



## Holistic Digital Service Transformation of Motor Vehicle Tax as a Strategy to Enhance Compliance and Regional Original Revenue Realization: A Case Study

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### Abstract

The implementation of digital Motor Vehicle Tax (PKB) services in South Sulawesi faces significant challenges in low adoption rates despite the availability of technological infrastructure. This phenomenon indicates systemic barriers in the diffusion of innovation, including institutional resistance within the bureaucracy and socio-geographic as well as digital literacy obstacles among the public. This study aims to analyze adoption dynamics and identify critical barriers in the diffusion of digital PKB service innovation to formulate a holistic implementation strategy. This research employs a qualitative approach with an explorative case study method. Data were gathered through operational document analysis, in-depth interviews with key stakeholders (Bapenda, Ditlantas Polri, Jasa Raharja), and Focus Group Discussions (FGD) with diverse taxpayer groups. Findings show that relative advantage is the strongest predictor of adoption, where digital services can reduce the rigidity of 17 types of manual operational procedures that are rigid and labor-intensive. However, diffusion is hindered by organizational inertia, a lack of digital transformational leadership, and gaps in internet understanding among the heterogeneous society. The success of digital PKB transformation depends not only on technical sophistication but also on the organization's ability to build a collective digital culture and align innovation with the socio-psychological realities of taxpayers.

### Introduction

The transformation of public services into a holistic digital ecosystem depends not only on sophisticated technical design but is also largely determined by how innovations penetrate bureaucratic structures and are adopted by the public (Tate et al., 2018; Prachumrasee et al., 2025; Bawa, 2026). In the context of Motor Vehicle Tax (PKB) in South Sulawesi, the availability of digital applications does not guarantee widespread tax compliance. This phenomenon suggests systemic barriers to innovation diffusion. As explained by (Dunleavy et al., 2006), the Digital Era Governance (DEG) era demands the reintegration of government functions to address fragmented institutional complexity. This reintegration is a prerequisite for digital innovation to go beyond platform launches and fundamentally transform the way bureaucracy operates (Dunleavy et al., 2006; Sacchi & Scarano, 2025; Ross et al., 2024).

An in-depth analysis of these adoption dynamics shows that technology often exists as an instrument isolated from the social and cultural dynamics of the organization. Dimeski, (2019) argues that the success of digital-era governance depends heavily on the ability of public organizations to foster entrepreneurial behavior. Without a spirit of innovation that permeates

all levels of staff, digital applications will simply become administrative formalities without substantial changes to service delivery (Dimeski, 2019; Ilawagbon & Mustapha, 2024; Ilawagbon & Ajisebiyawo, 2024). Therefore, deconstructing institutional barriers must begin with understanding how innovation is diffused amidst a bureaucratic culture that tends to be rigid. Mountasser & Abdellatif, (2023) A systematic literature review confirms that digital transformation is a multidimensional phenomenon that requires synchronization between technological advances and the readiness of change agents in the field.

Barriers to innovation diffusion at the government level are often rooted in organizational inertia and institutional resistance. Dwita Amaliah & Runing Sawitri, (2023) identified that digital transformational leadership plays a vital role in mitigating this resistance. A leader in the digital era must be able to build a clear vision and drive a work culture that is adaptive to technological change (Dwita Amaliah & Runing Sawitri, 2023). This is crucial because officials often feel threatened by system automation that is perceived to reduce their manual discretion. If a digital culture is not built collectively, then technology investment will only result in so-called "digital monuments" that are available but not optimally utilized (Priyashantha & Dilhani, 2022). In fact, developing a strong digital culture is the main foundation that enables innovation to be institutionalized sustainably (Dwita Amaliah & Runing Sawitri, 2023; Elbolok et al., 2025; Serafimova & Vasilev, 2024).

On the societal side, barriers to adoption are often socio-geographical and related to levels of trust. Rogers, (2003) In his classic theory of the diffusion of innovation, he explains that user perceptions of relative advantages and ease of use significantly determine the speed of technology adoption. However, in a geographically expansive region like South Sulawesi, these barriers are exacerbated by significant digital infrastructure gaps. This challenge is further complicated by the variable of uneven technological understanding within the community. Wulandari & Dasman, (2023) He emphasizes that internet understanding acts as a mediator in determining whether a digital tax system can significantly improve taxpayer compliance. Without massive literacy education, the technical convenience offered by the system will not be able to motivate taxpayers to switch to digital channels (Wulandari & Dasman, 2023; Adebisi, 2023; Christopher & Turyasingura, 2024).

Furthermore, the relationship between digital transformation and innovation must be seen as a continuous cycle. (Saeedikiya et al., 2025). proposes a multilevel framework explaining that digital transformation must trigger innovation at various levels, from business processes to public service models. A holistic transformation strategy requires alignment between technological capabilities and a research agenda focused on real user needs (Saeedikiya et al., 2025). This means that adopting digital PKB services is not simply about moving the counter to a device, but rather about creating new value through process innovation that reduces the administrative burden on taxpayers. Integration between flexible governance structures and business processes is key to addressing barriers to innovation penetration at the local level (Janssen & van der Voort, 2020; Goni & Van Looy, 2022; ).

As a result of this analysis, the dynamics of adoption and diffusion of digital PKB service innovations in South Sulawesi require an approach that simultaneously addresses institutional, social, and technical aspects. Emphasis on system transparency and accountability is essential to rebuild public trust, eroded by the complexity of manual procedures (Mountasser & Abdellatif, 2023). Only by understanding the interconnectedness of intuitive design, progressive leadership, and strong public literacy can digital transformation achieve its goal of sustainably boosting local revenue (PAD). Therefore, this chapter lays the foundation for the

premise that innovation diffusion is not a linear process, but rather a complex dialectic between technology and the human realities of public administration.

## Methods

This study employed a qualitative approach using an exploratory case study method to examine the implementation of digital Motor Vehicle Tax services in South Sulawesi Province. The qualitative approach was considered appropriate because the study focused on understanding the process, barriers, and adoption dynamics of digital public service innovation rather than measuring causal relationships statistically. The case study method was used to provide an in-depth understanding of the implementation of digital PKB services within a specific institutional, technological, and socio-geographic context.

The research focused on the digital transformation of Motor Vehicle Tax services managed by the South Sulawesi Provincial Revenue Agency, particularly through digital service channels such as Bapenda Sulsel Mobile, E-Samsat, and related online payment mechanisms. The analysis was guided by the Diffusion of Innovation theory developed by Rogers, especially the attributes of relative advantage, compatibility, complexity, trialability, and observability. This framework was used to examine how digital PKB services are perceived, adopted, or resisted by both government institutions and taxpayers.

Data were collected from multiple sources to obtain a comprehensive understanding of the implementation process. First, document analysis was conducted by reviewing regulations, standard operating procedures, institutional reports, service performance data, tax realization documents, application usage data, and official digital service records. These documents were used to identify the formal procedures, service mechanisms, institutional arrangements, and quantitative indicators related to the implementation of digital PKB services. The documents also included data on application users, digital transactions, manual service procedures, blank spot areas, digital literacy indicators, and official communication performance.

Second, in-depth interviews were conducted with key stakeholders involved in the planning and implementation of digital PKB services. The informants included officials and operational staff from the South Sulawesi Provincial Revenue Agency, representatives from the Traffic Directorate of the Indonesian National Police, Jasa Raharja, information technology personnel, and service officers at Samsat offices. These interviews aimed to explore institutional readiness, inter-agency coordination, data integration, technical barriers, leadership support, and organizational resistance to digital service transformation.

Third, data were obtained from taxpayers as service users through Focus Group Discussions and in-depth interviews. Participants were selected purposively by considering variations in age, education level, domicile, occupation, and digital literacy level. This selection was intended to capture diverse user experiences, including taxpayers from urban areas, semi-urban areas, and regions with limited digital infrastructure. The discussions and interviews focused on user perceptions of digital PKB services, ease of use, trust in digital payment proof, barriers to adoption, service expectations, and reasons for continuing to use manual services.

Fourth, digital observation was conducted on the official digital communication channels of the South Sulawesi Provincial Revenue Agency, including the Bapenda Sulsel Mobile application, official website, Instagram, YouTube, and other public communication platforms. This observation was used to assess how digital service information was disseminated to the public and how far communication channels supported innovation diffusion. Social media indicators, such as number of views, engagement patterns, tutorial content, and public

communication style, were analyzed to understand the observability and effectiveness of digital outreach.

The data were analyzed using thematic and narrative analysis. Thematic analysis was conducted by organizing data into several major themes based on the Diffusion of Innovation framework, including relative advantage, compatibility, complexity, trialability, observability, communication channels, social system, and socio-geographic inclusiveness. Narrative analysis was then used to interpret the experiences of stakeholders and taxpayers in relation to the broader institutional and social context of digital public service transformation. Data from documents, interviews, FGD, digital observation, and statistical records were compared through triangulation to strengthen the validity of the findings.

