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# Accelerating Urban Development in Indonesia: The Impact of Online Government Services

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**ABSTRACT**

In Indonesia, the transition to online bureaucratic services at the municipal level, encompassing areas such as population administration, education, procurement, public information dissemination, taxation, and civic engagement in development, represents a significant shift towards modernizing governance and enhancing socio-economic development. Despite the widespread adoption across various agencies, the integration of these services has not been uniformly achieved. This study delves into the factors influencing the preparedness of both the community and government apparatus in adopting an online model for government bureaucratic services. It is revealed that factors such as comprehension, proficiency in technology, psychological and ethical guidance, and both formal and informal education, along with tangible and intangible incentives, exert a positive and significant influence on the readiness levels of community members and government personnel to engage in online service provision. Moreover, it is demonstrated that online socio-economic program services serve as a critical mediator in expediting the development of urban areas. The findings underscore the necessity for municipal governments to enhance the comprehensive implementation of various online socio-economic services, as they are pivotal in accelerating urban development.

## 1. INTRODUCTION

Currently, the issue of government bureaucratic services remains a primary concern at the national, regional, and local levels. Despite efforts to address the issue, several internal and external obstacles within the government continue to contribute to the problem. However, the development concept of the Indonesian government from the periphery aims to accelerate the process, starting from the smallest level. Several items in the "Nawacita" concept clearly emphasize the importance of development at the local level, including in urban areas. Nawacita is a Sanskrit word meaning "*nawa*", which means "nine", and "*cita*" means "hope, desire, and dream." Nawacita is a summary of nine national development priorities under the presidency of Joko Widodo and Jusuf Kalla in Indonesia [1-3].

Bureaucracy is derived from the words "bureau," and "kratia" (cratein), meaning desk and government. The forms of bureaucratic activities include various public services provided by the government, and the administration system is a basic need for human resource management in providing public service [4]. Bureaucracy is a control system within an organization designed based on rational and systematic rules, aimed at coordinating and directing individual work activities to complete administrative tasks on a large scale [5].

The current service model for bureaucracy at the city government level is predominantly online and has garnered considerable attention with the implementation adopted by various agencies. However, the implementation has not been running smoothly in all existing online bureaucratic service units [6].

Generally, online services at the city government level are only carried out simply because of a lack of infrastructure support. In addition, they are project-based and are limited to unidirectional information from the government to the community, and others [1-5]. The condition requires an in-depth and comprehensive analysis related to what, why, and how the factors that influence it. Moreover, the online bureaucratic service is targeted to be a stimulant for accelerating development in urban areas and is expected to become a model for urban development in Indonesia. Therefore, this study aims to analyze the role of online community socio-economic development program services in mediating the influence of community readiness factors as service users and apparatus as service providers on urban development. The findings of this study are expected to help

city government stakeholders measure the extent of the role of implementing online services seriously and determine the priorities of effective programs if they are carried out to improve the readiness of the community and its servant apparatus.

## 2. METHODOLOGY

This study uses a quantitative approach with an explanatory model focusing on the relationship between variables and testing hypotheses [6]. The examination was conducted by the Tebing Tinggi City Government, North Sumatra, Indonesia. The population is a bureaucratic apparatus, with a total of 2,769 individuals, according to the data from the Tebing Tinggi City Government in 2019. The sample size was determined using the Slovin formula [7].

$$\boldsymbol{n = \frac{N}{1 + N(e)^2}} \quad (1)$$

where, $n$ is the number of samples, $N$ is the number of population, and $e$ is the error tolerance (0,1).

The sample was obtained using probability sampling, which gives equal chances for every element of the population to be selected as a sample member [8]. Furthermore, the sample size was calculated based on Formula (1) with a precision of 6%, resulting in a total of 253 respondents.

### 2.1 Data collection

This study obtained primary data as the main data by giving questionnaires to a sample of apparatus in Tebing Tinggi City. Meanwhile, secondary data was collected from a variety of sources, including office/institutional records, academic journals, and textbooks pertinent to the research. Relevant literature is also used to discuss the data and information obtained [9]. Before the distribution of the primary data collection instrument, it was subjected to a pretest involving 30 individuals who were also selected as samples. The data obtained from the pretest was analyzed to ensure its validity and reliability [10, 11] using product-moment correlation [12] and Cronbach's alpha calculation [13, 14].

