital policy framework via mixed-methods approach: Navigating public value for value-driven digital transformation. *Government Information Quarterly*, *41*(3), Article 101961. https://doi.org/10.1016/j.giq.2024.101961

Leong, Q. Y., Lee, V. V., Ng, W. Y., Vijayakumar, S., Lau, N. Y., Mauritzon, I., Blasiak, A., & Ho, D. (2024). Older adults' perspectives and experiences with digital health in Singapore: Qualitative study. *JMIR Human Factors*, *11*, Article e58641. https://doi.org/10.2196/58641

Liando, D. M., Ganaie, N. A., & Yuslaini, N. (2026). Smart City 2.0 governance policy model: Institutional configurations and the politics of urban inclusion in India, Singapore, and Indonesia. *Frontiers in Political Science*, *8*, Article 1730870. https://doi.org/10.3389/fpos.2026.1730870

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE Publications.

Liu, H., Zhou, Q., & Liang, S. (2025). Digital inclusion in public services for vulnerable groups: A systematic review for research themes and goal-action framework from the lens of public service ecosystem theory. *Government Information Quarterly*, *42*(2), Article 102019. https://doi.org/10.1016/j.giq.2025.102019

Luna, D. E., Picazo-Vela, S., Buyannemekh, B., & Luna-Reyes, L. F. (2024). Creating public value through digital service delivery from a citizen's perspective. *Government*

Information Quarterly, *41*(2), Article 101928. https://doi.org/10.1016/j.giq.2024.101928

Lusi, J., Lorenz, B., & Pappel, I. (2025). Innovation or reinvention? A systematic and bibliometric review of public sector digital infrastructure. *Journal of Open Innovation: Technology, Market, and Complexity*, *11*(3), Article 100593. https://doi.org/10.1016/j.joitmc.2025.100593

Mansoor, M. (2021). An interaction effect of perceived government response on COVID-19 and government agency's use of ICT in building trust among citizens of Pakistan. *Transforming Government: People, Process and Policy*, *15*(4), 693–707. https://doi.org/10.1108/TG-01-2021-0002

Morte-Nadal, T., & Esteban-Navarro, M. Á. (2025). Recommendations for digital inclusion in the use of European digital public services. *Humanities and Social Sciences Communications*, *12*, Article 273. https://doi.org/10.1057/s41599-025-04576-7

Muallidin, I., & Supratikta, H. (2026). The technopolitical paradox: Navigating algorithmic legitimacy, participation facades, and technocratic inclusion in post-Reformasi Indonesia. *Policy & Internet*, *18*(2), Article e70044. https://doi.org/10.1002/poi3.70044

Noveria, M., Listyaningsih, U., Pitoyo, A. J., & Anaf, A. (2025). Adaptation of retired older adult return migrants in their place of origin in the Yogyakarta Special Region, Indonesia. *PLOS One*, *20*(8), Article e0328038. https://doi.org/10.1371/journal.pone.0328038

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods, 16*(1), 1–13. https://doi.org/10.1177/1609406917733847

Nurlinah, Ansar, M. C., & Chowdhury, K. (2025). Impact of government digital transformation on citizen trust and participation: Evidence from Gowa Regency, Indonesia. *Frontiers in Human Dynamics*, *7*, Article 1700582. https://doi.org/10.3389/fhumd.2025.1700582

Özdoğru, M., & Aslanlı, M. (2023). Digital data security in school management: Threats and precautions. *Anatolian Journal of Educational Leadership and Instruction*, *11*(1), 48–66. https://doi.org/10.67361/ajeli/225774

Pajula, L., Hänninen, R., Korpela, V., & Taipale, S. (2024). Exploring stakeholder perspectives on user involvement in designing digital public services for older adults. *First Monday*, *29*(9). https://doi.org/10.5210/fm.v29i9.13330

Paskarina, C., Mustofa, M. U., Hermawati, R., Purnomo, D., Wicaksono, F., & Ramdani, R. R. (2026). Digital governmentality in local governance: Policy rationalities in designing smart city. *Frontiers in Political Science*, *8*, Article 1777136. https://doi.org/10.3389/fpos.2026.1777136

Pemerintah Kota Yogyakarta. (2022, October 13). *Syarat dan ketentuan Jogja Smart Service (JSS)* [Jogja Smart Service (JSS) terms and conditions] (Version 1.0). https://help.jogjakota.go.id/jss/syarat-ketentuan.html

