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Assisted E-Government: Mobile Licensing Buses and the Limits of Self-Service Driving Licence Renewal in Indonesia

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ABSTRACT

Indonesia has digitized driving licence renewal through a national self-service application, SIM Nasional Presisi (SINAR). In practice the application is often disrupted, and local police units continue to rely on face-to-face service through mobile licensing buses and service counters. This study examines how e-government in licence renewal is implemented through these mobile services, which obstacles arise, and how they are addressed. We conducted a qualitative case study of the driving licence office of the Bandung metropolitan police command between October 2023 and June 2024, combining interviews with a licensing officer, an information technology operator, and two applicants, observation at mobile bus locations, and documents. Data were analyzed interactively with Indrajit's three elements of successful e-government: support, capacity, and value. The self-service channel did not work reliably because of access disruptions. The office compensated with two service counters and mobile buses that changed location daily, where operators entered applicants' data into a dedicated police application linked to population registry data. Support appeared in the regulatory basis and in outreach through social media, radio, and the police website; capacity in certified operators and on-site handling of network problems, although financial data were unavailable; and value in access close to home, with service taking about 40 to 45 minutes including queuing. We interpret mobile services as a hybrid channel in which digitalization continues in the back office while officers assist citizens at the front office, and we propose reading Indrajit's elements separately at the levels of the national platform and the local implementer.

Keywords: Assisted E-Government; Channel Choice; Design-Reality Gap; Street-Level Bureaucracy; Driving Licence

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INTRODUCTION

Digitalization of public services has become a core agenda of government in Indonesia. Presidential Regulation No. 95 of 2018 on Electronic-Based Government Systems provides the legal basis for digital services across agencies, and Indonesia's progress is visible in the United Nations E-Government Survey, in which its ranking rose from 77th in 2022 to 64th of 193 countries in 2024, with an E-Government Development Index of 0.7991 (United Nations Department of Economic and Social Affairs [UN DESA], 2024). Studies of Indonesian digital transformation nonetheless note that progress has been

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uneven across sectors and regions and that implementation often lags behind policy ambitions (Aminah & Saksono, 2021). Digital services are expected to contribute to effective and inclusive institutions under Sustainable Development Goal 16 (United Nations, 2015), which makes the question of who can actually use them a matter of sustainable governance as well as of administrative efficiency.

The driving licence (Surat Izin Mengemudi, SIM) is one of the administrative services that citizens use most often. Law No. 22 of 2009 on Road Traffic and Transport states that a licence is valid for five years and may be renewed (Article 85(2)), so every licence holder must return to the police at regular intervals. National Police Regulation No. 5 of 2021 on the Issuance and Marking of Driving Licences confirms that a licence may be renewed before it expires, while a licence that has expired must be applied for as a new one (Article 4).

To simplify renewal, the Chief of the Indonesian National Police launched the SINAR application on 13 April 2021, allowing car (SIM A) and motorcycle (SIM C) licences to be renewed online (Detik Oto, 2021a). Studies of the application have since reported servers that could not be reached at times of high demand, failed photograph uploads, and deliveries that exceeded the service standard (Ishlahah & Oktariyanda, 2022; Ma'rifah & Purbaningrum, 2025; Yustiari & Rorrong, 2025). Assessments of the application in other cities reach similar conclusions: the service is valued for its convenience, but its reliability and the burden it places on users remain problems (Mustikasari & Reviandani, 2024).

Face-to-face service has not disappeared in the meantime. Police Regulation No. 5 of 2021 explicitly recognizes mobile licensing offices (Satpas Keliling), defined as dynamic offices using motor vehicles or other means of transport (Article 1(11)), and auxiliary offices outside police premises, both of which may renew licences (Article 30). In many cities, mobile licensing buses and counters in shopping centres remain the main renewal channel. Indonesian studies of mobile licensing services generally treat them as service innovations or examine their accountability (Ediyanto et al., 2021; Nugraha et al., 2025), while studies of SINAR evaluate the application on its own. Although both channels have been examined, less attention has been paid to how they relate to each other, and in particular to how face-to-face service interacts with the same digital system that the self-service application uses.