### 2.2 Data analysis

The structural equation model (SEM) was used as the primary data analysis technique to examine the research problem. This statistical technique allows for the simultaneous testing of multiple relationships between dependent and independent variables [15, 16]. This SEM is used because it can analyze complex relationships between one or several dependent variables and one or more independent variables. In this case, the variable of community readiness and apparatus is a variable that must be explained with several more measurable sub-variables. The service variable of the socio-economic development program of the community has a dual role, where it is an independent variable in one relationship, but becomes a dependent variable in another relationship because there is a tiered causality relationship (Figure 1). Each dependent and independent variable is in the form of a factor or construct built from several indicator variables.

The conceptual framework of the model is presented in the chart, as shown in Figure 1. With this model, the relationship between variables can be known, as can the role of online community socio-economic development program service variables in moderating relationships, whether they are strengthening or vice versa.

In this study, the model flow of the relationship between variables and indicators is described as follows:

a. Community readiness variable. The community readiness variable in the implementation of the online government bureaucratic service model is measured using indicators such as understanding, technology mastery, mental coaching, moral coaching for apparatus, formal and informal education, as well as material and non-material incentives for service users.
b. Apparatus readiness variable. The apparatus readiness variable in the implementation of the online government bureaucratic service model can be measured using indicators such as understanding, technology mastery, mental coaching, moral coaching for apparatus, formal and informal education, as well as material and non-material incentives in the intended service.
c. Effect of community and apparatus readiness on social-economic development program service for the community. This test was conducted to determine the effect of community and apparatus readiness on program services as measured by sub-variables, including population administration services, education, procurement of goods and services, public information, taxes, and levies, as well as participation in development.
d. Direct effect of community and apparatus readiness on urban development. This testing is conducted to determine the direct effect of community and apparatus readiness on urban development as measured by sub-variables including household income, job availability, education, and health.
e. Effect of community and apparatus readiness on urban development through an online social-economic development program service. This testing is conducted to determine the indirect effect of community and apparatus readiness on the development of urban areas. This test is also useful for measuring the role of development program service variables as mediators in accelerating urban development. The mediator variable is declared significant if the indirect influence is stronger than the direct influence.

In SEM analysis, there is no single statistical test tool to measure or test hypotheses regarding models. Generally, various types of fit indexes are used to measure the degree of conformity between the hypothesized model and the data presented. In this study, several fit indices were used to measure the correctness of the resulting model. Some of the conformity indexes and criteria used in testing whether the resulting SEM is acceptable or rejected are presented below (Table 1).

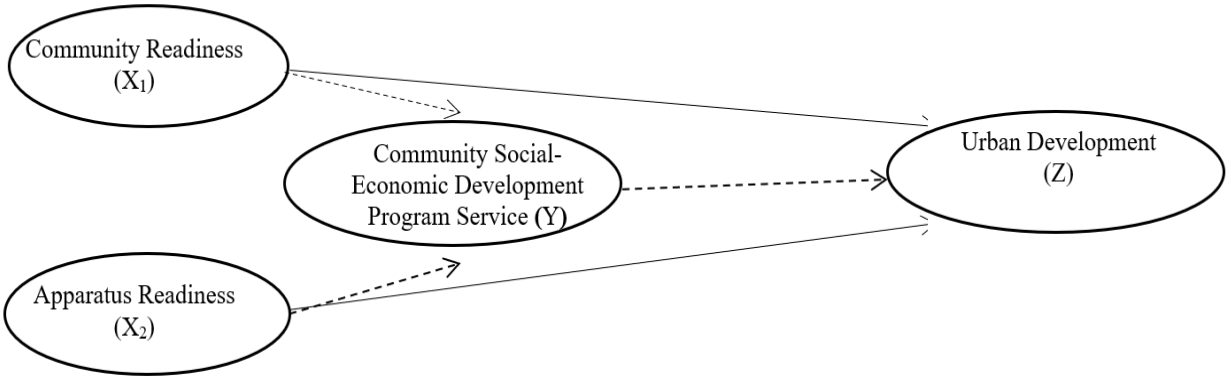


**Figure 1.** Conceptual framework of the model

**Table 1.** Goodness of fit index (GFI)

| Goodness of Fit Measure | Critical Value (Cut of Value) |
|---|---|
| Chi-square ($\lambda^2$) | Expected small |
| Significance probability (p) | ≥ 0.05 |
| RMSEA | ≤ 0.08 |
| GFI | ≥ 0.09 |
| AGFI | ≥ 0.09 |
| CMIN/DF | ≤ 2.00 |
| TLI | ≥ 0.95 |
| CFI | ≥ 0.94 |

## 3. RESULTS AND DISCUSSION

### 3.1 Results of the SEM test

3.1.1 Measurement model evaluation

The measurement model evaluation was carried out through the Confirmatory Factor Analysis (CFA) to test the validity and reliability of the constructs. Furthermore, the factor loading values of each indicator and AVE values were examined to test construct validity. The indicator is considered valid when the value is greater than 0.5, and the reliability test was conducted by analyzing the critical ratio (CR) value. Meanwhile, the construct is considered reliable when the CR value is ≥ 0.7, and the CFA first-order analysis showed that all constructs met the criteria for validity and reliability.