## **Result and Discussion**

The research findings presented in this chapter are designed to provide an in-depth empirical overview of the dynamics of the diffusion of digital innovation services for Motor Vehicle Tax (PKB) in South Sulawesi Province. The findings presented include a deconstruction analysis of innovation attributes through the lens of Everett M. Rogers' theory, an evaluation of mental readiness and transformational leadership within the bureaucracy, and a mapping of socio-geographic challenges that affect service accessibility. Furthermore, this section also reveals the reality of the performance of public communication channels on digital platforms and their impact on taxpayer transaction behavior and the efficiency of regional tax collection. All of these data sets, sourced from system observations, social media analytics data, official agency documents, and in-depth interviews, are synthesized to examine the extent to which digitalization has reformulated the relationship between fiscal authorities and the public in an effort to close *the tax gap* and strengthen the fiscal structure in South Sulawesi.

The research results are described as follows:

### **Innovation Attribute Analysis**

The successful diffusion of an innovation in the public sector is not determined by the sophistication of the algorithm or the technical prowess offered, but rather by the public's subjective perception of the value of the benefits they directly experience. In the context of the Motor Vehicle Tax (PKB) in South Sulawesi, digital innovation is positioned as an instrument for deconstructing conventional bureaucratic rigidity. Public assessment of this service is not technocratic in nature, but rather a dialectical process between functional needs and their sociopsychological experiences.

Technology isn't adopted solely for its sophistication, but rather for the extent to which its innovative attributes can reduce barriers inherent in manual systems and provide legal certainty and convenience for users. The following is an in-depth analysis of the five key attributes of innovation, according to Everett M. Rogers' framework, in the context of the Digital PKB in South Sulawesi.

### **Relative Advantage**

Relative advantage *is* the strongest predictor variable in determining the level of adoption of an innovation according to the Diffusion of Innovation theory developed by Everett M. Rogers. This attribute is not understood objectively as mere technical prowess, but rather is based on the subjective perception of potential adopters, namely taxpayers and bureaucratic apparatus, regarding the extent to which the innovation provides added value compared to existing conventional methods. In the context of digital Motor Vehicle Tax (PKB) services in South Sulawesi, relative advantage arises from the dialectical tension between the promise of

technological efficiency (speed, transparency, and accessibility) and the reality of the administrative burden of manual services that are rigid, sequential, and labor-intensive. This advantage covers various dimensions, ranging from the economic dimension through real cost savings, the dimension of convenience through the reduction of physical barriers, to the dimension of functional satisfaction which is the main determinant for individuals to decide to switch from traditional practices to a more modern digital service ecosystem.

As a basis for analysis, the efficiency of manual services is based on a Joint Decree between the Director of Traffic of the South Sulawesi Regional Police, the Head of the South Sulawesi Regional Revenue Agency (Bapenda), and the Head of PT Jasa Raharja, South Sulawesi Branch (Number: KEP/12/XI/2021; 1136/XI/YEAR 2021; P/26/SP/2021) (Standar Operasional Prosedur Penyelenggaraan Sistem Administrasi Manunggal Satu Atap Di Provinsi Sulawesi Selatan, 2021).

The existence of these 17 SOPs reflects the characteristics of Weberian bureaucracy, which emphasizes formality and strict standardization to ensure legal certainty. On the one hand, this instrument serves as a protective mechanism, protecting both officials and the public from potential abuse of authority or maladministration. However, on the other hand, these highly detailed and layered procedural specifications create the phenomenon of procedural rigidity.

The fragmentation into 17 service categories is often perceived by taxpayers as an administrative complexity ( *perceived Complexity* ) is intimidating. Overly rigid structures force people to actively adapt to the bureaucratic system, rather than the other way around. This creates a high psychological threshold; potential adopters tend to be reluctant to initiate the service process because they imagine bureaucratic processes separating the interests of one agency from another under one roof.

This rigidity is also evident in the absolute requirement for physical documents, where a small error at one stage of the procedure can halt the entire service chain. This is where the relative advantage of digital services lies; technological innovation exists to offer agility *through* process simplification without compromising the substance of legal certainty, thus transforming administrative burdens into functional convenience.

According to the technical document for the SOP for Motor Vehicle Approval, there is a significant time disparity between the manual and digital systems. The manual service involves five implementing entities (the Police, Operations Officers/Regional Revenue Agency, Determination Officers, Jasa Raharja, and Bank Cashiers) working sequentially.

In contrast, digital services through the Basul *Mobile* or SIGNAL application deconstruct the entire sequential chain. This technology replaces the interpersonal handover mechanism between five officers with a single, integrated data validation process run automatically by the system's algorithm. Users no longer need to wait for officers to finish their work at each counter. Technically, the digital system only takes an average of five minutes to complete the entire cycle, from entering the vehicle registration number to completing the payment transaction in *real time* .

Thus, there is a 90.19% time efficiency difference, representing an absolute relative advantage in the time management dimension. This advantage is not only quantitative (46 minutes saved) but also qualitative. Digital services offer time certainty that manual services lack. This efficiency represents a return to time autonomy for the community, where tax obligations are no longer an activity that takes up a large portion of the workday, but rather a micro-activity that can be done asynchronously in between daily routines. This 90.19% efficiency jump is the

most persuasive argument in encouraging innovation adoption, as the value of time is directly correlated with individual productivity.

From an institutional perspective, the relative advantages of digital services directly contribute to increased organizational efficiency and public accountability. Manual systems involving five implementing entities are not only time-consuming but also highly susceptible to *human error* and unnecessary redundancy in data input. Automation through digital services eliminates the fragmentation of human interaction, which sociologically often creates friction between officers and the public.

In-depth interviews with taxpayers in South Sulawesi revealed an interesting reality regarding the inefficiency of manual services. Many respondents complained about the complexity of the physical requirements. However, research findings indicate that this inefficiency does not entirely stem from the service officers. There is a phenomenon where people come to the Samsat office without first reviewing the requirements, resulting in a cycle of returning home due to incomplete documents. This inefficiency drastically increases the social costs borne by citizens. In this context, digital services offer a relative advantage as a self-education tool; through an app interface, the system automatically filters *document* completeness before transactions can proceed, thereby minimizing the possibility of procedural rejections midway through the process.

Furthermore, there is massive economic significance for the South Sulawesi Provincial Government in realizing the Regional Original Revenue (PAD) target. Research data shows a *tax gap* worth IDR 951.3 billion originating from delinquent taxpayers. A major challenge for the agency today is bridging the gap between information and payment execution. It is recorded that there are 1.2 million users of the Basul *Mobile application* who have actively checked their tax data independently. This figure is a very valuable digital asset; if the innovation diffusion strategy can encourage these 1.2 million users to convert checking activities into *online payment transactions*, then the acceleration of the realization of regional revenue targets will occur exponentially without burdening the limited physical infrastructure of service offices (such as the Main Samsat, Gerai, and Mobile Samsat).

The strategic advantage for agencies lies in their ability to shift service burdens from manual to digital, which automatically reduces office operational costs while increasing the precision of fiscal data. With this conversion, the government not only gains certainty about cash flow but also more accurate data on taxpayer behavior for future fiscal planning.

The ultimate success of innovation diffusion lies not in the aesthetics of the application interface, but rather in the system's ability to reduce barriers to adoption. When the public perceives that paying taxes digitally is significantly more beneficial (saving 46 minutes of time and eliminating transportation costs), voluntary compliance will be established.

The dialectic between 17 rigid manual SOPs and the flexibility of a 5-minute digital service is at the heart of this relative advantage. The benefits for the public include ease of access and a reduction in social costs resulting from the often-complained complexity of requirements. Meanwhile, for the government, this innovation is a solution to efficiently close the Rp 951.3 billion *tax gap*. Reducing procedural barriers will directly strengthen regional fiscal foundations through more humane and accountable mechanisms, without having to rely entirely on repressive fines.

## Compatibility

The second attribute in the Diffusion of Innovation Theory is compatibility, defined as the extent to which an innovation is perceived as consistent with the existing values, past experiences, needs, and lifestyles of potential adopters. In the context of the Digital Motor Vehicle Tax (PKB) service in South Sulawesi, this compatibility analysis explores the dialectic between advances in financial technology and the sociocultural realities of a heterogeneous society.

The suitability analysis begins by capturing the physical modalities of the community as the primary basis for innovation adoption. Before addressing competency, it's important to assess the extent to which digital communication tools have become a primary need for people in South Sulawesi.