The international e-government literature offers several lenses for this relationship. Heeks (2003) argued that most e-government projects in developing countries fail, partly or wholly, because of gaps between design assumptions and conditions on the ground. Research on channel choice shows that citizens choose and use service channels according to their personal characteristics, the task, and their digital skills (Ebbers et al., 2016; Pieterson & Ebbers, 2008). Research on street-level bureaucracy shows that technology can narrow the discretion of frontline officials but can also give them new resources (Bovens & Zouridis, 2002; Buffat, 2015). These lenses are seldom used in Indonesian studies of e-government implementation, which mostly rely on Indrajit's (2006) normative framework of three elements of success.

This study examines how e-government in licence renewal is implemented through mobile services at the driving licence office of a metropolitan police command in West Java. It asks three questions: (1) how is e-government in mobile licence renewal implemented; (2) what obstacles does it face; and (3) how are these obstacles addressed? The article contributes in two ways. It shows that mobile services can be read as a hybrid channel, a digital service assisted by officers, rather than as a retreat from e-government. It also argues that Indrajit's framework should distinguish the level of the national platform from that of the local implementer. The article continues with the literature review, methods, results and discussion, and conclusions.

LITERATURE REVIEW

E-Government and the Design-Reality Gap

E-government can be understood as the use of information technology by government agencies to provide services and information to citizens, businesses, and other agencies. Layne and Lee (2001) distinguished four stages of development: cataloguing, transaction, vertical integration, and horizontal integration. In this model, renewal through the application is a transaction, while the link between licence data and population registry data is a form of horizontal integration. Development is not necessarily linear, however. Janowski (2015) argued that digital government evolves towards greater complexity and contextualization, and Mergel et al. (2019) distinguished the digitization of existing processes from the transformation of services and of relations with citizens.

Heeks (2003) explained e-government failure through the concept of a design-reality gap. Systems are designed with assumptions about infrastructure, users' abilities, and organizational capacity, and the larger the distance between those assumptions and reality, the greater the risk of failure. The gap does not always end in abandonment of the system. Frequently, implementers on the ground adjust

their work so that the system can still be used. This possibility, in which local practice absorbs the shortcomings of central design, is the focus of the present study.

Channel Choice, the Digital Divide, and Assisted Service

Governments usually offer several service channels at once, such as counters, telephone, and applications. Pieterson and Ebbers (2008) showed that multichannel strategies must take account of citizens' characteristics and of the type of task, and the review by Madsen and Kræmmergaard (2015) showed that channel choice depends on many factors besides the availability of digital channels. The digital divide is also multidimensional, covering access, skills, and use, and Ebbers et al. (2016) showed that digital skills affect not only which channel citizens choose but how they use it. In Indonesia, Sabani et al. (2023) found that ICT literacy was the weakest of the factors affecting e-government adoption, which suggests that trust and system quality also need to be considered.

When digital services become mandatory or the default channel, some citizens need help. Schou and Pors (2019) showed that staff at citizen service centres assist citizens excluded by digital-by-default services, and Madsen et al. (2022) showed that self-service shifts part of the administrative work to citizens, who become "accidental caseworkers". In developing countries, common service centres that connect citizens to e-government through operators have become an important form of assisted access, although they face problems of capacity and sustainability (Sharma et al., 2021). The literature thus identifies assisted access as a recurring response to the limits of self-service, but it has mostly been studied in welfare and general administration rather than in police services.

Street-Level Bureaucrats and Technology

Lipsky (2010) described street-level bureaucrats as officials who deal directly with citizens and adapt their work to limited resources. Bovens and Zouridis (2002) argued that information technology shifts discretion from frontline officials to system designers, transforming street-level bureaucracies into system-level bureaucracies. Buffat (2015) balanced this view by distinguishing a curtailment thesis, in which technology reduces discretion, from an enablement thesis, in which technology gives officials and citizens new resources. The two theses lead to different expectations for a case in which a self-service system is unreliable. Under curtailment, officials would have little role. Under enablement, they might become the link through which the system reaches citizens.

Online and Mobile Licensing in Indonesian Studies

Indonesian research on licence renewal has developed along two largely separate lines. The first evaluates SINAR. Ishlahah and Oktariyanda (2022) examined strategies to improve licence services through SINAR at a district police office in East Java, Ma'rifah and Purbaningrum (2025) assessed the effectiveness of the application at the Jakarta regional police licensing office, and Yustiari and Rorrong (2025) evaluated it from a digital governance perspective. Mustikasari and Reviandani (2024) described the transformation of the service at a licensing office in Surabaya. These studies broadly agree that the application saves time and travel for those who can use it, while reporting recurring problems with server access, document uploads, and delivery times.