The readiness of the community and the apparatus was built on seven dimensions, namely understanding, technology mastery, mental development, moral development, formal education, informal education, and material incentives. Based on the results using AMOS V.24, the fit indices of the measurement model of constructs, such as Chi-square, significance probability (*p*), root mean square error of approximation (RMSEA), GFI, adjusted GFI (AGFI), minimum discrepancy/degree of freedom (CMIN/DF), Tucker-Lewis index (TLI), and comparative fit index (CFI), were in the good fit category. Thus, the readiness of the community and apparatus can be explained by the dimensions of understanding, technology use, mental coaching, moral coaching, formal education, informal education, and material incentives. Similar results were obtained for the urban development construct, but there were two indicators with a marginal fit for the socio-economic development program construct, namely GFI and AGFI.

3.1.2 SEM assumption testing

a. Multivariate normal distribution of observed variables

In this study, CR values for skewness and kurtosis for each indicator are between -2.58 and +2.58, indicating that the data fulfill the assumption of univariate normality. The obtained multivariate CR value is 45.465, and the assumption of multivariate normality was not fulfilled. The Central Limit Theorem showed that a sample distribution can approach normality with increasing size. Therefore, the normality assumption can be ignored with a sufficiently large sample size [17, 18]. This study used a sample with a sufficient proportion to fulfill this assumption.

b. Evaluation of multicollinearity and singularity

Based on the data processing, the determinant of the sample covariance matrix is zero (0.00). This indicates a singularity problem, and the model requires modification.

c. Assumption of outliers

Outlier testing was conducted using the Mahalanobis distance criteria at a level of $p<0.001$. The Mahalanobis distance was evaluated using $X^2$ with degrees of freedom equal to the number of indicator variables. In this study, the number of indicators used is 82, and at a p-level of 0.001, the obtained $X^2$ value is 127.324. Some of the highest Mahalanobis distance values were greater than the tabled $X^2$, indicating the presence of outliers, which were then addressed.

3.1.3 Evaluation of the structural model

The following is the initial SEM using the AMOS computer program, as shown in Figure 2. The goodness of fit assessment for the model is presented in Table 2.

Based on Table 2, the eight fitness measures have a good fit measurement model, namely RMSEA, CMIN/DF, TLI, and CFI. Meanwhile, models included in the bad fit category are Chi-square, significance probability (*p*), GFI, and AGFI.

Due to the presence of inadequate fit criteria, an enhancement was implemented by linking errors to the corresponding indicators based on the modification indices derived from the AMOS output. Subsequently, a retest was conducted, and the outcomes obtained are depicted in Figure 3. The goodness of fit assessment for the model is shown in Table 3.

