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Human factors in smart governance: The role of trust, experience, and perceived usefulness in shaping e-government intention to use

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Abstract
In many local government digital services, low adoption rates are often driven by limited user confidence in system reliability and difficulties in navigating online platforms. As licensing processes increasingly shift to digital environments, understanding the behavioral factors that shape citizen acceptance becomes critical to achieving efficient, transparent public service delivery. Within a smart governance framework, this study examines how user trust and user experience influence intention to use the Surabaya Single Window (SSW) Alfa digital licensing system, with perceived usefulness as a mediating variable. A quantitative explanatory survey of 200 users was analyzed using path and Sobel tests. The findings indicate that trust and user experience significantly enhance perceived usefulness and intention to use, while perceived usefulness partially mediates these relationships. The results highlight that effective and sustainable smart governance depends not only on technological functionality but also on institutional trust and positive user engagement to sustain long-term citizen adoption.

Keywords: Trust, User Experience, Perceived Usefulness, Intention to Use, Smart Governance

Abstrak
Pada banyak layanan digital pemerintah daerah, rendahnya tingkat adopsi sering kali disebabkan oleh terbatasnya kepercayaan pengguna terhadap keandalan sistem serta kesulitan dalam menavigasi platform daring. Seiring dengan semakin bergesernya proses perizinan ke lingkungan digital, pemahaman terhadap faktor-faktor perilaku yang membentuk penerimaan warga menjadi krusial untuk mewujudkan pelayanan publik yang efisien dan transparan. Dalam kerangka smart governance, penelitian ini menganalisis bagaimana kepercayaan pengguna dan pengalaman pengguna memengaruhi niat menggunakan sistem perizinan digital Surabaya Single Window (SSW) Alfa, dengan perceived usefulness sebagai variabel mediasi. Survei kuantitatif eksplanatori terhadap 200 pengguna dianalisis menggunakan uji jalur dan uji Sobel. Hasil penelitian menunjukkan bahwa kepercayaan dan pengalaman pengguna secara signifikan meningkatkan perceived usefulness dan niat menggunakan, sementara perceived usefulness memediasi hubungan tersebut secara parsial. Temuan ini menegaskan bahwa smart governance yang efektif dan berkelanjutan tidak hanya bergantung pada fungsi teknologi, tetapi juga pada kepercayaan institusional dan kualitas interaksi pengguna dalam mendorong adopsi warga secara jangka panjang.

Kata kunci: Kepercayaan, Pengalaman pengguna, Persepsi Kegunaan, Niat penggunaan, Tata Kelola Cerdas

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1. Introduction

Digital transformation in public services has become a strategic priority for the Indonesian government, particularly in Surabaya, one of the nation's leading smart cities. A smart city integrates information and communication technology (ICT) to enhance governance effectiveness, sustainability, and citizens' quality of life through collaboration among government, private sectors, and communities (Liu et al., 2024). Within this broader transformation, smart governance extends beyond traditional e-government by embedding ICT-enabled service delivery within a governance paradigm that emphasizes innovation, citizen engagement, interoperability, and accountability to generate public value grounded in political legitimacy, societal values, and evidence-based decision-making (Anthopoulos et al., 2021). While e-government primarily functions as a technological instrument for digitalizing administrative processes, smart governance represents a broader institutional framework that integrates digital systems with participatory and value-oriented governance mechanisms. Within this broader smart governance framework, integrated digital service platforms serve as institutional instruments that translate governance principles into operational practice. The Surabaya Single Window (SSW) Alfa represents such an implementation by consolidating licensing and retribution services into a unified digital system intended to enhance transparency, efficiency, and administrative coordination. Figures 1 illustrate the SSW Alfa homepage (https://sswalfa.surabaya.go.id) to depict its interface and accessibility.

