SOCIAL MEDIA ANALYSIS AND SERVICE INNOVATION ON SATISFACTION WITH TRUST AS AN INTERVENING VARIABLE AT THE POPULATION SERVICE AND CIVIL REGISTRATION OFFICE OF MEDAN CITY

Lusianna Banurea[1], Mesra B[2], Elfitra Desy Surya[3]
[1] Master's Student in Management, Panca Budi University
[2,3] Master of Management, Panca Budi Development University
Corresponding Author: mesrab@dosen.pancabudi.ac.id

Abstract

Digital transformation encourages public service agencies to optimize social media and service innovation to improve satisfaction by strengthening trust. This study analyzes the influence of social media and service innovation on public satisfaction with trust as an intervening variable at the Population and Civil Registration Office of Medan City. The method used is quantitative with a sample of 98 respondents (service users in the last 12 months). Primary data were collected through questionnaires and analyzed using PLS-SEM (SmartPLS). The instruments met the requirements for convergent validity (outer loadings ≥ 0.60; AVE ≥ 0.552) and reliability (Cronbach's Alpha ≥ 0.723; CR ≥ 0.829). The results show that social media has a positive and significant effect on satisfaction ($\beta=0.254$; $p=0.005$) and trust ($\beta=0.155$; $p=0.049$). Service innovation has a positive but insignificant effect on satisfaction ($\beta=0.120$; $p=0.175$), but a positive and significant effect on trust ($\beta=0.490$; $p=0.000$). Trust has a positive and significant effect on satisfaction ($\beta=0.324$; $p=0.000$). The mediation test shows that social media $\rightarrow$ trust $\rightarrow$ satisfaction is not significant ($p=0.113$), while service innovation $\rightarrow$ trust $\rightarrow$ satisfaction is significant ($p=0.005$). The explanatory power of the model is strong (R^2 trust=0.705; R^2 satisfaction=0.889). Practical implications: strengthening social media content and responses needs to be accompanied by innovations that increase trust—such as process transparency, real-time status tracking, and SLA standards—in order to have a direct impact on satisfaction.

Keywords: social media, service innovation, trust, satisfaction

INTRODUCTION

The development of information and communication technology today has driven significant transformations in the delivery of public services, particularly in local government. One of the agencies directly affected by this change is the Population and Civil Registration Office (Disdukcapil), which has a strategic responsibility to provide responsive, efficient, and needs-oriented administrative services ( ) to the community. As public expectations for service quality increase, the use of social media as a means of two-way interaction and the implementation of service innovations have become crucial steps in building public trust and increasing community satisfaction with the performance of the bureaucracy. Social media has become a communication channel that is not only fast and cost-effective but also capable of reaching a wide audience. According to Lăzăroiu (2020), social media is a group of internet-based applications built on the ideology and technology of Web 2.0 that enables the creation and exchange of user-generated content. The Medan City Disdukcapil has used platforms such as Instagram, Facebook, YouTube, and WhatsApp to convey service information, respond to public inquiries, and receive complaints directly.

On the other hand, public service innovations such as the new generation klampid, online document management, and application-based services also provide convenience and efficiency in the service process. Kohli (2019) defines innovation as the application of new ideas, programs, or processes in an organization with the aim of improving operational effectiveness and service quality. These innovations are expected to reduce physical queues, speed up service processes, and increase transparency and accountability. However, the success of social media and service innovations in increasing public satisfaction is highly dependent on the level of public trust in service providers. Liu (2019) states that trust is an individual's willingness to accept risk based on positive expectations of the actions of others. Public trust can be built if services are considered consistent, safe, and open to supervision. When services are considered satisfactory, the public will feel the benefits that match their expectations. Mesra et al.

(2024) explain that satisfaction is a person's feeling of pleasure or disappointment after comparing their perception of the performance of a product or service with their expectations. Therefore, public satisfaction is not only determined by service quality alone, but also by the perception of trust in the agency providing the service. However, in practice, various problems are still found, such as discrepancies between information on social media and the reality on the ground, slow responses to complaints, and a lack of public understanding of the digital innovations used. This is an indicator that social media and service innovations are not yet fully effective without an increase in public trust as a bridge to service satisfaction. Based on this description, this research is important to analyze the influence of social media and service innovations on public satisfaction, with trust as an intervening variable, at the Population and Civil Registration Office of Medan City.