The second line examines mobile licensing services. Ediyanto et al. (2021) analysed the accountability of mobile licence services in Central Java and found that coverage and schedules were not always consistent. Nugraha et al. (2025) treated the mobile licence programme as a public service innovation and highlighted its role in bringing services closer to residents, alongside limits in vehicles and staff. Neither line asks how the two channels relate. Studies of SINAR treat face-to-face service as the past that the application replaces, and studies of mobile services treat buses as a stand-alone innovation. Yet both channels feed the same national database, and in many cities they operate side by side. This study takes that coexistence as its starting point.

Three Elements of Successful E-Government

Studies of e-government implementation in Indonesia often use the framework of Indrajit (2006), which identifies three elements of success. *Support* covers the political will of leaders, agreement on an e-government framework, allocation of resources, supporting infrastructure and superstructure such as regulation and institutions, and outreach. *Capacity* covers financial resources, information technology infrastructure, and competent human resources. *Value* refers to the benefits experienced by government as provider and by citizens as service users. The framework has been applied to local agencies, personnel applications, and performance accountability systems (Fahik et al., 2024; Rahayu et al., 2025).

These studies generally find that infrastructure is relatively available, while human resources, implementing regulations, and understanding of benefits remain weak.

The framework has a limitation. It treats e-government as one system in one organization, whereas many Indonesian digital services, including SINAR, are developed nationally and implemented locally. Support, capacity, and value can then differ between the owner of the platform and the implementer on the ground. The public value of e-government is also not limited to efficiency but includes service quality, transparency, and trust (Twizeyimana & Andersson, 2019). We use Indrajit's framework as the main analytical tool, in line with the research design, and read it together with the literature on the design-reality gap, channel choice, and street-level bureaucracy.

MATERIALS AND METHODS

Research Design and Case

We used a qualitative approach with a descriptive case study design. The case is mobile licence renewal at the driving licence office (Satuan Penyelenggara Administrasi SIM, Satpas) of the Bandung metropolitan police command (Polrestabes Bandung), West Java Province. The case was selected because the office ran two channels at once, the national SINAR application and face-to-face service through mobile buses and counters, so that the relationship between the two could be observed. Bandung was among the 54 areas offering online renewal by September 2021 (Detik Oto, 2021b), so both channels had existed side by side for some time when the study began. Fieldwork took place from October 2023 to June 2024.

The case differs from studies that examine the self-service application in isolation. Our unit of analysis is the assisted channel and its connection to the same back-office system, rather than citizens' adoption of the application.

Informants and Data Collection

Data were collected through semi-structured interviews, observation, and documents. The interview guide contained twelve questions on the reasons for launching mobile buses, operational facilities, service requirements, improvement efforts, outreach channels, citizens' responses, daily service capacity, infrastructure, operator competence, costs, application of regulations, and the benefits of the service. Informants were selected purposively for their involvement in and knowledge of the service: a representative officer of the licensing office (I1), an information technology operator (I2), and two citizens renewing their licences (I3 and I4). The main interview with I1 took place on 31 January 2024. Observation was carried out at mobile bus locations, and documents included regulations, official police information, and news reports. Interviews were held in Indonesian, and the excerpts below were translated by the authors with spelling edited only where necessary.

Data Analysis and Trustworthiness

Data were analyzed interactively through data condensation, data display, and conclusion drawing (Miles et al., 2014). Analytical categories followed Indrajit's (2006) three elements, with the sub-indicators described in the literature review. During condensation, interview notes and transcripts were coded by element and sub-indicator. During display, the coded material was arranged in a matrix that placed each sub-indicator against the officer's account, the citizens' accounts, observation, and documents, so that agreement and gaps between sources were visible. Sub-indicators for which no source provided information, such as financial resources, were recorded as gaps rather than filled by inference. Conclusions were drawn by comparing the pattern across elements and by relating it to the literature on the design-reality gap, channel choice, and street-level bureaucracy. Trustworthiness was checked through source triangulation, comparing officers' accounts with those of citizens, and method triangulation, comparing interviews with observation and documents (Lincoln & Guba, 1985).

Research Ethics

Informants took part voluntarily after being told the purpose of the study, and their identities are replaced by codes. Data were used only for the purposes of this research.