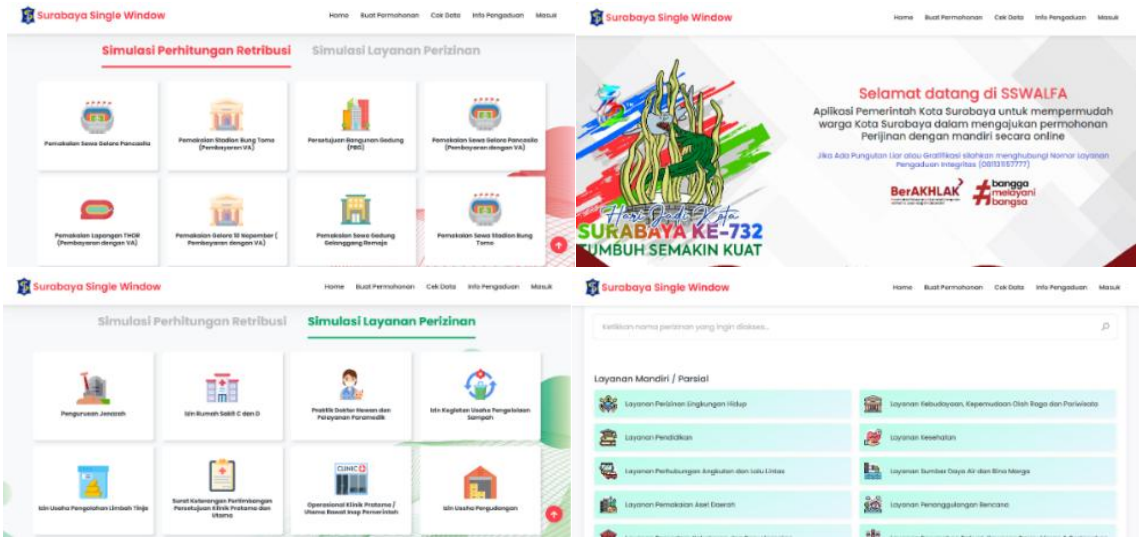

Figure 1. Interface of the Surabaya Single Window Alfa application

SSW Alfa integrates licensing and retribution services into a single platform, offering features such as file tracking, online updates, permit downloads, and simulation tools. The 'Buat Permohonan' menu provides 20 service categories with transparent requirements and procedures intended to facilitate efficient digital public services. Since its launch on August 1, 2021, SSW Alfa has processed thousands of submissions; however, 1,380 applications were recorded as incomplete and 297 experienced delays (Dinas Komunikasi dan Informatika Kota Surabaya, 2021). These figures indicate that a considerable portion of applications did not proceed smoothly

through the digital system, reflecting operational inefficiencies that may undermine user confidence and satisfaction. Such conditions suggest that the mere availability of an integrated digital platform does not automatically ensure effective service delivery, thereby posing challenges to the sustainability of smart governance initiatives.

Recent evaluative research has reported that the implementation of SSW Alfa has significantly improved efficiency, effectiveness, transparency, and accountability in public service delivery, supported by features such as audit trails, security systems, and comprehensive licensing guidelines. The system has also been recognized for simplifying access to 563 types of licensing and non-licensing services across 21 local government agencies. Nevertheless, several aspects still require improvement, including transparency in the issuance of licensing decrees, the absence of written sanctions for service negligence, and the lack of backup data warning features. These findings indicate that while the platform demonstrates institutional and procedural strengths, certain operational and communicative dimensions remain subject to refinement (Adzani et al., 2025). Prior studies have also identified limitations in user trust concerning data security and transparency (Anantha, 2024), while persistent response delays have been shown to reduce user satisfaction and perceived service reliability (Mastur, 2024). Collectively, these findings suggest that although the system has achieved notable administrative improvements, variations in user trust and experience may still shape how citizens evaluate and adopt the platform.

This gap between institutional performance indicators and individual user acceptance raises important questions regarding the sustainability of smart governance implementation. While institutional evaluations emphasize procedural efficiency and accountability, the long-term sustainability of digital public services ultimately depends on how citizens perceive and experience the system. Administrative performance indicators alone do not fully capture the human factors that shape continued usage intention. Therefore, understanding how trust and user experience influence perceived usefulness becomes essential in explaining the adoption dynamics of integrated smart governance platforms such as SSW Alfa.

Understanding this gap requires examining the behavioral and perceptual determinants that shape citizens' intention to use digital public services. Among the most critical factors are user trust and user experience. Trust reduces uncertainty and strengthens technology acceptance by enhancing perceptions of security, transparency, and institutional credibility (Hartanti et al., 2021). In digital governance contexts, trust functions not only as a belief in system integrity but also as a relational mechanism that legitimizes citizen engagement. Meanwhile, user experience reflects individuals' overall interaction quality with digital systems, including usability, responsiveness, and emotional responses. A positive user experience contributes to reuse intention by strengthening perceived usefulness (PU), which shapes cognitive evaluation and behavioral intention (Lewis & Sauro, 2024). These relationships are grounded in the Technology Acceptance Model (TAM), which posits that perceived usefulness and perceived ease of use are key determinants of technology adoption. Perceived usefulness, defined as the extent to which individuals believe that using a

system enhances their performance, has consistently been shown to predict behavioral intention.

In e-government contexts, perceived usefulness often mediates the effects of external variables, such as trust and facilitating conditions, on intention to use (Chen & Aklikokou, 2020). Likewise, perceived usefulness remains a central determinant of adoption in digital public service systems (Wiprayoga & Widagda, 2023). However, prior studies have frequently examined these determinants separately or within commercial digital platforms, leaving limited empirical evidence on how relational factors (trust) and experiential factors (user experience) simultaneously shape intention to use through perceived usefulness in integrated smart governance systems. This gap is theoretically significant because smart governance requires not only technological integration but also sustained citizen acceptance. While many smart city initiatives are evaluated from technological or administrative perspectives, limited attention has been given to the psychological mechanisms that translate digital implementation into sustained usage intention.