LITERATURE REVIEW
Social Media

Social media is an internet-based platform that enables real-time social interaction, information exchange, and collaboration between users. In the context of public services, social media has become a strategic communication tool between government agencies and the public, especially for conveying service information, accommodating complaints, and building institutional image. According to Cheung, Pires, & Rosenberger (2020), social media is an internet-based application built on the ideology and technology of Web 2.0, which enables the creation and exchange of content by users. Work Productivity Indicators

Social Media Service Indicators
According to Abkenar (2021), social media services have indicators
1) Interaction
   Refers to the ability of social media to build two-way communication between institutions and the public, whether through comments, direct messages, or discussion forums.
2) Information Accessibility
   Describes the ease with which the public can access public service information quickly, openly, and without restrictions on time or place through social media.
3) Transparency
   Indicates the extent to which information conveyed by agencies on social media is clear, open, and accountable, such as service schedules, procedures, and costs.
4) Response Speed
   Refers to the time required for agencies to respond to questions, complaints, or comments from the public on social media in a quick and appropriate manner.
5) Public Participation
   Indicates the level of public involvement in the service process through social media, whether in the form of providing suggestions, criticism, or helping to disseminate service information.

Service Innovation

Service innovation is an effort to renew public service organizations or agencies in order to improve the effectiveness, efficiency, and convenience of services for the public. In the digital age, service innovation is an absolute necessity to respond to the demands of the public who want faster, easier, and technologically integrated service processes. According to Kohli (2019), service innovation is the adoption of new ideas, systems, or practices within an organization, with the aim of improving the quality of service processes and outcomes. Yuen (2020) adds that service innovation plays a role in shaping the public's perception of service quality. Innovation creates added value and becomes a competitive differentiator between service providers, especially in the public sector where service standards are similar.

Service Innovation Indicators
According to Yuen (2020), service indicators are as follows:
1) Process Digitalization
   Refers to the use of digital technology to replace manual processes, such as filling out online forms or uploading documents electronically.
2) Service Speed

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Describes the time required to complete a service, from submission to receipt of documents, with the goal of faster service.

3) Accessibility

Indicates the ease with which the public can access services anytime and anywhere, without having to come directly to the office.

4) Electronic Queuing System

Refers to the implementation of a digital ordering or queue number system to reduce waiting times and physical crowds.

5) Ease of Use

Describes the extent to which the available service system is easy to understand and use by the general public, including those who are not familiar with technology.

Trust

Trust is the public's belief in the integrity, competence, and good intentions of agencies or service providers in meeting promised expectations. In public services, trust is the main foundation for creating a healthy relationship between the public and the government. Without trust, even innovation or service quality will be difficult to maximize user satisfaction. According to Azadi (2019), trust is a person's willingness to accept risk based on positive expectations of the actions or behavior of others who are considered reliable. In this context, the public is willing to use public services because they believe that agencies will carry out their functions fairly, transparently, and professionally. Earnshaw (2020) also emphasizes that trust is the main foundation for building long-term relationships between institutions and service users.

Trust Indicators

According to Zhang (2019), trust has the following indicators:

1) Information Security

The public's confidence that their personal data is managed and stored securely by agencies without the risk of leakage or misuse.

2) Process Transparency

Openness in service procedures, including clear information about the requirements, time, and costs involved.

3) System Reliability

The level of stability and consistency of digital systems or service applications in operating without significant disruption.

4) Institutional Integrity

The image and reputation of the institution as an honest, responsible service provider, free from manipulative practices.

5) Service Consistency

The uniformity of service quality received by the public over time, without discrimination or inconsistent treatment.