RESULTS AND DISCUSSION

The results first describe the two renewal channels and then the findings under the three elements, followed by obstacles and measures. Table 2 summarizes the findings by element. The

discussion that follows interprets them through the design-reality gap, assisted service, and street-level bureaucracy.

Two Renewal Channels

Licence renewal at the study site took place through two channels. The first was the SINAR application, available to citizens throughout Indonesia. According to the officer, this service "often experiences disruptions". The authors' preliminary observation also recorded that several citizens who tried the application experienced disruptions when many users accessed it at the same time. The second channel was face-to-face service outside the licensing office: two counters, one in a shopping mall and one in the city's public service mall, and mobile licensing buses. At the time of the study, the officer referred to eleven bus locations that changed daily. News reports in 2025 confirmed that two buses were still operating in rotation at locations such as shopping centres and markets, with registration from 09.00 to 12.00 on Mondays to Saturdays (Putra, 2025).

The two channels were not entirely separate. The officer explained:

> *"To optimize licence renewal services, Polrestabes set up two renewal counters and eleven mobile bus locations that differ every day. The mobile service uses a dedicated Korlantas application that is already connected to the police identification system and to the population registry, so the data of citizens renewing their licence are stored automatically in that application." (I1)*

The mobile service thus still used the Korlantas digital system. The difference lay in who interacted with the system. With SINAR, citizens entered their own data. In the mobile service, operators entered citizens' data, which were stored in the same system and linked to the population registry. Fig. 1

summarizes this relationship, and Table 1 compares the two channels on the features that emerged from the data.

Table 1. Comparison of the two renewal channels at the study site

Feature	Self-service channel (SINAR)	Assisted channel (buses and counters)
Who enters the data	Citizen	Operator
Where the service takes place	Anywhere with a device and connection	Rotating bus locations and two fixed counters
Link to back-office data	Korlantas system	Same Korlantas system, linked to police identification and population data
Main problem reported	Frequent access disruptions	Network disruption at some locations; queues
How problems are handled	Outside the local office's control	On site, by technicians or by moving the bus
Time and effort for citizens	No travel, but repeated attempts when disrupted	Travel to a nearby location; about 40 to 45 minutes including queuing

Source: research data, 2023–2024.

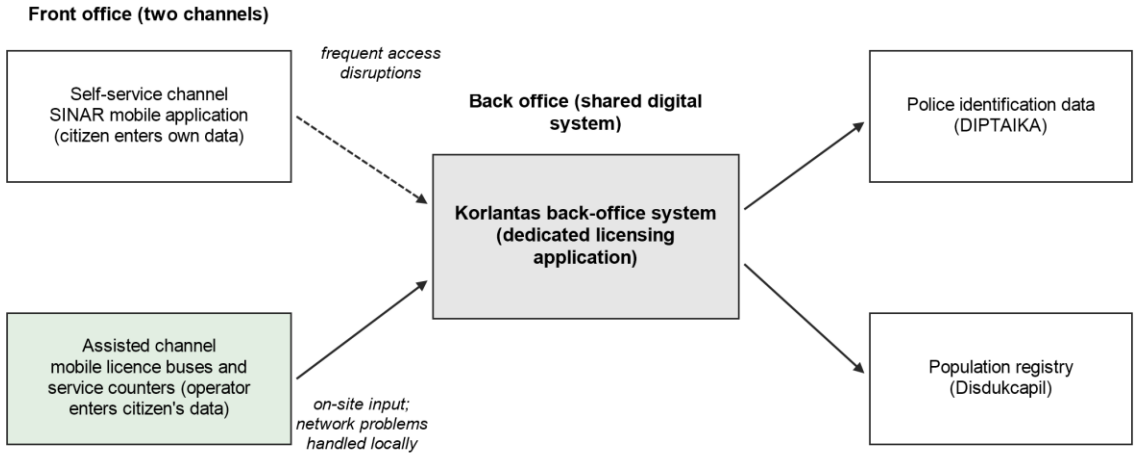

Fig. 1 Two licence renewal channels and the shared Korlantas digital system (authors' elaboration from interviews and documents)