In the case of SSW Alfa, the presence of incomplete submissions, service delays, and trust-related concerns suggests that technological integration alone does not guarantee effective utilization. Instead, adoption may depend on how citizens cognitively evaluate the usefulness of the system and whether trust and user experience reinforce this evaluation. Accordingly, this study proposes and empirically tests a structural model that examines both the direct and mediating roles of perceived usefulness in the relationships between user trust, user experience, and intention to use within the SSW Alfa platform. Specifically, this study hypothesizes that user trust and user experience positively influence perceived usefulness; that user trust, user experience, and perceived usefulness each positively influence intention to use; and that perceived usefulness mediates the relationships between user trust and intention to use as well as between user experience and intention to use. By testing these relationships, this study aims to contribute to the literature on smart governance by clarifying the cognitive and relational mechanisms that drive citizens' engagement with integrated digital public service platforms.

2. Literature Review

Technology Acceptance Model (TAM)

Prior studies within the Technology Acceptance Model (TAM) generally identify perceived usefulness as a central mechanism through which various antecendent factors influence individuals' intention to use a technology. In the context of e-government adoption, trust in government institutions and prior user experience are commonly conceptualized as key human factors influencing users' interaction with digital public services (Amoah et al., 2023). Users who feel confident in the system and are familiar with digital services tend to evaluate e-government platforms as more beneficial, leading to higher perceptions of usefulness (Zubir & Abdul Latip, 2024). Empirical evidence in technology adoption studies suggests that perceived usefulness functions as a mediating mechanism, while certain antecedents may retain a direct

influence on intention (Nookhao et al., 2025). This theoretical openness provides the basis for the research framework of the present study, which examines whether perceived usefulness functions solely as a mediating mechanism or also operates as an independent explanatory factor in shaping e-government adoption within smart governance contexts.

Smart Governance as Context of E-Government Adoption

Smart governance refers to the integration of digital technologies, data-driven decision-making, and participatory governance practices to enhance the quality, transparency, and efficiency of public administration (Giuliodori et al., 2023). Within this framework, e-government functions as a primary operational instrument through which governments deliver digital public services and facilitate citizen engagement (Kuzior et al., 2023). The effectiveness and sustainability of e-government initiatives are closely associated with citizens' willingness to adopt and use these digital services (Aleisa, 2024).

User Trust

Trust in digital systems derives from users' confidence in a technology's ability to perform reliably and provide meaningful value (Balakrishnan & Dwivedi, 2021). It reflects users' belief in system reliability and integrity, shaped by consistent interactions and transparent data practices (Joshi, 2025). Trust fosters satisfaction and loyalty through quality, security, and clear communication (Qatawneh et al., 2024). Conversely, declining trust reduces intention to use, highlighting the need for simplicity and equitable accessibility (Iman et al., 2022).

The indicators of User Trust in this study are as follows: Reliability (Saoula et al., 2023), refers to users believing system operates consistently and accurately. Security and Privacy (Alzahrani et al., 2017), reflect users' confidence personal data is protected from misuse. Transparency (Khan et al., 2023), refers to system providing clear, open information about procedures.

User Experience

User Experience (UX) refers to users' overall interaction quality with an application, encompassing comfort, ease of use, aesthetics, and functionality (Jeong et al., 2016). Responsiveness, through clear cues and fast responses enhances interaction smoothness (Doherty & Sorenson, 2015), while appealing aesthetics strengthen satisfaction and credibility (Koranteng et al., 2022). Effective error recovery supports confidence and reinforces positive service evaluation (Andreasson & Gunnarsson, 2024), ultimately driving continued engagement (Schrills et al., 2024).

The indicators of User Experience in this study are as follows: Responsiveness (Fath et al., 2024), refers to system providing fast, accurate responses for user interactions. Aesthetics (Odushegun, 2023), refers to visually appealing, consistent, and understandable interface design. Error Recovery (Alghofaili et al., 2024), refers to system helping users identify, correct, and recover from errors.

Perceived Usefulness

Perceived usefulness reflects users' belief that a technology enhances work performance and accuracy (Putra et al., 2020), simplifies tasks, and improves efficiency (Tahar et al., 2020). It represents confidence that digital systems strengthen job effectiveness and operational productivity (Makbul et al., 2025). The indicators of Perceived Usefulness in this study are outlined as follows: Job Performance (Omar et al., 2019), refers to technology enhancing users' work effectiveness and accuracy. Make job easier (Susanto & Aljoza, 2015), refers to technology simplifying tasks, reducing effort, improving efficiency.