Pemerintah Kota Yogyakarta. (2023). *Keputusan Walikota Yogyakarta Nomor 208 Tahun 2023 tentang Penerapan Jogja Smart Service sebagai Superapp Layanan Pemerintah Daerah Berbasis Elektronik* [Yogyakarta Mayor's Decree No. 208 of 2023 on the implementation of Jogja Smart Service as the electronic-based local government services superapp]. https://jdih.jogjakota.go.id/home/produk_hukum/detail/3531

Pramudita, R., & Syafiqurrohman, A. (2024). Implementation of Jogja Smart City: Virtual City Hall in realizing agile and digital governance. *Agile Governance and Innovation Measurement Journal*, *1*(2), 59–70. https://doi.org/10.18196/agimjournal.v1i2.1

Pribadi, U., Iqbal, M., Ibrahim, M. A., Juhari, & Ahdarrijal, Y. (2024). Nexus of public organization, transparency, and accountability in Indonesia's digital governance. *Journal of Public Affairs*, *24*(3), Article e2940. https://doi.org/10.1002/pa.2940

Scott, J. (1990). *A matter of record: Documentary sources in social research*. Polity Press.

Copyright 2026
ISSN: 2149-1291

Sharmin, S. (2026). Law and politics of AI-enabled central bank digital currency governance: A critical integrative review of commercial bank deposit stability, digital rights, surveillance risk, democratic accountability, and global justice in emerging economies. *Journal of Interdisciplinary Research in Artificial Intelligence and Society*, *2*(1), Article 5. https://doi.org/10.20897/jirais/19193

Stake, R. E. (1995). *The art of case study research*. SAGE Publications.

van Roekel, H., Branderhorst, M., Tummers, L., & Meijer, A. (2025). Digital transformation leadership: A public value-centered measurement scale. *Government Information Quarterly*, *42*(4), Article 102091. https://doi.org/10.1016/j.giq.2025.102091

Wale, A., Everitt, J., Ayres, T., Okolie, C., Morgan, H. E., Shaw, H., Cooper, A., Edwards, A., & Lewis, R. (2025). Effectiveness of interventions for addressing digital exclusion in older adults in the social care domain: Rapid review. *JMIR Aging*, *8*, Article e70377. https://doi.org/10.2196/70377

World Wide Web Consortium. (2024, December 12). *Web Content Accessibility Guidelines (WCAG) 2.2* [W3C Recommendation]. https://www.w3.org/TR/WCAG22/

Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). SAGE Publications.

Notes on Contributors

Yudi Rusfiana is an accomplished academic and civil servant currently serving as Head of the Research Institute at the Institut Pemerintahan Dalam Negeri (IPDN), Indonesia. Holding the academic rank of Associate Professor (Lektor Kepala), he has an extensive background in government and defense education. His career includes significant roles at the Indonesia Defense University (UNHAN), where he served as a lecturer and held various administrative positions. Rusfiana earned his Doctorate in Social and Political Sciences from Universitas Padjadjaran. His expertise encompasses public policy, political science, regional and village governance, and defense policy. He has led numerous research projects and task forces on regional autonomy, public service satisfaction, border security, and national defense awareness. A prolific scholar, he has authored several books and publications on politics, bureaucracy, and public policy.

Dewi Kurniasih is a professor and currently the Dean of the Faculty of Social and Political Sciences at Indonesian Computer University (UNIKOM), Bandung, Indonesia. She is an experienced academic teaching diverse subjects including Sociology and Anthropology, Political Sociology, Comparative Government Systems, Government Leadership, Government Science Methodology, Government Ethics, Regional Government, Central and Regional Financial Relations, E-Government, Government Information Systems, Social Systems, Citizenship, Pancasila, Qualitative Research Methods, and Entrepreneurship encompassing Business Ethics, Financial Management, Business Negotiation, and E-Commerce. Her research interests integrate governance, digital government, public ethics, and community empowerment. She actively contributes to national and international academic forums, mentors' young researchers, and promotes innovative governance for sustainable rural welfare in Indonesia with integrity, dedication, and visionary leadership.

ORCID

Yudi Rusfiana, https://orcid.org/0000-0003-3997-1528
Dewi Kurniasih, https://orcid.org/0000-0002-4921-2093