Table 2. Summary of findings by e-government element

Element	Sub-indicator	Main finding	Data source
Support	Framework agreement and leadership will	Mobile service and counters set up to optimize renewal when SINAR is disrupted	Interview I1
	Resource allocation	Experienced, certified operators assigned to the mobile service	Interview I1
	Infrastructure and regulation	Service based on Law 22/2009, police regulations, and SOPs; mobile service only for renewal before expiry	Interview I1; documents
	Outreach	Schedules and locations announced through Facebook, Instagram, Twitter, radio, and website	Interview I1
Capacity	IT infrastructure	Buses equipped with computers, air conditioning, and photography; network problems handled with technicians or by moving the bus	Interviews I1, I3; observation
	Financial resources	No detailed data; the officer described the cost only as "considerable"	Interview I1
	Human resources	Operators described as ready and certified	Interview I1
Value	For the provider	Direct input into a system linked to population data	Interview I1
	For citizens	Service close to home, about 40 to 45 minutes including queuing; request for a new counter in the east of the city	Interview I3; observation

Source: research data, 2023–2024.

Support

Support for e-government in licence renewal was visible mainly at the level of the local implementer. When the national application did not work reliably, the licensing office did not wait for central repairs but opened another channel that still used the digital system. Resource support took the form of dedicated operators:

> *"The Bandung Polrestabes licensing office has prepared experienced and certified operators who are ready to be placed in the mobile service. When entering the data of citizens renewing their licence, operators use e-government, a dedicated application from Korlantas. So data entry is done online and stored automatically, and it is already connected to the police identification system and the population registry." (I1)*

On regulation, the officer stressed that the mobile service renewed only car, motorcycle, and disability-adapted vehicle licences (SIM A, C, and D) before expiry, and that officers worked according to SOPs based on traffic regulations. This is consistent with Police Regulation No. 5 of 2021, which allows mobile offices to issue renewals for several licence classes, including A, C, and D (Article 30(7)). Outreach was carried out through social media accounts, radio, and the police website, and covered not only bus schedules but also driving regulations and the fees applicable:

> *"Outreach does not focus only on the mobile bus service but also on the various laws on driving and the fees charged to the public. Outreach on the mobile service is on Facebook, Instagram, Twitter, and radio stations in Bandung." (I1)*

The officer also said that the service was well received by the local government and the public, to the point that the licensing office was sometimes invited to open a mobile service at government or

foundation events. Support at the level of the national platform, that is, repairing the SINAR application, lay outside the control of the local office.

Capacity

Officers and citizens considered the information technology infrastructure adequate. A citizen who renewed a licence at a mobile bus said:

> *"In my view the mobile bus service certainly helps people renew their licence with Polrestabes Bandung, especially with facilities such as computers, air conditioning, and photography in the bus. It's just that renewal takes about 40 to 45 minutes because of the queue." (I3)*

The technical problem that arose in the field was network disruption. The officer explained that the connection was sometimes blocked by buildings or weather and that such disruptions were handled by coordinating with technicians and Korlantas or by moving the bus until the network returned. This response shows that implementer capacity included the ability to adapt quickly on site, not only the availability of equipment.

The officer rated human resource capacity as good, describing operators as "experienced and certified". Financial capacity, by contrast, could not be assessed. The officer said only that the service required "considerable" funding, without details of the budget or its source.

Value

For the provider, the main value of the mobile service was data entry that went directly into a system linked to population data, making the service more effective and efficient. For citizens, the value was proximity. They could go to the bus location nearest to their home on a given day without travelling to the licensing office. Citizens' accounts suggest that problems with SINAR did not prevent renewal, because the mobile service offered adequate facilities. This value was not evenly distributed, however. A citizen living in the east of the city proposed opening a permanent counter near Ujungberung, because a fixed location was seen as easier to reach than buses that changed location.

Obstacles and Measures

The main obstacle lay in the self-service channel, the SINAR application, which did not work reliably because of frequent disruptions. The second was network disruption at mobile service locations. The third was queuing, because each bus had limited capacity and citizens waited about 40 to 45 minutes. The measures taken were to provide a face-to-face channel that remained connected to the digital system, to announce schedules and locations regularly, to handle network problems directly on site, and to advise citizens to come early to reduce waiting time.