Intention to Use

Intention to Use represents a key outcome in technology adoption, reflecting users' psychological motivation to engage with a system (Singh & Sinha, 2020). It indicates individuals' inclination to utilize technology, expressing acceptance of digital innovation (Joo et al., 2018). This intention arises as an internal drive preceding actual behavior, shaped by positive attitudes, perceived usefulness, and social influence (Agmeka et al., 2019). Positive attitudes involve favorable evaluations and judgments, strengthening users' willingness to adopt technology (R. L. Sari et al., 2022).

The indicators of Intention to Use in this study are outlined as follows: Behavioral Intention (Buabeng-Andoh, 2018), refers to individual's desire and plan to adopt technology. Adoption Willingness (Flavián et al., 2022), refers to user's readiness to transition from manual to digital systems. Continuance Intention (Tam et al., 2020), refers to intention to continue using application after initial experience.

The Effect of User Trust on Perceived Usefulness

User trust plays a vital role in shaping individuals' perceptions of a system's usefulness. When users believe that a system is functionality, reliability, and helpfulness, they tend to perceive it as more beneficial and supportive of their tasks (Marella et al., 2020). Similarly, research on AI-based applications indicates that perceived trust and social influence significantly shape users' evaluation of a technology's usefulness (Kılıç & Çelik, 2025). Trust also strengthens psychological assurance and perceived value, which in turn enhance users' perception of usefulness and engagement with digital systems (Amrollahi et al., 2024).

H1: User Trust has a positive and significant effect on Perceived Usefulness.

The Effect of User Experience on Perceived Usefulness

User experience represents the overall quality of users' interaction with a digital system, and improvements in information, service, and system quality have been shown to increase perceived usefulness (Fedorko et al., 2018). A positive experience marked by trust, aesthetic design, and usability enhances perceived usefulness, as users adopt systems they find satisfying and reliable (Bubaš et al., 2024). Therefore, a well-designed and enjoyable user experience strengthens perceived usefulness by fostering user confidence and appreciation toward the technology (Oyibo & Morita, 2022).

H2: User Experience has a positive and significant effect on Perceived Usefulness.

The Effect of User Trust on Intention to Use

User trust reflects users' belief in a system's reliability, security, and data protection, influencing intention to use (Ghanem et al., 2020). Trust from system reliability and humanlike interaction strengthens user confidence and engagement (Hsu & Lee, 2023). Perceived privacy, transparency, and protection significantly increase behavioral intention (Tan et al., 2024). Higher trust enhances readiness and motivation to adopt and continue usage (Gao & Li, 2021).

H3: User Trust has a positive and significant effect on Intention to Use.

The Effect of User Experience on Intention to Use

User experience indicators also increase users' intention to use technology. In this context, a responsive system enhance efficiency and comfort (Saragih et al., 2025), while visually appealing interfaces strengthen users' emotional engagement (J. Xu et al., 2024). Effective error recovery strengthens confidence and reduces frustration, encouraging continued technology use (Zardari et al., 2021).

H4: User Experience has a positive and significant effect on Intention to Use.

The Effect of Perceived Usefulness on Intention to Use

Perceived Usefulness significantly influences users' intention to adopt technology (Papakostas et al., 2021). Users perceiving practical system benefits show stronger intention to use digital services (Usman et al., 2024). Moreover, user trust indirectly affects intention to use through perceived usefulness (Li & Xue, 2021), since trusted systems are viewed as more reliable and beneficial, thereby fostering continued engagement (Kathuria et al., 2020). Similarly, user experience enhances perceived usefulness through interactive features and prior satisfaction (C. Xu et al., 2022), thereby strengthening users' intention to continue using technology (Akdim et al., 2022). Overall, Perceived Usefulness directly affects intention to use and mediates the impact of User Trust and Experience.

H5: Perceived Usefulness has a positive and significant effect on Intention to Use.

H6: User Trust has a positive and significant effect on Intention to Use through Perceived Usefulness as a mediating variable.

H7: User Experience has a positive and significant effect on Intention to Use through Perceived Usefulness as a mediating variable.

3. Research Method

This study employed a quantitative explanatory survey design to examine the hypothesised relationships among user trust, user experience, perceived usefulness, and intention to use digital public services (M. Sari et al., 2022). The quantitative approach was selected to facilitate statistical examination of direct and indirect relationships among variables through regression-based path analysis, performed using IBM SPSS Statistics version 23. The population comprised SSW Alfa users of the Surabaya Single Window (SSW) Alfa platform. In the absence of publicly available data on the exact number of active SSW Alfa users, the total population of Surabaya in 2024 (3,018,022 residents) was used as a demographic reference (Dinas Kependudukan dan Pencatatan Sipil Kota Surabaya, 2025).