Based on 2021 statistics, telecommunications device penetration in South Sulawesi shows a very progressive rate. This serves as the primary physical modality for Bapenda (Regional Revenue Agency) in disseminating digital services, where mobile devices should serve as a bridge between information and taxpayers before conducting transactions (Badan Pusat Statistik, 2022).

Table 1. 1Phone Ownership Data

Device Access Indicator	Percentage	Data Interpretation
Mobile Phone Ownership (South Sulawesi)	93.75%	Very High (Massive)
Mobile Phone Ownership (National)	90.54%	South Sulawesi is above the national average

The data above shows that structurally, physical barriers such as hardware availability *are* practically no longer a major obstacle. At 93.75%, nearly all households in South Sulawesi have access to digital services. However, research findings reveal that device ownership is only a necessary, not a sufficient, condition for sustainable adoption.

Interviews with taxpayers at the Samsat (State-Owned Vehicle) office revealed a behavioral anomaly. Although nearly all respondents owned smartphones, many still preferred to visit the service office without first using their devices to review the requirements. The phenomenon of people going back and forth was a crucial finding; people often complained about the complexity of the requirements at the counter, but in-depth interviews revealed that this inefficiency often stems from taxpayers' own lack of preparation.

Taxpayers tend to ignore the information features on their mobile devices and jump straight to manual services. Consequently, when documents are found to be incomplete at the counter, the perception arises that bureaucratic services are extremely difficult, even though these obstacles could be minimized if physical modalities (mobile phones) were used as pre-validation instruments. This indicates that the alignment between device availability and a culture of digital preparation has not yet been fully established, resulting in the efficiency opportunities offered by mobile devices not being fully utilized by the public or by Bapenda's outreach strategies.

After assessing infrastructure readiness, the next challenge arises in the cognitive and behavioral aspects of user readiness. The 2021 South Sulawesi Digital Literacy Index data (Badan Pusat Statistik, 2022) shows the community's competency profile across four main pillars.

Table 2. Digital Literacy Index of South Sulawesi Province

No	Digital Literacy Pillar	South Sulawesi Provincial Score	National Average Score	Category
1	Digital Culture	3.92	3.90	Moderate
2	Digital Safety	3.16	3.10	Moderate
3	Digital Ethics	3.37	3.53	Moderate
4	Digital Skills	3.45	3.44	Moderate
5	Digital Literacy Index	3.47	3.49	Moderate

The mismatch between information needs and actual transaction behavior is reflected in the performance of the Bapenda Sulsel *Mobile application*. The public expressed a strong interest in data transparency, but was reluctant to complete transactions on the same platform. A detailed comparison of digital payment access and execution can be seen in the following table:

The 1.2 million users demonstrate that this app has met the public's need for fast tax information. However, data showing only 2,291 transactions through the app and 13,034 transactions through E-Samsat confirms that the digital system is not yet considered a commonplace procedure for the majority of users, compared to the total potential number of users (Badan Pendapatan Daerah Provinsi Sulawesi Selatan., 2025).

Table 3. Data on Access to the Bapenda Sulsel Mobile Application

Application Interaction Variable	Empirical Condition	Sociological Interpretation
Number of Tax Data Access Users	1.2 Million Users	The need for information/checking tax amounts is very high
Payment via Application	2,291 Transactions	Low conversion due to a trust gap in the self-service system
Payment via E-Samsat	13,034 Transactions	Payment through more familiar banking/ATM channels

This indicates that people continue to visit physical offices to seek manual stamp validation on vehicle registration certificates (STNK), which they perceive as providing far more legal certainty than digital proof. The low conversion rate, from 1.2 million users to only tens of thousands of payment transactions, demonstrates that public trust remains limited by the physical legality and reliability of the payment system.

In building bridges of adoption, one crucial aspect is aligning the system with the user's sociocultural identity. Observations of the Bapenda Sulsel *Mobile application* revealed initial attempts to localize culture through the use of local vocabulary closely associated with South Sulawesi etiquette, namely the word " *iyé* ." The use of this word reflects the institution's recognition of the values of politeness and respect that are standard for social interaction in the region.

However, upon closer examination, this integration of local wisdom remains embryonic and limited to formal linguistic politeness. While the use of the word " *iyé* " lends a touch of warmth to the technocratic interface, the app has yet to holistically integrate the richer dialects or vocabulary of Bugis, Makassar, or Toraja into its core features. This leads to the app still being perceived as a bureaucratic product, tending to be cold and formal, despite the use of a few local words.

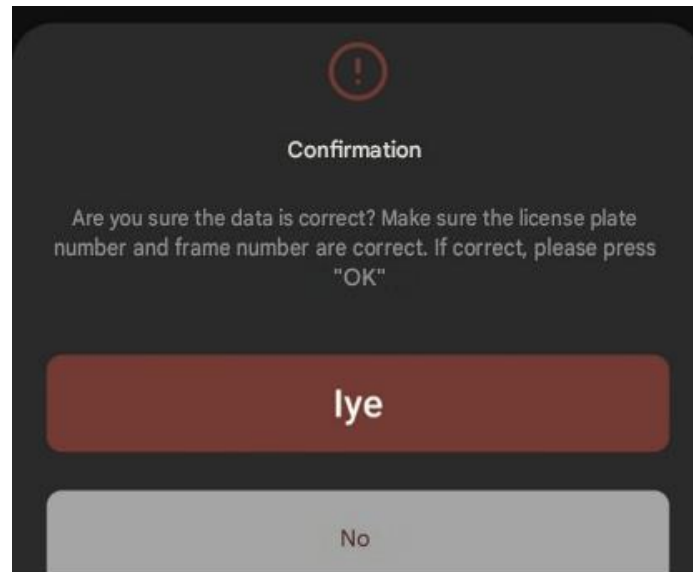


Figure 1 Screenshot of the Payment Process Through the Basul Mobile Application

Previous research on *Human Computer Interaction (HCI)* and *E-Government* has shown that cultural content localization has a significant impact on user motivation (Setiawan, 2022). Effective localization is not simply the insertion of greetings, but rather how the system is able to create a higher psychological trust because it is perceived as a complete representation of their own community. In South Sulawesi, fundamental values such as *Siri' na Pacce* (self-respect and empathy) and the principles of *Sipakatau*, *Sipakalebbi*, *Sipakainge* (humanizing, respecting, and reminding each other) are very strong sociocultural anchors. If these noble values are not reflected systemically in the flow and interaction of applications, digital innovation will continue to feel distant from the pulse of community life.

The word " *iye* " actually offers a potentially powerful entry point for the app to become a social icon for South Sulawesi. However, without a deeper localization strategy that taps into the broader emotional and philosophical aspects of the local community, the PKB Digital innovation risks remaining trapped in the status of an entity that merely offers a local greeting without truly becoming an integral part of the community's sociocultural values and daily lives.

The suitability of the Digital PKB must also be juxtaposed with the trend of changes in people's transaction behavior at a macro level in Indonesia in 2024. The following data shows that the public is actually behaviorally ready, but there is a significant delay in adoption in the tax sector (Kementerian Komunikasi dan Digital, 2024).

Table 4. 2 Digital Transaction Data

Digital Payment Instrument	Growth (YoY)	Lifestyle Status
BI-FAST	67.79%	Main lifestyle in fund transfers
Digital Banking	34.49%	Daily financial transaction routine
Digital PKB Service	Lagging behind	Still perceived as a secondary procedure

This data provides empirical evidence that the people of South Sulawesi are already highly compatible with *online payment procedures* . This readiness is reflected in the massive growth in BI-FAST and digital *banking usage* . However, the research findings reveal a strategic anomaly: amidst the high public interest and readiness to switch to digital devices, the South Sulawesi Regional Revenue Agency (Bapenda) has not yet fully utilized this golden opportunity.

Despite the availability of digital infrastructure and a mature user profile within the private banking ecosystem, Bapenda (Regional Revenue Agency) has not yet successfully translated this digital enthusiasm into an optimal channel for regional tax payments. This adoption gap indicates that the primary problem lies not with the public's technological inadequacy, but rather with the agency's inability to build a bridge of trust, convenience, and cultural identity that aligns with the banking ecosystem. Bapenda appears to be allowing a potential 1.2 million tax data users to remain outside the digital payment ecosystem, resulting in stagnant tax collection efficiency. The next diffusion strategy should focus on optimizing digital channels to align with BI-FAST convenience standards and a more familiar touch of local identity.

### **Complexity**

Within the framework of Diffusion of Innovation Theory, complexity is understood as the level of difficulty experienced by potential users in understanding and operating an innovation. In the context of the Digital Taxpayer Identification System (PKB) in South Sulawesi, this complexity variable extends beyond the application interface design to encompass the entire spectrum of procedures taxpayers must undergo. Before delving further into the operational comparison between manual and digital systems, we need to first examine the legal limitations regarding approval, which often become a dead end in this bureaucratic process.