Satisfaction

Public satisfaction is the result of a comparison between the public's expectations before receiving a service and their perception of the actual quality of the service received (Desy, et al., 2020). In public services, satisfaction not only reflects the technical success of service delivery, but also reflects the emotional experience and perceived value felt by users. According to (Mesra, et al. 2024), satisfaction is a feeling of pleasure or disappointment that arises after comparing the performance of a product or service with one's expectations. This means that if the service received exceeds expectations, the public will feel satisfied; conversely, if it does not meet expectations, dissatisfaction will arise. Isautier (2020) explains that satisfaction is a short-term emotional reaction that arises after interaction with a service. This reaction is greatly influenced by the public's initial expectations and how they actually experience the service process.

Satisfaction Indicators

According to Isautier (2020), satisfaction indicators are:

1) Expectation Match

The degree of compatibility between the service received by the public and their initial expectations regarding the quality, procedures, and results of the service.

2) Process Convenience

The ease and comfort felt by the community during the service process, including the atmosphere, queuing system, and treatment by staff.

3) Clarity of Information

The extent to which the service information provided is clear, easy to understand, and not confusing for the community.

4) Responsiveness

The speed and accuracy of agencies in responding to questions, complaints, or needs of the public during the service process.

5) Service Efficiency

Optimal use of time and resources in service delivery, without unnecessary or complicated processes.
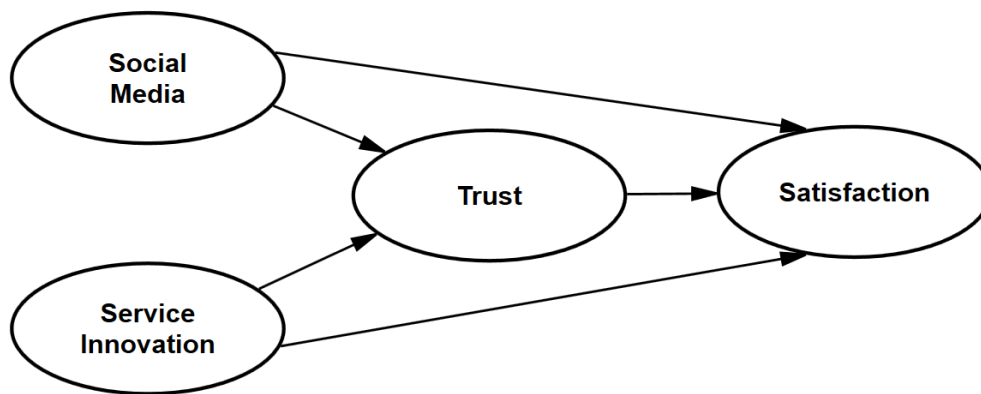
Conceptual Framework

Figure 1. Conceptual Framework

Research Hypothesis

H_1: Social media has a positive and significant effect on public satisfaction with the Population and Civil Registration Office of Medan City

H_2: Social media has a positive and significant effect on trust in the Population and Civil Registration Office of Medan City.

H_3: Service innovation has a positive and significant effect on public satisfaction with the Population and Civil Registration Office of Medan City

H_4: Service innovation has a positive and significant effect on trust in the Population and Civil Registration Office of Medan City.

H_5: Trust has a positive and significant effect on service satisfaction in the Population and Civil Registration Office of Medan City.

H_6: Social media has a positive and significant effect on service satisfaction through trust in the Population and Civil Registration Office of Medan City.

H_7: Service innovation has a positive and significant effect on service satisfaction through trust in the Population and Civil Registration Office of Medan City.

RESEARCH METHOD

Type of Research

The type of research used by the researcher is quantitative research. This type of quantitative research is conducted to create a study aimed at adjusting a study and analyzing the impact of social media and service innovation on satisfaction with trust as an intervening variable at the Population and Civil Registration Office of Medan City.

Research Location and Time

This research was conducted at the Population and Civil Registration Office (Disdukcapil) of Medan City, Jalan Iskandar Muda No.270, Petisah Tengah, Kec. Medan Petisah, Medan City, North Sumatra, 20151, which is a local government agency responsible for population administration services, such as the processing of Identity Cards (KTP), Family Cards (KK), birth certificates, and other population documents.