Given the lack of an official sampling frame identifying verified platform users, a two-stage non-probability sampling approach was adopted (Yusoff et al., 2023). First, purposive sampling was applied to ensure that respondents met predefined inclusion criteria: residing in Surabaya, being aware of SSW Alfa, and having previously used the platform (Wahyudiono et al., 2024). Second, convenience and snowball sampling techniques were employed to distribute the online questionnaire via social media platforms, MSME networks, university communities, and public service communication channels (Huy & Phuc, 2024). Although non-probability sampling may limit generalizability, this approach was considered appropriate due to the absence of a verified user database and the digital nature of the target population.

The minimum sample size was determined using Cochran's formula for large populations (Odiwo et al., 2023). Given the total population of Surabaya in 2024 (3,018,022 residents), a 95% confidence level (Z = 1.96), a proportion estimate of 0.05 to maximise variability, and a margin of error of 7%, the required minimum sample size was calculated to be approximately 196 respondents. This threshold was exceeded with 200 valid responses, ensuring adequate statistical power for subsequent regression and mediation analyses. The selected margin of error was deemed acceptable in balancing statistical precision with practical constraints in accessing confirmed users of the platform. Data were collected through an online questionnaire using a five-point Likert-scale ranging from 1 (strongly disagree) to 5 (strongly agree), adapted from previously validated instruments (Tanujaya et al., 2022). The instruments consisted of 22 items: six items measuring User Trust (three indicators, two items each), six items measuring User Experience (three indicators, two items each), four items measuring Perceived Usefulness (two indicators, two items each), and six items measuring Intention to Use (three indicators, two items each). Minor contextual adjustments were made to align the wording of items with the SSW Alfa platform while maintaining the original construct meanings. Prior to distribution, the questionnaire was reviewed to ensure clarity and relevance to the local context.

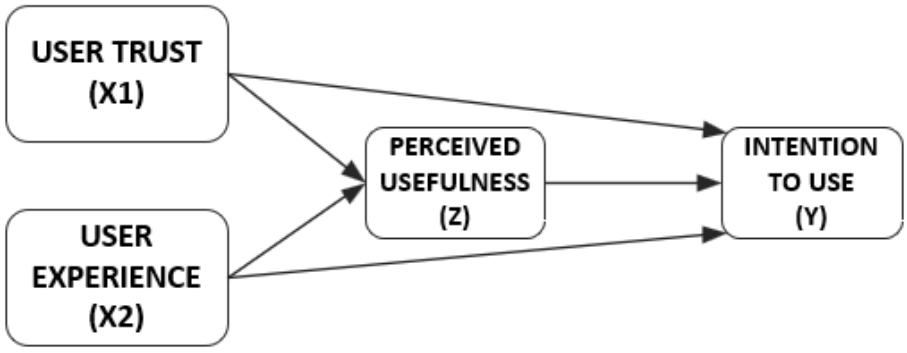

Figure 2. Research Model

Data analysis was conducted in several stages to ensure the robustness of the regression results. The analysis began with descriptive statistics to summarise respondents' characteristics and perceptions of each construct. Data quality was assessed through validity and reliability testing. Item validity was evaluated using corrected item-total correlations, with coefficients exceeding the critical value at the 0.5

significance level considered acceptable (Anggraini et al., 2022). Internal consistency reliability was assessed using Cronbach's Alpha, with values above 0.70 indicating acceptable reliability (Sigudla & Maritz, 2023). Classical assumption tests, including normality, multicollinearity, and heteroscedasticity tests, were performed to ensure the adequacy of the regression model (Mardiatmoko, 2020).

Furthermore, Path analysis based on multiple regression was subsequently applied to examine direct and indirect relationships among variables. Mediation effects were evaluated by examining changes in the direct effect after the inclusion of the mediator (Asyhari et al., 2018), and the significance of indirect effects was further tested using the Sobel test (Herlina & Diputra, 2018). Two structural equations were estimated: the first assessed the effects of User Trust and User Experience on Perceived Usefulness, and the second analysed the combined effects of User Trust, User Experience, and Perceived Usefulness on Intention to Use.

4. Results and Discussion

4.1. Results

Respondent Characteristics

This study involved 200 respondents who participated in the survey. The majority of respondents were female (59.5%, n = 119), while male respondents accounted for 40.5% (n = 81). Most respondents were aged between 26 and 33 years (45.5%), and among the 31 districts in Surabaya, the largest proportions of respondents resided in Bulak (10%) and Gunung Anyar (8.5%) districts. The detailed distribution of respondent characteristics is presented in Appendix 1.