Validation of a Vehicle Registration Certificate (STNK) should not be viewed merely as an administrative routine for annual tax payments. Fundamentally, it is a legal instrument that serves both the supervisory and legitimizing function of motor vehicle operations in public spaces. The main basis for this mechanism is outlined in (Undang-Undang Republik Indonesia Nomor 22 Tahun 2009 Tentang Lalu Lintas Dan Jalan, 2009), specifically Article 70 paragraph (2), which states that STNKs and Motor Vehicle Registration Certificates are valid for five years, but must be validated annually.

A closer look at the article reveals that annual approval serves as a crucial control mechanism. On the one hand, it plays a role in annual oversight to verify vehicle registration and identification data to ensure the vehicle's physical condition matches state records. On the other hand, this process is designed to foster taxpayer compliance, as fulfilling fiscal obligations such as the PKB (Vehicle Tax) and SWDKLLJ (Vehicle Tax) are essential for legal road use.

This procedural modernization has actually been granted a legal framework through Peraturan Kepolisian Negara Republik Indonesia Nomor 7 Tahun 2021 Tentang Registrasi Dan Identifikasi Kendaraan Bermotor, (2021). Article 61 paragraph (1) of the regulation explicitly provides space for STNK validation to be carried out through two channels, namely manually at the physical Samsat service or electronically through the Samsat *Online service*. The existence of this legal space indicates that, from a regulatory perspective, there are no obstacles for Bapenda to implement digital validation comprehensively.

However, the implementation of this electronic validation is bound by strict requirements stipulated in Article 61 paragraph (3), where the vehicle must be registered in the National Police's Ranmor Registration Information System database, not be blocked, and have paid its tax obligations. This is where the real complexity problem in South Sulawesi lies. The obstacle to adopting this innovation stems from the suboptimal data synchronization aspect between the Bapenda information system and the National Police database. As a result, even though taxpayers have completed payments through the application, the system often fails to automatically issue electronic validation because the data is not synchronized in *real time*. This condition creates a post-transaction bureaucratic gap, where citizens who have paid digitally are forced to return to manual procedures to obtain physical validation.

A review of the Standard Operating Procedure (SOP) for Samsat (Civil Service) administration clearly demonstrates the structural barriers inherent in the manual method. The standard time for completing a manual validation cycle is 51 minutes. However, in reality, this duration often significantly increases due to unpredictable queue volumes. Interviews with taxpayers at Samsat offices confirm this situation; many complain that despite the information boards promising a fast process, they still have to spend hours waiting due to the sequential service pattern that requires moving from one counter to another.

In contrast, the Bapenda SulseL *Mobile application* offers starkly different transaction efficiencies. Payment steps have been simplified to the point that the process from data input to transaction completion takes less than five minutes. However, this efficiency is threatened by the gap between the regulations of Perpol 7/2021 and the reality of technological integration. Because electronic validation has not been optimal due to database synchronization issues, taxpayers are ultimately stuck in the same physical queue just to obtain a manual validation stamp.

The complexity of manual systems not only harms time efficiency but also impacts the integrity of public services. Manual service structures, which involve numerous face-to-face interaction points, tend to create loopholes for abuse of authority. This is reflected in the Case Handling Report for the Development of the South Sulawesi Provincial Revenue Agency (Bapenda).

Table 5. Data on Number of Reports

Year	Number of Cases/Reports
2021	17 Cases
2022	43 Cases
2023	13 Cases

The surge in cases in 2022, reaching 43 reports, demonstrates that complex and labor-intensive procedures are highly susceptible to maladministration. In this context, digital innovation offers a solution to reduce complexity and increase accountability. Through digital systems with automated audit trails, risky physical interactions can be minimized. The significant decrease in cases in 2023, to 13 reports, can be interpreted as a sign of the success of strengthening system-based oversight and increasing digital awareness in the workplace.

### ***Trialability***

Trialability refers to the extent to which an innovation can be experimented with on a limited scale or in stages by potential users before they decide to adopt it permanently. Rogers, 2003 emphasizes that innovations that can be tried with minimal risk tend to have faster adoption rates, because the trial process provides an opportunity for users to reduce uncertainty and verify the claimed benefits of the innovation. In the context of digital public services, *Trialability* is closely related to ease of access without financial coercion in the initial stages.

A very interesting phenomenon emerged in the Bapenda SulseL *Mobile application*, where there was a sharp disparity between information trials and transaction trials. Data shows a very high level of ease of use for the information trial, evidenced by the 1.2 million users of the tax check feature. The people of South Sulawesi felt very comfortable trying this feature because it was informative, fast, and most importantly, it required no financial commitment or legal risk. At this stage, users felt like they were conducting a free trial to validate the amount of their obligations. The success at this stage demonstrated that the application's initial interface was sufficiently user-friendly and accommodating to public curiosity.

However, the massive enthusiasm during the information testing phase stalled or stagnated when it came to transaction or payment trials. Although 1.2 million people downloaded and verified their data, the conversion rate to actual digital payments was very low. In-depth analysis revealed that the main obstacle lay not in the technical aspects of app navigation, but rather in the legal uncertainty and psychological burden that arose after transactions. From a user perspective, attempting digital payments was a *high-stakes* trial.

This risk stems from the lack of an integrated, *end-to-end authentication ecosystem*. People feel that the benefits of trying digital services are diminished or undermined if they are ultimately forced to go through tedious manual procedures. Interview data reinforces this finding; residents expressed confidence in the app's technical ease, but were highly skeptical of the legal validity of digital proof of payment when facing police checks on the road. There is a collective concern that without a physical stamp on their vehicle registration documents, the legality of their vehicles will be questioned.

This situation has disrupted the innovation trial cycle. The public feels trapped in a technological irony: they are encouraged to move quickly along the digital path through apps, yet are still forced to stop and queue at physical counters for a manual stamp of approval, as mandated by Law No. 22/2009. (Undang-Undang Republik Indonesia Nomor 22 Tahun 2009 Tentang Lalu Lintas Dan Jalan, 2009). As long as the database integration between Bapenda and the National Police (Polri) fails to achieve automatic electronic validation as stipulated in Article 61 of Police Regulation No. 7/2021 (Peraturan Kepolisian Negara Republik Indonesia Nomor 7 Tahun 2021 Tentang Registrasi Dan Identifikasi Kendaraan Bermotor, 2021), this innovation will remain stuck in the information-only testing phase. Users will be reluctant to conduct full transaction trials if the end result doesn't provide legal certainty comparable to conventional methods. Therefore, strengthening system integration is an absolute prerequisite for the full benefit of public testing capabilities, from data input to legal validation.

### ***Observability***

Within the framework of the Diffusion of Innovation theory proposed by Rogers, 2003, *observability* is the extent to which the results of an innovation can be seen and its impact felt in real terms by others. For the South Sulawesi Regional Revenue Agency (Bapenda), the success of digitalization adoption through the Basul *Mobile* application depends heavily on how transparently and convincingly the benefits are presented to the public through visual communication channels. Data shows that although there are 1.2 million people accessing tax information systematically, the reality observed in the field through the official YouTube channel actually shows very limited educational reach. This asynchronous approach indicates that the tangible results of application use have not been widely observed by potential users, resulting in a slow innovation diffusion process at the functional level.

The low number of views on technical content such as "Bapenda Sulsel *Mobile* " which only achieved 1,700+ views reflects the weak dimension of instructional *observability*.

Field findings in Pinrang Regency indicate that outreach through billboards is insufficient to encourage technology adoption by taxpayers. Respondents complained that the presentation style of YouTube tutorials was considered too rigid and impractical. This has led to skepticism among users; they require visual evidence of the complete transaction process to ensure the system's operation. This statement suggests that without tangible visual demonstrations, digital innovation remains perceived as abstract and high-risk by the public.

Furthermore, the dominance of internal reports, such as Performance Reports, with fewer than 50 views, indicates a misorientation in building innovation visibility. From an *observability*

*perspective*, the public craves visual evidence of how their bureaucratic problems are resolved, rather than mere ceremonial agency reports. The rigid and formal nature of this content blocks opportunities for taxpayers to observe the practical side of technology. As a result, digital innovations remain perceived as unfamiliar administrative instruments rather than solutions relevant to everyday needs, as noted by informants who perceive government content as often self-serving.

In contrast to YouTube, Instagram's performance, which reached 212,000 views for its app socialization campaign, demonstrates the potential for visual *observability*. This high reach demonstrates the public's keen interest in observing government digital innovations. However, a fundamental problem arises when this high visibility isn't matched by clear results. The one-way nature of Instagram content results in the public only observing surface information without seeing concrete evidence of the efficiency of the actual transaction process.

Findings from one informant indicate that digital communication strategies remain one-way. The predominance of announcement-only content, without responsive complaint management or feedback, leaves taxpayers feeling uncertain. Respondents expect more transparency into other users' experiences than simply aesthetic content on Instagram.