Population and Sample

The population in this study is the entire community of Medan City who have used the services of the Population and Civil Registration Office (Disdukcapil) of Medan City, either directly at the service office or online through social media and digital services provided. This population includes service users who access various forms of population administration such as e-KTP recording, Family Card creation, birth certificates, and other population services. The number of users of the Medan City Disdukcapil services is 200 people per working day. With 22 effective working days in a month, the population of service users in a month is $200 \times 22 = 4,400$ people. Therefore, the population in this study is 4,400 people. Sampling was carried out using the Slovin formula, resulting in a sample size of 98 respondents.

Research Data Sources

The data source used in this study is primary data, which is data collected directly from respondents through the distribution of questionnaires. Primary data is original because it is obtained directly from the first source (the community of users of the Medan City Disdukcapil services).

RESULTS AND DISCUSSION

Outer Model Analysis

Outer Model Analysis using the PLS Algorithm produced the following results:

1) Validity Test

Table 1. Outer Loadings Values

	Satisfaction	Service Innovation	Social media	Trust
X1.1			0.789	
X1.2			0.811	
X1.3			0.769	
X1.4			0.779	
X2.1		0.600		
X2.2		0.741		
X2.3		0.832		
X2.4		0.779		
Y.1	0.823			
Y.2	0.834			
Y.3	0.805			
Z.1				0.758
Z.2				0.802
Z.3				0.838

Source: Smart PLS Output, 2025

Based on the values in Table 1 above, which show the results of outer model testing through loading factor/outer loadings values, all indicators in each variable have a loading value ≥ 0.60. This indicates that each indicator is able to represent the construct being measured in a valid and robust manner. Therefore, it can be concluded that all items in the questionnaire have met the convergent validity criteria and can be used in further analysis. For further clarification, the above values can also be seen in the following figure.
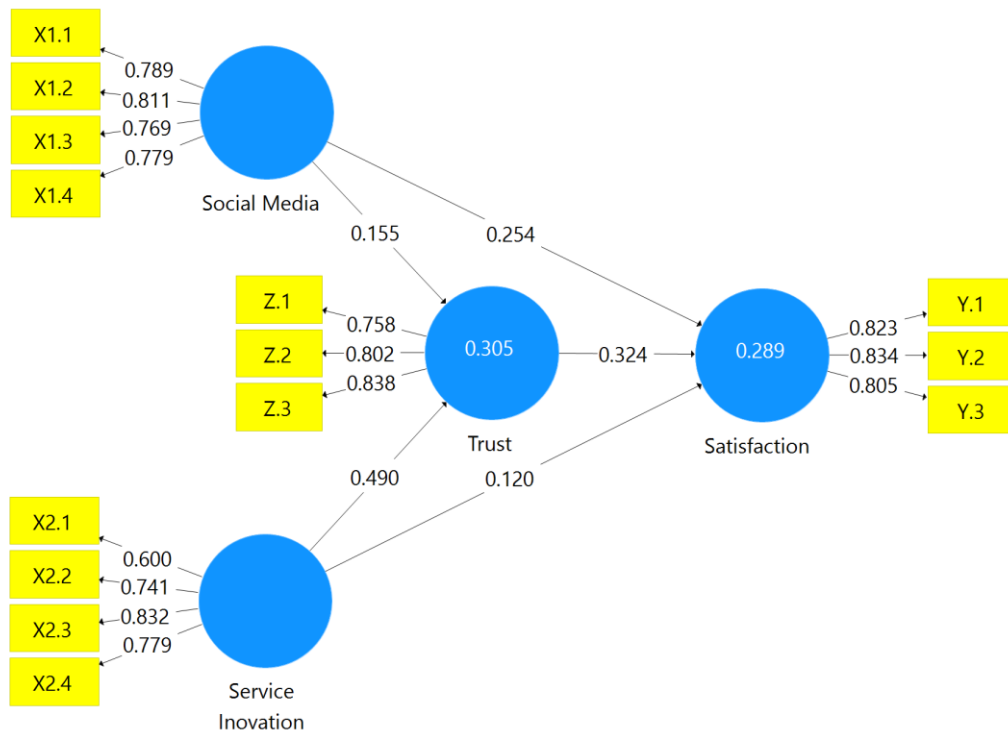
Figure 1. Conceptual Framework