Validity and Reliability Test

Table 1. Result of Validity Test

Indicator	r-value	Indicator	r-value	Indicator	r-value	Indicator	r-value
X1.1	0.735	X2.1	0.759	Z1	0.770	Y1	0.735
X1.2	0.758	X2.2	0.764	Z2	0.729	Y2	0.690
X1.3	0.764	X2.3	0.767	Z3	0.726	Y3	0.693
X1.4	0.761	X2.4	0.765	Z4	0.737	Y4	0.678
X1.5	0.798	X2.5	0.779			Y5	0.652
X1.6	0.767	X2.6	0.798			Y6	0.750

Note: r table 0.139

Based on Table 1, it can be seen that the statement items from the independent variables User Trust (X1) and User Experience (X2), the mediating variable Perceived Usefulness (Z), and the dependent variable Intention to Use (Y) show that the calculated r-value is > r-table value, indicating that all items of these variables are valid.

Table 2. Result of Reliability Test

Variable	Number of Items	Cronbach's Alpha
User Trust (X1)	6	0.857
User Experience (X2)	6	0.864
Perceived Usefulness (Z)	4	0.724
Intention to Use (Y)	6	0.791

Based on Table 2, it can be seen that the Cronbach's Alpha values for the variables User Trust (X1), User Experience (X2), Perceived Usefulness (Z), and Intention to Use (Y) are all greater than 0.7, indicating that each variable demonstrates acceptable reliability.

Classical Assumption Test

Table 3. Normality Test of Regression Residuals

Equation	N	Asymp. Sig. (2 tailed)	Conclusion
1	200	0.200	Normal
2	200	0.063	Normal

The normality test was conducted on the unstandardized residuals of both regression models using the Kolmogorov-Smirnov test. The results show Asymp. Sig. values of 0.200 and 0.063, respectively. Since both values exceed 0.05, the residuals are normally distributed, indicating that the normality assumption is fulfilled.

Table 4. Result of Multicollinearity Test

Equation	Variable	Tolerance	VIF
Dependent: 1	Perceived Usefulness		
	User Trust	0.968	1.033
	User Experience	0.968	1.033
Dependent: 2	Intention to Use		
	User Trust	0.802	1.247
	User Experience	0.754	1.326
	Perceived Usefulness	0.626	1.597

The multicollinearity test results demonstrated that all predictors meet the required thresholds, with tolerance values above 0.10 and VIF values below 10. Specifically, VIF values range from 1.033 to 1.597, indicating a very low level of collinearity among the independent variables. Therefore, multicollinearity is not a concern in both regression models.

Table 5. Result of Heteroscedasticity Test

Equation	Variable	Sig.
Dependent: 1	Perceived Usefulness	
	User Trust	0.968
	User Experience	0.968
Dependent: 2	Intention to Use	
	User Trust	0.802
	User Experience	0.754
	Perceived Usefulness	0.626

The heteroscedasticity test was conducted using the Glejser test. The results indicate that all independent variables in both regression models have significance values greater than 0.05. Therefore, there is no indication of heteroscedasticity, and the regression models meet the homoscedasticity assumption.

Coefficient of Determination Test

The Adjusted R Square value for Model 1 is 0.367 (Table 6), indicating that User Trust and User Experience explain 36.7% of the variance in Perceived Usefulness. Meanwhile, Model 2 shows an Adjusted R Square value of 0.608, suggesting that User Trust, User Experience, and Perceived Usefulness collectively explain 60.8% of the

variance in Intention to Use. These results demonstrate that the proposed model has moderate to strong explanatory power.

Table 6. Result of Coefficient of Determination Test

Model	Adjusted R Square
1	0.367
2	0.608

Hypothesis Test

Table 7. Result of Hypothesis Test

Variable	Coefficients	t value	Sig.	Hypothesis
Dependent: Perceived Usefulness				
User Trust	0.366	6.389	0.000	H1 Accepted
User Experience	0.429	7.484	0.000	H2 Accepted
Dependent: Intention to Use				
User Trust	0.341	6.886	0.000	H3 Accepted
User Experience	0.360	7.038	0.000	H4 Accepted
Perceived Usefulness	0.330	5.881	0.000	H5 Accepted
Sobel test: dependent Intention to Use, and mediation Perceived Usefulness				
User Trust	0.469	4.068	0.000	H6 Accepted
User Experience	0.502	3.997	0.000	H7 Accepted

The regression analysis results demonstrate that User Trust and User Experience significantly influence Perceived Usefulness, supporting H1 and H2. Furthermore, User Trust, User Experience, and Perceived Usefulness significantly affect Intention to Use, confirming H3, H4, and H5. The Sobel test results further indicate that Perceived Usefulness partially mediates the relationship between User Trust and Intention to Use as well as between User Experience and Intention to Use, supporting H6 and H7.