The phenomenon of digital brochures on Instagram exacerbates the low level of substantive *observability*. *Because the content is presented statically, potential users cannot observe the dynamic interactions or real-life emotional experiences* that typically drive adoption. Observable innovations should emphasize successful outcomes, such as speedy verification or instant payment receipts. Without visual elements demonstrating user satisfaction, people only observe the service promises in the brochure, rather than a system that has been proven to work effectively in the hands of fellow citizens.

Data on the high public interest in printing SKKP (10,700 views) reveals that *the observability aspect* most trusted by the public is still physical evidence. This indicates a crisis of confidence in the legal validity of digital evidence. Taxpayers feel the need to have physical documents that can be seen and held as protection during roadside inspections. Interview results revealed a collective preference for physical evidence over digital evidence. This concern is rooted in the uncertainty of the legality of electronic documents when dealing with field officers. For taxpayers, traditional validation in the form of a wet stamp provides a stronger sense of psychological security and legal certainty than intangible digital validation. This barrier confirms that digital efficiency is perceived as not yet providing tangible legal assurance.

The suboptimal *social proof mechanism* or user confidence *testing (peer-to-peer validation)* on Bapenda social media platforms has resulted in the loss of the snowball effect in the diffusion process. According to behavioral psychology principles, individuals tend to validate new actions by observing the behavior of their peer groups. If social media content only presents narratives from the perspective of authorities without narratives from real users, positive social pressure will not emerge. People need concrete evidence from others' experiences to reduce skepticism; without it, the convenience offered by the application will remain isolated and unnoticed as a social trend worthy of wider community participation.

The failure to build emotional engagement on Instagram also reflects the rigidity of social media, which should be community-based. Instagram is used like conventional print media, with minimal two-way interaction and discussion space. Yet, the key strength of *observability* in the digital age lies in the democratization of information through dialogue. Without interactive Q&A sessions or the involvement of local *influencers* demonstrating app usage,

Bapenda's digital campaign will remain trapped in a cycle of information dissemination, never successfully changing taxpayers' beliefs about the ease of independent transactions.

Furthermore, limited access to complaint and survey features indicates that the public does not yet feel part of the Bapenda digital ecosystem. They are merely passive consumers of information because they do not see any observable results from their participation. To address this gap, a shift toward micro-instructional content is needed: short videos that focus on showing how to solve a specific problem. By seeing visual problem-solving demonstrations, taxpayers' confidence will increase because they will see that the technical steps are easy to execute on their own without the assistance of an officer.

In conclusion, Bapenda's digital communication strategy must transform from simply informing to demonstrating. Optimizing *observability* through visual social media is essential for accelerating the conversion of manual to digital tax compliance in South Sulawesi. By highlighting successful transactions and organic social proof, Bapenda can create an environment where the use of Basul *Mobile* is seen as a symbol of modernity with tangible results. This transformation will ensure that digital innovation is no longer considered a dubious alternative but rather a normative necessity whose efficiency and benefits are transparently observable by all levels of society.

### **Communication Channels (Change Agents)**

Within the Diffusion of Innovation Theory, communication channels serve as the lifeblood connecting innovation sources with potential adopters. Adoption effectiveness is largely determined by an agency's ability to select media that aligns with the characteristics of its audience. The South Sulawesi Provincial Revenue Agency (Bapenda) recognizes that overcoming public skepticism toward bureaucratic services requires transforming communication channels to become more fluid and flexible. Data shows a significant shift from simply one-way information dissemination to digital interactions based on user interests and needs.

The South Sulawesi Regional Revenue Agency (Bapenda)'s use of YouTube reflects the institution's efforts to provide instructional and technical visual documentation. Based on access data on Bapenda's official YouTube channel, a clear pattern emerges where the public pays the most attention to content offering practical solutions to administrative obstacles. This is confirmed by tutorial videos on using the E-Samsat application or self-service tax payment mechanisms, which dominate the number of views compared to other content. YouTube, in this case, has transformed into a knowledge base actively accessed by taxpayers during their information-seeking phase. The high level of interaction with these tutorial content also demonstrates that visual narratives are far more effective in reducing the perception of system complexity than static flyers or posters.

However, a comparative analysis of content reach and total market potential strongly indicates that Bapenda's YouTube utilization has not yet reached its maximum potential. Data shows that the best-performing content currently only reaches around 4,000 views. This figure stands in stark contrast to the previously recorded 1.2 million users of the Bapenda Sulsel *Mobile app*. This wide gap indicates that messages about the ease of digital innovation are only reaching a small portion of the total taxpayer ecosystem, which already has digital interests. This low penetration indicates that information dissemination strategies are still trapped by the platform's algorithmic organic reach, preventing crucial information from being distributed evenly across all target audiences.

Therefore, accelerated steps are needed through optimization of paid advertising features (YouTube Ads or Google Ads). Before proceeding, it is important to understand the cost-efficiency and reach of these instruments. Technically, YouTube Ads operates with a highly competitive *Cost Per View* (CPV) scheme, ranging from Rp10 to Rp50 per view, or through a *Cost Per Mille* (CPM) scheme for every 1,000 impressions with an estimated cost of Rp50,000 to Rp100,000. With a measured budget allocation, Bapenda can ensure that the tutorial content appears precisely to internet users in the South Sulawesi region who have an interest profile in automotive or public services.

In comparison, outreach through manual print media (such as brochures, flyers, or billboards) requires significantly higher production and distribution costs, with effectiveness that is difficult to measure. Printing 10,000 sheets of standard-quality brochures costs an average of IDR 2,000,000 to IDR 5,000,000, not including the operational costs of field distribution personnel. With the same budget of IDR 5,000,000, YouTube ads can generate approximately 100,000 to 250,000 video views precisely targeted to relevant audiences. The advantage of digital advertising lies in its data-driven targeting capabilities, where Bapenda can push this instructional content directly to the 1.2 million tax data users who have demonstrated digital behavior but have not yet made payments.

The use of advertising will not only raise awareness but also serve as a functional reminder that guides taxpayers to complete transactions during their media consumption activities. This comparison confirms that switching to paid advertising is not simply following a trend, but rather a strategic investment that is far less expensive and has a far-reaching impact than manual print methods. Without paid promotional support, this highly useful tutorial content will remain isolated to a small audience niche, thus squandering a golden opportunity to convert the masses to full digital adoption.

Instagram, particularly through its *Reels feature*, has become Bapenda's spearhead in reaching productive demographics in South Sulawesi. Based on internal data screenshots, *Reels content* has achieved a reach far exceeding that of conventional image uploads. Figures such as 23,300 to tens of thousands of views on short videos about the convenience of QRIS and Samsat *Drive-Thru services* demonstrate that this micro-educational strategy has successfully triggered Instagram's algorithm to distribute information widely. The success of *the Reels feature* lies in its ability to package boring administrative messages into entertaining content. In a very short duration, Bapenda is able to penetrate awareness without making the audience feel like they are being lectured by the government.

However, a more in-depth look at the cumulative performance of the @bapendasulsel Instagram account reveals a significant challenge related to the effectiveness of content virality. Based on the collected data, of the total uploads, which have reached more than 1,500, the number of videos that have reached over 100,000 *views* is still very low. This phenomenon indicates that although the content produced is quite engaging, the organic reach of the Bapenda account appears to have reached saturation point. The low number of content that reaches massive virality amidst thousands of uploaded content indicates that the message about digital innovation has not yet successfully exploded beyond the circle of existing *followers*.

This situation emphasizes the need to diversify communication strategies by utilizing paid advertising features such as Meta Ads (Instagram Ads). Economically, investing in Instagram Ads offers very high efficiency with flexible budget control. The estimated cost to reach an audience through this platform in Indonesia ranges from Rp10,000 to Rp35,000 for every 1,000 impressions, based on a *Cost Per Mille* (CPM) scheme. This means that with a budget allocation of just Rp1,000,000, Bapenda has the potential to reach up to 30,000 to 100,000 new

targeted users. Compared to organic reach, which requires a long time and the production of thousands of pieces of content, the use of paid advertising can instantly multiply the visibility of featured content in a matter of days.

By combining the creativity of its already excellent infotainment content with targeted advertising support, Bapenda can force this information to break through the limitations of organic algorithms and enter the timelines of 1.2 million data users who have previously been passive. The relatively low cost per interaction (estimated at Rp500-Rp2,000 per click to the app) makes it a far more rational solution than physical outreach methods. Without advertising optimization, educational content produced with significant resources will remain stuck at tens of thousands of views, which is proportionally far from the primary target of innovation adoption to convert interest in information into real transactions.