In this study, there is an equation, and that equation consists of two substructures for substructure 1:

$Z = \beta_1 X_1 + \beta_2 X_2 + e_1$

$Z = 0.155X1 + 0.490Z + e_1$

For substructure 2:

$Y = \beta_2 X_1 + \beta_3 X_2 + \beta_3 Z + e_2$

$Y = 0.254 X_1 + 0.120X_2 + 0.324Z + e_2$

2) Reliability Test

Table 2. Construct Reliability and Validity Test

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Satisfaction	0.759	0.767	0.861	0.673
Service Innovation	0.733	0.761	0.829	0.552
Social Media	0.797	0.813	0.867	0.619
Trust	0.723	0.743	0.842	0.640

Source: Smart PLS Output, 2025

From Table 2 above, the reliability test results show that the Cronbach's Alpha and Composite Reliability values for all constructs are above 0.70. This indicates that all indicators have high internal consistency and are reliable in measuring their respective constructs. Thus, the research instrument is declared reliable and suitable for use in structural model testing.

3) Coefficient of Determination (R^2)

In assessing the model with PLS, we begin by looking at the R-square for each dependent latent variable. The table below shows the Rsquare estimation results using SmartPLS.

Table 3. R Square Results

	R Square	Adjusted R-Square
Trust	0.705	0.291
Satisfaction	0.889	0.268

Source: Smart PLS, 2025

Table 3 shows the R square values for both dependent variables. For the trust variable, the R square value is 0.705, meaning that the influence of social media and service innovation is 0.705 or 70.5%, with the remainder attributable to other variables outside the model. The R-square value for satisfaction is 0.889, meaning that social media, service innovation, and trust account for 0.889 or 88.9%, with the remainder attributable to other variables outside the model.

Structural Model Testing (Inner Model)

Inner model or structural model testing is conducted to examine the relationship between constructs, significance values, and R-square of the research model. The structural model is evaluated using R-square for the dependent construct.

Hypothesis Testing

a) Direct Influence Between Variables

The direct effect between variables can be seen in the path coefficients. The data processing results show the direct effect values in the following table.

Table 4. Path Coefficients (Direct Effects)

	Original Sample	T Statistics	P Values	Conclusion
Social Media -> Satisfaction	0.254	2.798	0.005	Accepted
Social Media -> Trust	0.155	1.977	0.049	Accepted
Service Innovation -> Satisfaction	0.120	1.359	0.175	Rejected
Service Innovation -> Trust	0.490	5,656	0	Accepted
Trust -> Satisfaction	0.324	3,663	0.000	Accepted

Source: Smart PLS Output, 2025

The results in Table 4 show the following direct effect values:

1. Social media has a positive and significant effect on satisfaction with a t-statistic value of 2.798 above 1.96 and a significance of 0.005 below 0.05, meaning that social media has a positive and significant effect on satisfaction because the significance value is below 0.05 . The results of this study are in line with previous research findings, namely that social media has a positive and significant effect on the satisfaction of Tokopedia consumers in Manado City (Puirih et al, 2020).

2. Social media has a positive and significant effect on trust with a t-statistic value of 1.977 above 1.96 and a significance of 0.049 below 0.05, meaning that social media has a positive and significant effect on trust because the significance value is below 0.05. This study is consistent with research stating that social media has a positive and significant effect on trust (Hamid, 2022).

3. Service innovation has a positive but insignificant effect on satisfaction with a t-statistic value of 1.359 below 1.96 and a significance of 0.175 above 0.05, meaning that service innovation has a positive but insignificant effect on satisfaction because the significance value is above 0.05 . The results of this study contradict previous research, which found that service innovation has a positive and significant effect on customer satisfaction with Garuda Indonesia at Yogyakarta International Airport (Nataya & Yudianto, 2022).