4.2. Discussion

Trust and User Experience as Determinants of Perceived Usefulness

The results indicate that Trust significantly influences Perceived Usefulness, suggesting that citizens' confidence in SSW Alfa shapes their cognitive evaluation of its benefits. This finding reinforces technology-based trust theory. Marella et al. (2020) posit that reliability, transparency, and structural assurance foster confidence in digital systems. Within the Extended TAM perspective, Kılıç and Çelik (2025) explain that trust operates as an antecedent that enables positive usefulness perceptions. In digitally mediated public services, however, trust extends beyond a psychological disposition; Amrollahi et al. (2024) emphasize that it functions as a mechanism for uncertainty reduction in risk-laden environments where users submit personal data and process legally binding permits without face-to-face interaction. In Smart Governance frameworks, digital platforms are expected to enhance transparency, accountability, and service responsiveness. Within this perspective, perceived usefulness reflects not only functional efficiency but also citizens' evaluation of institutional integrity and procedural reliability. Accordingly, when citizens trust the structural reliability of SSW Alfa, they are more likely to interpret its services as effective and beneficial.

User Experience also demonstrates a significant effect on Perceived Usefulness, confirming that experiential interaction forms the basis of evaluative judgments in

technology adoption. Fedorko et al. (2018) conceptualize UX-related attributes, such as system quality, information quality, and technological features as external determinants shaping perceived usefulness within modified TAM frameworks. More recent perspectives by Bubaš et al. (2024) emphasize that usability, design appeal, and system reliability constitute the experiential foundation of cognitive evaluation. In high-risk digital public contexts, Oyibo and Morita (2022) further explain that UX design attributes influence evaluative perceptions where privacy and uncertainty concerns are salient. Framed within Smart Governance, usefulness is constructed not only through technical efficiency but through experiential signals of procedural clarity, responsiveness, and administrative reliability. Unlike private-sector platforms where convenience may dominate evaluation, digital public governance systems require experiential qualities that signal transparency and institutional competence. Therefore, the significant influence of User Experience in this study underscores the central role of interaction quality in shaping perceived value within digitally delivered public services.

Determinants of Intention to Use in Digital Public Services

The findings indicate that User Trust significantly influences Intention to Use, confirming that citizens' confidence in SSW Alfa directly shapes their willingness to adopt the platform. Prior studies across digital contexts consistently position trust as a key driver of behavioral intention. In public-sector information systems, Ghanem et al. (2020) demonstrated that trust directly affects usage intention and mediates the influence of system qualities, highlighting its institutional role in reducing uncertainty. From a psychological interaction perspective, Hsu and Lee (2023) conceptualized trust as an internal evaluative state within the stimulus-organism-response framework that translates into continued usage intention. Similarly, within the mobile payment context, Tan et al. (2024) confirmed that perceived trust positively predicts intention to use, although it may not function as a strict threshold condition. Within Smart Governance, however, trust assumes a more structural and institutional significance. Public digital services involve administrative authority, legal implications, and sensitive data exchange, making institutional integrity central to adoption decisions. In such environments, trust functions as both a risk-reduction mechanism and a legitimacy enabler that supports citizens' behavioral commitment to digital public services. Therefore, the significant effect of User Trust in this study reinforces the argument that the success of smart governance initiatives depends not only on technological performance but also on the establishment of institutional confidence in digitally mediated governance systems.

Empirical evidence across contexts confirms that User Experience significantly shapes behavioral intention, yet its dominant dimension varies. In digital public services, Saragih et al. (2025) show that functional attributes – ease of use, accessibility, reliability, and interface design – drive intention, while affective elements are insignificant, reinforcing a Diffusion of Innovations perspective where perceived system attributes determine adoption. Conversely, in creative AI environments, Xu et al. (2024) find emotional experience to be the strongest predictor of continuance

intention, positioning UX as an affective-cognitive foundation within ECM and TAM. Meanwhile, Zardari et al. (2021) demonstrate that UX influences intention primarily through satisfaction in e-learning adoption. Within Smart Governance, where citizens prioritize reliability and administrative certainty over hedonic engagement, functional UX becomes a structural enabler of digital service adoption.

The results of this study also revealed that perceived usefulness has a significant effect on intention to use. Theoretically, this finding reaffirms the central proposition of the Technology Acceptance Model developed by Fred Davis (1989), which posits that perceived usefulness is a primary cognitive determinant of behavioral intention (Han & Sa, 2022). Empirically, this result is consistent with Papakostas et al. (2021), who identified perceived usefulness as the strongest predictor of behavioral intention within an extended TAM framework in a high-risk professional context. Their findings suggest that when technology is directly linked to performance outcomes, users prioritize its functional value over mere operational simplicity. Framed within the context of smart governance, the present study implies that citizens' intention to adopt digital public systems is driven less by ease of use and more by the perceived capacity of the system to enhance service effectiveness, administrative efficiency, and overall governance performance. In this sense, perceived usefulness functions as a rational evaluative mechanism that aligns technological adoption with performance-oriented governance logic, thereby reinforcing the continued relevance of TAM in explaining public-sector technology acceptance, while demonstrating that its core constructs acquire institutional and governance-related meaning in digitally mediated public administration contexts.