To ensure this digital communication strategy is on track, performance analysis through *the Social Blade platform* provides empirical evidence regarding the health of the @bapendasulsel Instagram account. Based on the latest analytics data, the account has a B- rating, which is a moderate score for a government agency. With an accumulated 1,518 media posts and a follower base of 17,476, the account has recorded steady organic growth, adding an average of 149 new followers in the last 30 days.

However, a deeper dive into the data reveals challenges in terms of interactivity and message resonance. Social Blade data recorded a very low engagement rate of just 0.17%, with an average of 29.07 likes and only 0.93 comments per post. This engagement rate of less than 1% confirms that despite widespread information dissemination, the level of engagement or active audience response to the content remains very minimal. Unstable fluctuations in daily follower growth ranging from zero to a peak of 31 followers in a day This indicates that audience growth is highly dependent on situational policy momentum, rather than a sustained, massive growth trend. For a public agency, performance scores on this third-party analytics platform are a strong signal that organic efforts have reached their maximum capacity, necessitating digital advertising intervention to boost engagement and expand reach to more relevant audiences.

Juxtaposing the success profiles of communication channels on YouTube and Instagram with real-world operational data from 1.2 million app users reveals a complex sociopsychological reality. The South Sulawesi Provincial Revenue Agency (Bapenda) has indeed achieved significant initial success in the innovation diffusion process, particularly in the knowledge acquisition and initial persuasion phases. Visually, these digital channels have successfully built a broad collective awareness of the existence of digital PKB services within the community.

However, a critical interpretation of this analytical data also reveals a significant disparity between information exposure and mass reach. While some content views appear impressive, this reach remains sporadic and has not yet reached all 1.2 million taxpayers who have demonstrated digital behavior. The high number of tax data accesses that have not yet been converted into payment transactions demonstrates that Bapenda still faces significant challenges in terms of the intensity of information dissemination. The current outreach strategy, which relies heavily on organic mechanisms, has proven incapable of breaking through algorithmic barriers to reach the majority of adopters. This confirms that Bapenda still needs to increase the frequency and quality of information dissemination through social media in a more systematic and aggressive manner.

The failure to achieve full adoption in the digital tax ecosystem, therefore, stems from two interrelated sides of the same coin. On the one hand, the intensity of social media outreach still

requires massive acceleration through digital advertising support so that messages of convenience don't just circulate within a limited audience. On the other hand, no matter how impressive the communication strategy, it will always clash with the reality of incomplete physical procedures, such as the "manual stamp" bottleneck that often becomes a deterrent for digitally educated taxpayers. Future communication strategies must be able to combine the promise of convenience with a comprehensive data integration solution, so that the 1.2 million people already on the verge of this innovation can be encouraged through more massive information to permanently adopt this transaction.

### **Social System (A Social System)**

The process of innovation diffusion within a government institution often encounters obstacles not only in technical aspects, but also in clashes between organizational cultures and the mental readiness of its staff. At the Regional Revenue Agency (Bapenda) of South Sulawesi Province, the transition to digital services required more than a software upgrade; it demanded a collective paradigm shift regarding the role of bureaucracy in the era of automation.

The adoption of technology in public services often triggers latent concerns among employees about role redundancy. The fear that automation will replace humans is a psychological factor that can hinder the internal diffusion of innovation. In this context, Transformational Leadership plays a crucial role as a sociopsychological bridge. This leadership goes beyond providing technical instructions, but also assuring all levels of the apparatus that the presence of digital innovations, such as *online payment applications*, is not intended to eliminate human roles.

Instead, technology is positioned as a supporting instrument to increase work efficiency, reduce repetitive administrative burdens, and enable employees to shift to more strategic and analytical roles. The transformational leadership vision at Bapenda South Sulawesi is aimed at building an understanding that digitalization is a means of improving service quality. By reducing tedious clerical interactions, officials are expected to focus more on their supervisory and taxpayer education functions; a paradigm shift that, according to internal respondents, initially raised concerns that the application would eliminate the role of counter staff. However, through intensive leadership understanding, the system is seen as being able to humanize employees by freeing them from the tedious routine of manual input, transforming them into service consultants who accompany citizens in migrating to a digital system.

The quality of innovation diffusion within Bapenda is also largely determined by the organization's intellectual independence in managing its information systems. An analysis of the IT Unit Structure demonstrates a consistent effort to minimize absolute dependence on third parties (vendors). This independence is crucial for the organization to have full control over data security and the flexibility to develop systems tailored to the local needs of South Sulawesi.

Based on employee distribution data, the Information Technology and Systems (ITS) Division is supported by 19 employees (3.6% of the total employee population). While this number may appear small in quantity, its effectiveness is supported by the educational profile of Bapenda employees, who generally possess high cognitive capacities. Data shows that 85.03% of the total employees have completed higher education (291 with a bachelor's degree and 158 with a master's degree). This predominance of undergraduate and postgraduate graduates provides a strong intellectual foundation for the organization to understand, operate, and *troubleshoot* the system independently. The presence of a competent internal team at TSI ensures that

application feature adaptations can be carried out quickly without having to always rely on vendor intervention, which is often a barrier in conventional bureaucracy.

The commitment to digital transformation at the South Sulawesi Provincial Revenue Agency (Bapenda) is not merely a situational response to changing times, but has been formally institutionalized in the Strategic Plan (Renstra). This document serves as both an ideological and operational guideline, establishing the organization's medium-term policy direction. The Renstra's primary focus is integrating the use of information technology with the principle of transparency to create a systemic impact on the quality of public services.

Furthermore, the policy direction emphasizing excellent service indicates that the organization recognizes the importance of user convenience in the digital ecosystem. Technology is being used to reduce physical queues and bureaucratic hassles, providing taxpayers with a much more convenient experience compared to conventional methods. Ultimately, increasing transparency in regional revenue management through these digital channels aims to rebuild public trust in Bapenda's credibility as an accountable regional financial manager.

Within the framework of Rogers' Diffusion of Innovation theory, *observability* is the extent to which the results of an innovation can be seen and their impact felt in real terms by others. For the South Sulawesi Regional Revenue Agency (Bapenda), the success of digitalization adoption through the Basul *Mobile* application depends heavily on how transparently and convincingly the benefits are presented to the public through visual communication channels. Data shows that despite 1.2 million people accessing tax information systematically, the reality observed on the ground through the official YouTube channel actually indicates very limited educational reach. This asynchronous approach indicates that the tangible results of application use have not been widely observed by potential users, resulting in a slow diffusion of innovation at the functional level.

The low number of views on technical content, such as Bapenda Sulsel *Mobile*, which only achieved 1,700+ views, reflects the weak *observability dimension* of instruction. Informants revealed a gap between information exposure and operational understanding regarding tax applications. Although outreach through outdoor media (billboards) succeeded in raising awareness, the lack of practical and applicable educational materials triggered user doubts. Respondents considered that tutorial content on YouTube tended to be too formal and lacked *end-to-end demonstrations of transaction procedures*, thus hampering taxpayer confidence in the system's functionality. This statement suggests that without tangible visual demonstrations, digital innovation remains perceived as abstract and high-risk by the public.

The paradox that emerged in this research is the fact that tools to emphasize *observability* are already widely available through social media, yet Bapenda has not yet utilized them strategically. In today's digital age, observability should be enforced through social media algorithms. However, the reliance on organic reach has resulted in uneven distribution of information about this innovation. This is clearly evident from Instagram reach data, which shows that only one piece of content managed to reach 212,000 views, while other educational content remained stuck at significantly lower numbers. This phenomenon of a single successful piece of content indicates that this high visibility was incidental, not the result of a structured and massive promotional scheme.

*observability* barrier also intersects with low functional digital literacy, where people may see information about innovations but don't feel competent to implement them. Data shows that people are more likely to seek information about printing SKKP (Special Tax Return) than about the self-service transaction feature. This signals that the current public narrative still

focuses on what must be paid, rather than how to pay easily. Instructional content is needed that can demystify bureaucratic complexity into micro-steps that can be observed and imitated by all groups, so that application use is no longer considered a specialized skill for a select group.

Ultimately, the primary goal of increasing *observability* is to create new social norms for tax payment. From a sociopsychological perspective, a person will feel left behind if they observe that the majority of their reference group has switched to modern methods. Currently, due to the lack of content featuring organic self-confidence *tests* or social proof from fellow citizens, paying taxes manually at the Samsat office is still considered the norm. Bapenda needs to massively demonstrate that paying taxes digitally is the standard behavior of the progressive South Sulawesi community, thereby creating positive social pressure for those who still cling to old methods.