4. Service innovation has a positive and significant effect on trust with a t-statistic value of 5.656 above 1.96 and a significance of 0.000 below 0.05, meaning that service innovation has a positive and significant effect on trust because the significance value is below 0.05. The results of this study are also in line with the research conducted by Muzaki et al (2021), which states that service innovation has a positive and significant effect on public trust.

5. Trust has a positive and significant effect on satisfaction with a t-statistic value of 3.663 above 1.96 and a significance of 0.000 below 0.05, meaning that trust has a positive and significant effect on satisfaction because the significance value is below 0.05. The results of this study are in line with previous studies, namely that trust has a positive and significant effect on satisfaction with a t-statistic value of 3.663 above 1.96 and a significance of
   of 0.000 below 0.05, meaning that trust has a positive and significant effect on satisfaction because the significance value is below 0.05. Kasinem's (2021) research also states that trust has a positive and significant effect on customer satisfaction.

b) Indirect Influence Between Variables
   The indirect effect between variables can be seen in the specific indirect effects value. The data processing results show that the indirect effect value can be seen in Table 5 below.

Table 5. Specific Indirect Effects

	Original Sample	T Statistics	P Values	Conclusion
Social Media -> Trust -> Satisfaction	0.050	1.588	0.113	Rejected
Service Innovation → Trust → Satisfaction	0.159	2.851	0.005	Accepted

Source: Smart PLS, 2025

Table 5 shows the indirect effects between variables, which will be explained as follows:
1. Social media has a positive and significant effect on satisfaction through trust with a t-statistic value of 1.588 and a significance value of 0.113, meaning that trust does not act as an intervening variable between social media and satisfaction.
2. Service innovation has a positive and significant effect on satisfaction through trust with a t-statistic value of 2.851 and a significance value of 0.005, meaning that trust acts as an intervening variable between service innovation and satisfaction.

CONCLUSION
1. Social media has a positive and significant effect on public satisfaction with the Population and Civil Registration Office of Medan City.
2. Social media has a positive and significant effect on trust in the Population and Civil Registration Office of Medan City.
3. Service innovation has a positive but insignificant effect on public satisfaction with the Population and Civil Registration Office of Medan City.
4. Service innovation has a positive and significant effect on trust in the Population and Civil Registration Office of Medan City.
5. Trust has a positive and significant effect on service satisfaction at the Medan City Population and Civil Registration Office.
6. Social media has a positive and significant effect on service satisfaction through trust in the Population and Civil Registration Office of Medan City.
7. Service innovation has a positive but insignificant effect on service satisfaction through trust in the Population and Civil Registration Office of Medan City.

RECOMMENDATIONS
1. Social media turned out to be the indicator with the lowest value, specifically the statement "My posts often receive likes/reactions." A suggestion that can be given to the Population and Civil Registration Office is to make each announcement a short video (Reels/Shorts) of 20–30 seconds: open with a 3-second hook ("Need an ID card quickly? Here's how!"), continue with 3 super-brief steps, and close with a CTA ("Click the link in the bio/WA Channel"). This format consistently increases engagement; test it twice a week during prime time.
2. Service innovation with the statement "Our services offer a different value concept compared to competitors." Agencies should maintain systematic work design practices and continue to evaluate and refine them to ensure that work remains relevant, efficient, and supports optimal employee performance.

3. Public trust with the statement "I work with high intensity and enthusiasm every day." The Population and Civil Registry Office needs to implement real-time status tracking + automatic WhatsApp notifications for each stage (file received → verified → printed → ready for pickup) complete with an estimated completion time. This is a unique value proposition because citizens don't have to guess the progress and can plan their arrival.

4. Public satisfaction with the statement "My expectations were met after using the Population and Civil Registration Office's services." The Population and Civil Registration Office should implement and announce a clear Service Level Agreement (e.g., ID cards ready in ≤ 2 working days) and display a progress countdown on official channels—if the SLA is exceeded, provide priority service compensation. This aligns expectations from the outset and enhances the sense of "promises kept."

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