The Design-Reality Gap in the Self-Service Channel

The findings suggest that the obstacles to e-government in licence renewal lay mainly in the design of the national self-service channel rather than in the readiness of the local implementer. SINAR was designed on the assumption that citizens have the devices, connectivity, and skills to complete the whole process alone, including uploading documents, taking online health and psychological tests, and paying. When these assumptions do not hold, the application cannot be relied on. The same pattern has been reported elsewhere, from application errors and failed photograph uploads to late delivery of licences (Ishlahah & Oktariyanda, 2022; Mustikasari & Reviandani, 2024; Yustiari & Rorrong, 2025). In Heeks's (2003) terms, this is a design-reality gap: a distance between the assumptions of system designers and the conditions of users.

The gap did not lead to e-government being abandoned. The back-office digital system continued to work and to provide value, especially the link between licence data and population data. What did not work reliably was the self-service interface at the front office. The finding is consistent with the distinction drawn by Mergel et al. (2019) between digitizing processes and transforming services, and with Janowski's (2015) argument that digital government develops through adaptation to context. It also mirrors the stage logic of Layne and Lee (2001): horizontal integration was achieved in the back office even though the transactional interface that citizens see remained fragile.

Mobile Services as Assisted E-Government

Mobile services in this case are best understood as a hybrid channel, a digital service assisted by officers. In this channel, operators take over administrative work that the self-service channel leaves to citizens. Madsen et al. (2022) showed that self-service turns citizens into "accidental caseworkers" who carry administrative burdens. The mobile service reverses that shift, because officers enter the data, take the photograph, and ensure that the data are stored. The function resembles that of staff at citizen service

centres who help citizens use digital systems (Schou & Pors, 2019) and that of common service centres in developing countries that connect citizens to e-government through operators (Sharma et al., 2021).

From the perspective of street-level bureaucracy, the case points in the opposite direction to the thesis of Bovens and Zouridis (2002). Technology did not fully replace frontline officials. When the self-service system was unreliable, officials again became the link between citizens and the system. The case fits Buffat's (2015) enablement thesis better. The dedicated Korlantas application gave officers a tool to serve citizens faster and with linked data, while officers gave the system the ability to reach citizens who did not succeed with, or did not choose, the application. Adjusting to network disruptions, for example by moving the bus, also reflects the adaptive practices of street-level bureaucrats working under resource constraints (Lipsky, 2010).

The case also shows that channel choice is not entirely a free choice by citizens. It is shaped by the reliability of the channels available. The channel choice literature emphasizes the characteristics of citizens and tasks (Madsen & Kræmmergaard, 2015; Pieterson & Ebbers, 2008), but in this case the reliability of the application appeared to be an equally decisive factor. The finding of Sabani et al. (2023) that ICT literacy is not the strongest factor in Indonesian e-government adoption supports this reading: citizens do not always leave digital channels because they lack skills, but also because the channels cannot be relied on.

Value for Whom: Proximity, Waiting, and Uneven Coverage

The value that citizens attributed to the mobile service was concrete. They could renew close to home, in a bus equipped with computers and a photography station, and finish in under an hour. This value differs in kind from the value promised by the self-service application. SINAR promises to remove travel altogether, while the bus service reduces travel without removing it and replaces the uncertainty of a failing application with the certainty of a queue. For many citizens, a predictable 40 to 45 minutes may be preferable to an online process that may need several attempts. Channel choice in this case therefore involved a trade-off between convenience in principle and reliability in practice, a trade-off that the channel choice literature has described mainly in terms of citizens' skills and preferences (Ebbers et al., 2016).

The value was nevertheless distributed unevenly across the city. Because buses rotated among fixed locations, citizens living far from those locations faced longer journeys, and a citizen from the east of the city asked for a permanent counter there. Assisted service therefore reproduces, in a different form, the access inequalities that self-service was meant to overcome. Where the self-service channel excludes those without reliable devices or skills, the assisted channel disadvantages those who live far from the bus route or cannot attend during registration hours. A complete picture of the public value of licence renewal (Twizeyimana & Andersson, 2019) would require data on who uses each channel and where they live, which this study could not obtain.

The distribution of administrative burden across the two channels is also worth noting. In the self-service channel, the learning and compliance costs of uploading documents, completing online tests, and recovering from errors fall on citizens (Madsen et al., 2022). In the assisted channel, these costs move to operators, while citizens bear travel and waiting costs instead. The office's choice to keep the assisted channel running can thus be read as a decision about who should carry the burden of a digital system that does not yet work as designed. That decision was taken locally and informally, without being reflected in national policy on the application.