The Mediating Role of Perceived Usefulness

The results confirm that perceived usefulness plays a partial mediating role in the relationships between user trust, user experience, and intention to use, indicating the coexistence of cognitive and relational mechanisms in digital technology adoption. For H6, perceived usefulness partially mediates the effect of user trust on intention to use. User trust significantly enhances perceived usefulness, which subsequently strengthens intention, while the direct effect of trust remains significant. This pattern demonstrates that trust operates through a dual-path structure: it reinforces users' rational evaluation of system utility and simultaneously exerts a direct relational influence on behavioral intention. These findings are consistent with Li and Xue (2021) and Kathuria et al. (2020), who emphasize the central role of trust in shaping digital service adoption. However, unlike earlier e-government studies that identified full mediation mechanisms, where trust influenced intention only through perceived usefulness and satisfaction the present study reveals a stronger structural role of trust. In the context of smart governance, this suggests that trust is not merely an antecedent belief that must be cognitively translated into usefulness, but also a foundational institutional mechanism that directly legitimizes citizens' engagement with digital public services.

Similarly, for H7, perceived usefulness partially mediates the relationship between user experience and intention to use. User experience significantly increases

perceived usefulness, which in turn enhances intention, while its direct effect remains significant. This finding aligns with prior research integrating the Technology Acceptance Model with experiential perspectives. C. Xu et al. (2022) demonstrated that interactivity and social presence strengthen perceived usefulness and subsequently drive behavioral intention, with usefulness exerting a stronger effect than ease of use. Likewise, Akdim et al. (2022) found that perceived usefulness is a dominant predictor of continuance intention in social mobile applications, particularly in utilitarian contexts. These studies support the argument that experiential quality must be cognitively evaluated as beneficial before it translates into sustained usage intention.

Overall, the partial mediation findings highlight that perceived usefulness functions as a rational conversion mechanism within smart governance ecosystems. Trust and user experience do not automatically generate adoption; rather, they enhance intention by strengthening citizens' belief that digital public services deliver tangible performance benefits. At the same time, the persistence of significant direct effects indicates that relational legitimacy (trust) and experiential quality (user experience) retain intrinsic motivational power beyond cognitive evaluation alone. Therefore, effective smart governance implementation requires an integrated governance – technology alignment in which institutional trust, experiential quality, and perceived functional value operate simultaneously to sustain citizens' engagement with digital public systems.

5. Conclusion

This study demonstrates that the sustainability of digital public services within smart governance frameworks is fundamentally shaped by human-centered mechanisms. Trust and user experience significantly influence perceived usefulness, which in turn drives citizens' intention to use SSW Alfa, while trust and user experience also retain direct motivational power. These findings indicate that digital public service adoption is not solely determined by technological performance or administrative efficiency, but by the interplay between relational legitimacy, experiential quality, and rational evaluation of functional value.

In the context of smart governance, this suggests that institutional success depends not only on structural integration and procedural transparency, but also on citizens' confidence and lived interaction with the system. Therefore, governments should pursue an integrated strategy that strengthens institutional trust, enhances experiential quality, particularly responsiveness and error recovery and ensures that the functional benefits of digital services are clearly perceived, thereby sustaining long-term citizen engagement in digitally mediated governance systems.

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Appendix 1. Respondent Characteristics

Characteristics	Category	Frequency	Percentage
Gender	Male	81	40.5
	Female	119	59.5
Age	17-25	88	44
	26-33	91	45.5
	34-41	14	7
	42-49	6	3
	≥ 50	1	0.5
Districts in Surabaya City	Asemrowo	6	3
	Benowo	7	3.5
	Bulak	20	10
	Dukuh Pakis	9	4.5
	Gayungan	3	1.5
	Genteng	8	4
	Gubeng	16	8
	Gunung Anyar	17	8.5
	Jambangan	7	3.5
	Karangpilang	8	4
	Kenjeran	6	3
	Krembangan	2	1
	Lakarsantri	3	1.5
	Mulyorejo	3	1.5
	Pabean Cantian	4	2
	Pakal	2	1
	Rungkut	3	1.5
	Sambikerep	13	6.5
	Sawahan	2	1
	Semampir	7	3.5
	Simokerto	10	5
	Sukolilo	8	4
	Sukomanunggal	4	2
	Tambaksari	5	2.5
	Tandes	5	2.5
	Tenggilis Mejoyo	4	2
	Wiyung	3	1.5
	Wonocolo	6	3
	Wonokromo	4	2
	Tegalsari	2	1
	Bubutan	3	1.5
	Total	200	100.0