Data on the high public interest in printing SKKP (10,700 views) reveals that *the observability aspect* most trusted by the public currently remains physical. This indicates a crisis of confidence in the validity of digital evidence in the eyes of the law. Taxpayers feel the need to have physical documents that can be seen and held as protection during roadside inspections. Informants expressed a preference for physical evidence as a legal instrument that is considered more credible. Concerns about digital evidence being rejected by police authorities during roadside inspections reflect low public trust in the legal force of intangible electronic documents. *For taxpayers, conventional validation in the form of a physical stamp provides a more tangible sense of psychological security and legal certainty than digital validation.* This obstacle confirms that digital efficiency is considered not to provide tangible legal guarantees.

*social proof* mechanisms or *peer-to-peer validation* on Bapenda social media platforms results in the loss of the snowball effect in the diffusion process. According to behavioral psychology principles, individuals tend to validate new actions by observing the behavior of their peer groups. If social media content only presents narratives from the perspective of authorities without narratives from real users, positive social pressure will not emerge. People need concrete evidence from others' experiences to reduce skepticism; without it, the convenience offered by the application will remain isolated and unnoticed as a social trend worthy of wider community participation.

The failure to build emotional engagement on Instagram also reflects the rigidity of social media, which should be community-based. Instagram is used like conventional print media, with minimal two-way interaction and discussion space. Yet, the key strength of *observability* in the digital age lies in the democratization of information through dialogue. Without interactive Q&A sessions or the involvement of local *influencers* demonstrating app usage, Bapenda's digital campaign will remain trapped in a cycle of information dissemination, never successfully changing taxpayers' beliefs about the ease of independent transactions.

In conclusion, Bapenda's digital communication strategy must transform from simply informing to demonstrating. Optimizing *observability* through visual social media including through the use of paid advertising features to ensure massive reach is an absolute requirement for accelerating the conversion of tax compliance from manual to digital in South Sulawesi. By highlighting successful transactions and organic social proof, Bapenda can create an environment where the use of Basul *Mobile* is seen as a symbol of modernity with tangible results. This transformation will ensure that digital innovation is no longer considered a dubious alternative but rather a normative necessity whose efficiency and benefits are transparently observable by all levels of society.

## Sociogeographic Inclusiveness

The digital transformation of the South Sulawesi Regional Revenue Agency (Bapenda) faces significant challenges to inclusivity when confronted with the socio-geographic realities of the region. To understand the scale of this challenge, it is necessary to compare areas with network coverage with those still facing challenges. With a total of 3,051 villages and sub-districts spread across South Sulawesi, the presence of 440 villages/sub-districts with "blank spot" status indicates that approximately 14.42% of the area at the grassroots level remains isolated from internet access. This figure confirms that despite the massive digitalization narrative, a significant segment of the population remains technically unable to access mobile app-based tax services.

This inequality creates a condition of Digital Disparity where progress in public services is not felt evenly. Regions with the highest concentration of *blank spots*, such as Pangkep Regency (42 villages), North Toraja (39 villages), and Sinjai (34 villages), generally have geographical barriers in the form of island or mountainous areas that are difficult to reach by Base Transceiver Station (BTS) infrastructure. When compared to the total number of villages in each district, the percentage of these barriers is large enough to disrupt the target of bureaucratic efficiency, because the tax obligations of residents in these areas remain, but the distribution channels are cut off by natural obstacles.

Table 6. Blank spot data for South Sulawesi Province

No	Regency/City	District	Village/Sub-District
1	Makassar City	-	-
2	Bone Regency	3	8
3	Luwu Regency	12	21
4	Jeneponto Regency	6	10
5	Barru Regency	7	27
6	Sinjai Regency	7	34
7	Pangkep Regency	4	42
8	North Luwu Regency	4	23
9	East Luwu Regency	8	10
10	Pare-Pare City	1	1
11	Wajo Regency	7	17
12	Enrekang Regency	5	19
13	Soppeng Regency	8	26
14	Sidrap Regency	4	8
15	Selayar Islands Regency	9	12
16	Bantaeng Regency	7	14
17	Palopo City	3	3
18	Maros Regency	4	25
19	Gowa Regency	7	7
20	North Toraja Regency	17	39
21	Tana Toraja Regency	11	19
22	Takalar Regency	10	18
23	Bulukumba Regency	9	29
24	Pinrang Regency	8	28
<b>Total</b>		<b>161</b>	<b>440</b>

This sociogeographic paradox becomes even more stark when juxtaposed with the previously discussed mobile phone ownership data. Although statistically 93.75% of households own mobile phones, the presence of 14.42% of areas without network coverage creates a situation where people have communication devices but no channels for transmitting data. This proves that the net benefit of reducing physical queues at Samsat offices will never reach 100% as long as infrastructure constraints in these 440 villages remain unaddressed. Hardware accessibility alone has proven insufficient to ensure fair public services in the digital ecosystem.

Therefore, the digital transformation undertaken by the South Sulawesi Regional Revenue Agency (Bapenda) must adopt the principle of Digital *Inclusivity*, which leaves no one behind. In the context of equitable public administration, the existence of these *blank spots* strongly justifies why a hybrid service model that maintains the presence of validator officers or physical service outlets in remote areas is a necessity, not a setback. This strategy is not merely a technical operational matter, but rather an effort to safeguard the constitutional rights of citizens in peripheral areas to continue receiving the same quality of public services as those in city centers.

In conclusion, the effectiveness of a system like *Basul Mobile* in generating net benefits depends heavily on the synchronization of digitalization policies with the availability of network infrastructure on the ground. Significant investments in applications will be diminished if not accompanied by mitigation efforts for the 14.42% of regions still in digital darkness. Therefore, the success of this transformation is measured by the system's ability to engage communities in the 440 villages/sub-districts so they can continue to contribute to regional development through more empathetic mechanisms and guaranteed intensive support.

Recognizing the significant socio-geographical barriers in these 440 villages/sub-districts, the South Sulawesi Provincial Government, through the Communication, Informatics, Statistics, and Cryptography Agency, has not remained silent and has taken strategic mitigation steps. This effort is realized through the official submission of a request for the construction of a *Base Transceiver Station* (BTS) infrastructure to the Ministry of Communication and Informatics of the Republic of Indonesia (This effort was officially realized through the Letter of the Governor of South Sulawesi Number: 046/3725/Diskominfo-SP dated March 18, 2024 concerning the Application for the Construction of a *Base Transceiver Station* (BTS) addressed to the Minister of Communication and Informatics of the Republic of Indonesia) through the Telecommunication and Information Accessibility Agency (BAKTI) program. This administrative step is a form of government commitment in carrying out policy interventions to break down the *blank spot wall* that has been a major obstacle to the equal distribution of digital public services in hard-to-reach areas.

This step of requesting additional BTS is a crucial supporting variable for the sustainability of digital transformation at Bapenda. With the opening of network access in the future, the potential for mobile phone ownership of the public, which reaches 93.75%, can finally be converted into active participation in the digital tax payment ecosystem. In the context of this dissertation, this proactive action by the central and regional governments is seen as an effort to expand the spectrum of Net Benefits so that they are no longer exclusive to urban communities, but rather become an inclusive right for all taxpayers in remote areas of South Sulawesi. The synergy between physical infrastructure development by Kominfo and service system readiness by Bapenda is the main key to ensuring that investments in information technology truly provide maximum impact on increasing PAD and overall bureaucratic efficiency.

The ultimate goal of all digital transformation at the South Sulawesi Regional Revenue Agency (Bapenda) is to achieve net benefits, measured by increased Regional Original Revenue (PAD) and bureaucratic efficiency. However, analysis reveals a crucial intermediary variable: the community's digital literacy level. Advanced technologies, such as the *Basul Mobile application*, which integrates with various payment channels, cannot deliver optimal net benefits if there are gaps in end-user capacity.

Table 7. Digital Literacy Index Data for South Sulawesi Province in 2021

No	Digital Literacy Pillar	South Sulawesi Provincial Score	National Average Score	Category
1	Digital Culture	3.92	3.90	Moderate
2	Digital Safety	3.16	3.10	Moderate
3	Digital Ethics	3.37	3.53	Moderate
4	Digital Skill	3.45	3.44	Moderate
5	Digital Literacy Index	3.47	3.49	Moderate

The 2021 South Sulawesi Digital Literacy Index data (Badan Pusat Statistik, 2022), which scored 3.47 (moderate), with the *Digital Safety pillar* scoring the lowest (3.16), presents a structural barrier to achieving these benefits. Low literacy in digital security aspects fuels skepticism and fear of data misuse, ultimately discouraging taxpayers from fully switching to digital channels despite the system's convenience. Consequently, the net benefits of reducing physical queues at Samsat offices and accelerating regional cash flow are hampered because most people still feel safer using manual services.