The Limits of the Hybrid Solution

The hybrid solution has limits. Capacity is constrained. With two buses changing location, citizens must adjust to schedules and wait in queues, and parts of the city feel underserved. Studies of mobile licensing services elsewhere report similar problems, such as uneven coverage, inconsistent schedules, limited vehicles, and limited staff (Ediyanto et al., 2021; Nugraha et al., 2025). Information on financial resources was not transparent, so the sustainability of the service is difficult to judge. Most importantly, a local solution does not fix the cause of the problem at platform level. As long as the national application remains unreliable, the service load rests on face-to-face channels with limited capacity.

These findings suggest that Indrajit's (2006) framework should be read at two levels. At the level of the national platform, support and capacity concern repairs to the application, server capacity, and simplification of self-service procedures, which are in the hands of Korlantas. At the level of the local implementer, the same elements concern operators, vehicles, schedules, and outreach, which are in the hands of the licensing office. Earlier studies using the framework generally assessed a single organization (Fahik et al., 2024; Rahayu et al., 2025). The present case shows that a single-level assessment can mislead. A local implementer may be judged ready and beneficial while the national digital channel at the core of the policy is not working reliably. Reading the elements at two levels also clarifies where public value is created and where it is lost (Twizeyimana & Andersson, 2019): value is produced locally by

officers who compensate for the platform, but this compensation depends on resources that the study could not observe.

Implications

For Korlantas, the findings underline the need to improve the reliability of SINAR and to simplify self-service procedures, because face-to-face channels cannot absorb all renewal demand. For local licensing offices, the findings point to the value of extending hybrid services, for example with permanent counters in underserved parts of the city, and of publishing service performance data, such as the number of applicants and service times, so that effectiveness can be assessed. For researchers, the findings suggest that studies of e-government should map all service channels and the relationships between them rather than assessing a single application or service unit. For national policy on digital government, the case suggests that the success of a service should not be measured only by the uptake of its application. A service in which a large share of transactions still passes through operators may be working well for citizens, but its costs and its dependence on local initiative remain invisible if only application downloads and online submissions are counted. Reporting on SINAR and similar platforms could include renewals completed through assisted channels that use the same back office, so that the contribution of local offices is recognized and resourced. For the broader agenda of sustainable digital transformation, the case suggests that a mature e-government system keeps an assisted route open for those whom self-service does not reach, rather than treating face-to-face service as a temporary fallback.

CONCLUSION

Implementation of e-government in licence renewal in the case studied did not work reliably in the self-service channel, because the SINAR application was frequently disrupted. The licensing office compensated with mobile buses and counters that still used the Korlantas digital system linked to population data. Support appeared in the regulatory basis, the assignment of operators, and outreach through several channels. Capacity appeared in bus facilities and officers' ability to handle network problems, although financial data were unavailable. Citizens experienced value as service that was close and relatively quick, although its reach was uneven.

Conceptually, mobile services function as a hybrid channel that partly closes the design-reality gap of the self-service channel through the assistance of street-level officials. Repairs to the national application and the extension of hybrid services need to proceed together, and Indrajit's elements of e-government success are best assessed separately at the level of the platform and the level of the implementer.

SUGGESTION FOR FUTURE RESEARCH

The study relied on four informants, with the analysis resting mainly on one officer and one citizen, so the diversity of user experience and the operators' perspective were not explored in depth. Future research should include more operators and citizens at several bus locations, including citizens who first tried the application and then turned to the mobile service, to establish why they switched channels.

The study did not obtain quantitative data on the number of applicants, daily bus capacity, average service time, or the frequency of SINAR disruptions at the site, nor budget data. Research combining interviews with service records would allow the share of renewals handled by each channel to be estimated and the cost of assisted service to be compared with that of self-service. Assessments of SINAR in this study came from informants, preliminary observation, and the literature rather than from system testing, so collaboration with the platform owner would be valuable. Finally, because Indrajit's framework is normative and was not designed to explain relations between channels, the two-level reading proposed here should be tested in other services that are developed nationally and delivered locally, such as civil registration or vehicle tax.

CO-AUTHOR CONTRIBUTION

The authors declare no conflict of interest in this article. All authors contributed to the conception and design of the study, the analysis and interpretation of the data, and the writing and revision of the manuscript, and all authors approved the final version.

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