This situation emphasizes that net benefits do not automatically arise from the availability of technology, but rather result from the interaction between reliable systems and competent users. Therefore, Bapenda's strategy of strengthening Empathy and Assurance *through* transparent governance (such as achieving SAKIP category A) and the presence of Validator Officers is crucial. This effort is not only to improve data technically, but also to build trust among communities with low digital literacy. Without strong educational interventions and security guarantees to close this literacy gap, significant investments in digital infrastructure risk not providing maximum returns for regional development in South Sulawesi.

Table 8. Percentage of Households Owning/Controlling Fixed Line Telephones and Cellular Telephones According to Regional Classification 2019-2021 (percent)

Signal Reception	Regional Classification	South Sulawesi Province 2019	South Sulawesi Province 2020	South Sulawesi Province 2021	National Average 2019	National Average 2020	National Average 2021
Mobile Phone	Urban	92.43	96.69	96.89	89.45	94.13	93.53
Mobile Phone	Rural	92.06	92.36	91.27	88.63	86.45	86.60
Mobile Phone	Urban + Rural	92.21	92.37	93.75	89.09	90.75	90.54
Fixed Cable Telephone	Urban	1.18	1.63	0.95	3.57	2.83	2.30

Fixed Cable Telephone	Rural	0.24	0.08	0.04	0.21	0.16	0.11
Fixed Cable Telephone	Urban + Rural	0.64	0.79	0.44	2.09	1.65	1.36

The relevance of achieving net benefits in the digital transformation of the South Sulawesi Regional Revenue Agency (Bapenda) is further strengthened by reviewing data on community communication device ownership (Badan Pusat Statistik, 2022). According to statistics, the percentage of households with mobile phones in South Sulawesi in 2021 reached 93.75%, a highly progressive figure, surpassing the national average of 90.54%. This high penetration, both in urban (96.89%) and rural (91.27%) areas, demonstrates that structurally, physical barriers in the form of hardware availability *have* practically disappeared. However, this situation creates a paradox in achieving *Net Benefits* : although almost all taxpayers have devices at their fingertips, the net benefits in the form of bureaucratic efficiency and accelerated local revenue (PAD) through digital channels have not accelerated linearly. This demonstrates that mobile phone ownership is merely a technical prerequisite, while the key to transforming this access into tangible benefits lies in the bridge of digital literacy and security. Without strengthening the security aspect, the high number of mobile phone ownership will only become a potential that is not utilized optimally because people prefer to use their devices for basic activities rather than for public transactions that are considered high risk.

The results of this study reveal a complex sociopsychological and administrative reality behind the digitalization of Motor Vehicle Tax (PKB) in South Sulawesi. The process of disseminating this innovation does not occur in a vacuum, but rather relies on a tug-of-war between bureaucratic governance readiness and community cultural resistance. Overall, the primary supporting factor in governance is rooted in the presence of transformational leadership within Bapenda. Leaders not only enforced the use of applications, but persuasively convinced officials that technology is an instrument for humanizing employees by freeing them from the burden of repetitive clerical administration, transforming them into more strategic service consultants.

Bapenda's internal strength is further strengthened by the intellectual independence managed by the Information Systems Technology Unit (TSI). With a staff composition dominated by undergraduate and postgraduate graduates reaching 85.03%, the organization has sufficient cognitive capacity to independently develop and *troubleshoot* systems without absolute dependence on third parties. This independence is a crucial supporting factor because it provides agility for the agency in adapting application features to the dynamics of local needs in South Sulawesi, while also ensuring more measurable data security within internal controls through the supervision of a competent internal team.

The effectiveness of this governance is also legitimized through various prestigious recognitions that serve as tangible evidence ( *observability* ) of the system's performance. Awards such as the 2024 Best TP2DD for the Sulawesi Region and the Lontara ( *Online Service Without Intermediaries* ) innovation serve as instruments for building public trust. These recognitions are not merely ceremonial trophies, but rather institutional signals confirming that Bapenda's digital service standards meet the qualifications for accountable governance, thus providing quality assurance for potential adopters of innovation at the grassroots level.

From a social perspective, physical access is a significant and progressive factor. Mobile phone penetration, which has reached 93.75%, demonstrates that structurally, information access is

readily available in almost every household, even surpassing the national average. This high mobile phone ownership rate correlates with the public's strong interest in seeking tax information, as evidenced by the 1.2 million data users on the Bapenda Sulsel *Mobile application*. The people of South Sulawesi are socioculturally at an information literacy level, proactively using technology as a transparency tool to independently verify their financial obligations.

However, despite this infrastructure and leadership support, structural barriers rooted in the persistent rigidity of bureaucratic procedures remain. The presence of 17 multi-layered manual SOPs reflects the characteristics of a rigid Weberian bureaucracy and is often perceived by taxpayers as intimidating and administratively complex. While the app promises 5-minute transaction speeds, obstacles arise when procedures still force taxpayers to navigate sequentially across five implementing entities at the Tax Office (Samsat). This rigidity creates a high psychological barrier, with citizens reluctant to initiate digital processes if they are ultimately faced with a tedious maze of manual bureaucracy.

The most fundamental inhibiting factor in governance is the suboptimal database synchronization between the Regional Revenue Agency (Bapenda) and the National Police Registration System (Regional Police). Although Police Regulation No. 7 of 2021 provides a legal framework for electronic validation, the reality on the ground shows a significant bureaucratic gap after the transaction. Taxpayers who have paid digitally are still required to physically visit to obtain a manual validation stamp because the databases are not synchronized in *real time*. This situation undermines the relative advantage of digital innovation, making it appear as a half-baked process that actually increases time burdens and obscures the essence of the efficiency offered by technology.

Turning to social conditions, the low digital safety score of 3.16 presents a significant psychological barrier. The people of South Sulawesi experience a digital paradox; they are very familiar with mobile phones for socio-cultural activities, yet highly skeptical and insecure when it comes to conducting public transactions involving legal and financial data. Fear of personal data leaks or payment system failures makes them more comfortable reverting to manual methods with tangible physical evidence. This low digital risk mitigation competency keeps residents skeptical of the security guarantees of government platforms compared to more established private banking services.

This social barrier is exacerbated by the cultural distance within the app's interface, which still feels cold and technocratic. Despite the use of the word "*iyé*" as a form of local linguistic politeness, the app as a whole fails to deeply engage the sociocultural niches of the Bugis-Makassar-Toraja community. The absence of fundamental values such as *Siri' na Pacce* or the principle of *Sipakatau, Sipakalebbi, Sipakainge* in digital interactions results in the app failing to build emotional closeness. As a result, the digital system remains viewed as a representation of foreign central instructions, rather than an organic product born of the community's own identity.

Furthermore, there's a barrier to the culture of physical legality deeply ingrained in society's collective memory. Citizens tend to trust something tangible and physically tangible as the most valid and irrefutable legal evidence. Unease arises when they only have digital proof of payment when facing police checks on the highway. Collective concerns about the questionable legality of vehicles without a wet stamp on their vehicle registration (STNK) prevent the potentially significant 1.2 million users from ever fully converting into permanently active digital transactors.

Sociogeographic factors also present challenges of access inequality that cannot be ignored. The existence of 440 villages or sub-districts that remain *blank spots* creates a real physical barrier for communities in remote areas. This internet infrastructure barrier automatically categorizes some residents as *laggards*, not because of an ideological rejection of progress, but because of a lack of technical access options. This condition causes the diffusion of innovation to be asymmetrical, where efficiency is enjoyed only by urban residents, while rural residents remain trapped by the inefficiency of expensive manual services due to the long distances required to travel to the Main Samsat.

From a communication channel perspective, barriers arise from the low engagement rate on official social media, which only reaches 0.17%. Messages about the ease of digital innovation have not yet managed to penetrate algorithmic barriers to reach the majority, pragmatic adopters. Without aggressive and targeted digital advertising support to bridge the trust gap, information about the efficiency of digital PKB will remain isolated within a small circle of followers. In conclusion, the success of closing the Rp 951.3 billion *tax gap* depends heavily on the agency's courage to integrate comprehensive data with the police and the ability to build a bridge of trust by guaranteeing the legality of digital evidence that aligns with local wisdom.

## Conclusion

This study concludes that the digital transformation of Motor Vehicle Tax services in South Sulawesi has significant potential to improve taxpayer compliance and support the realization of Regional Original Revenue. Digital services provide clear relative advantages by simplifying rigid manual procedures, reducing service time, and improving accessibility. However, the adoption of digital PKB services is still limited by several barriers, including low public trust in digital proof of payment, incomplete data integration between institutions, uneven digital literacy, and socio-geographic gaps in internet access. The high number of users who access tax information has not yet been followed by proportional digital payment transactions, indicating that public readiness must be strengthened through clearer communication, legal certainty, and user-friendly service design. Therefore, the success of digital PKB transformation depends not only on technological availability, but also on institutional coordination, digital leadership, public education, cultural compatibility, and inclusive service strategies for areas with limited digital infrastructure.

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