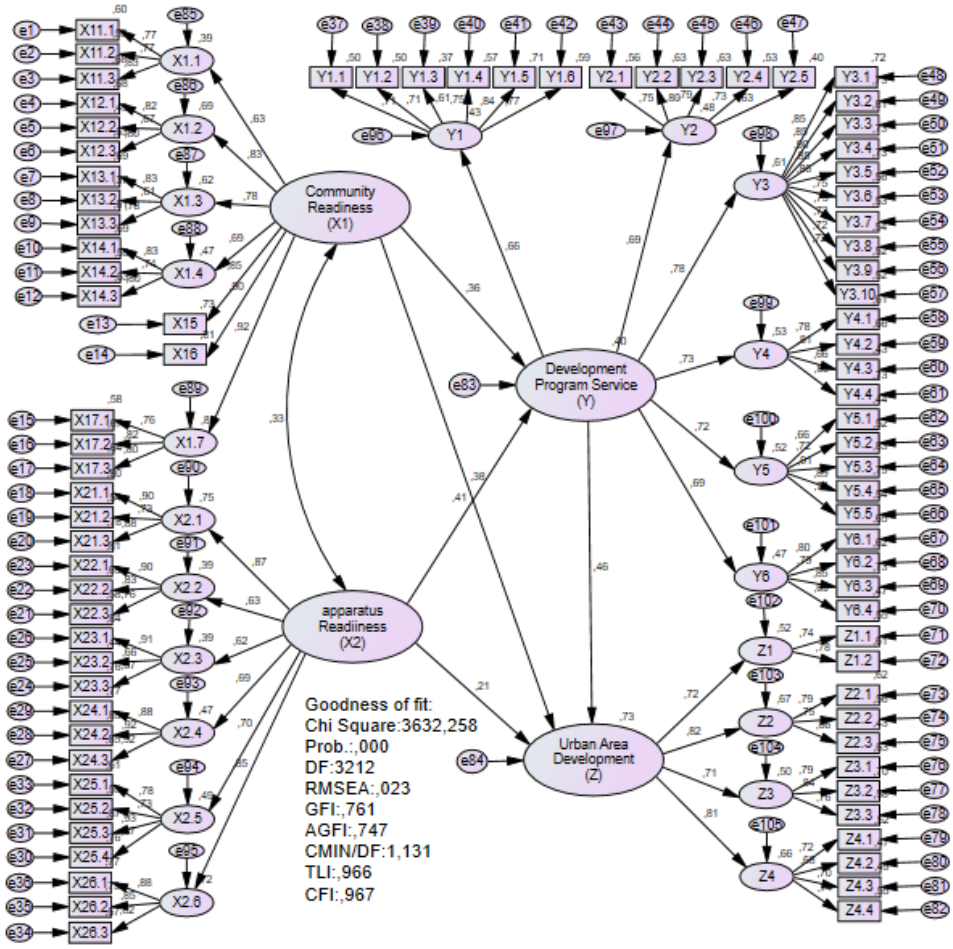


**Figure 2.** AMOS output research model

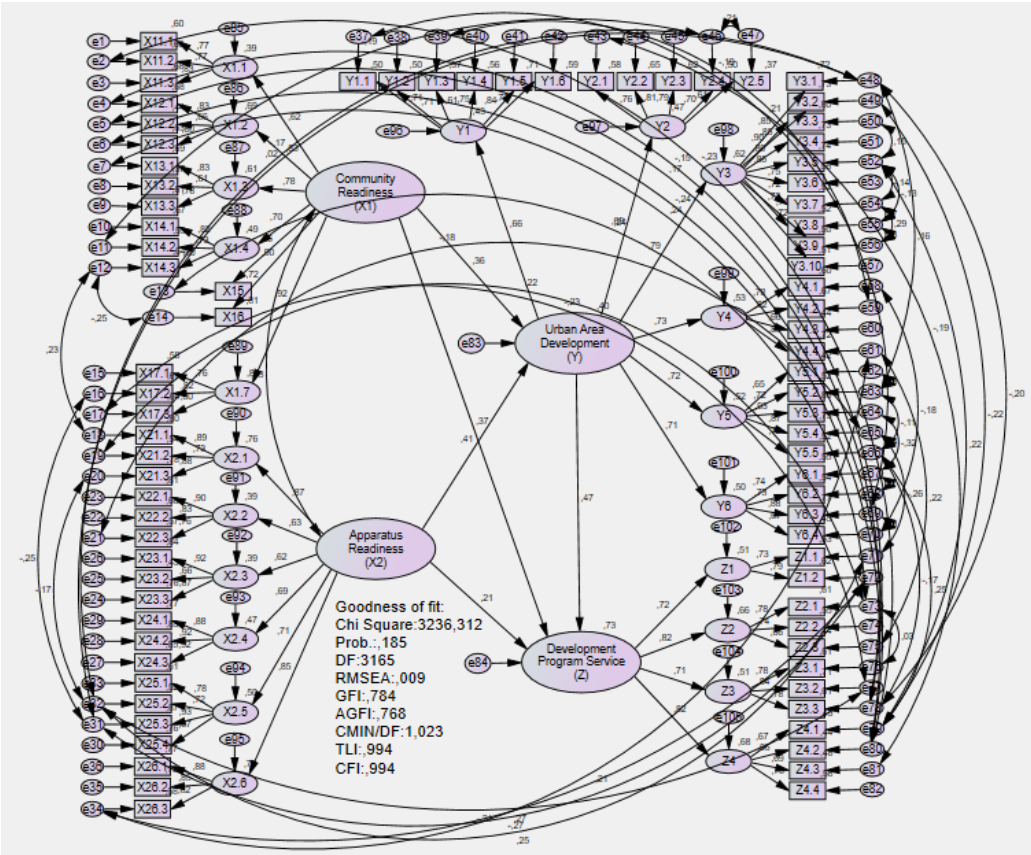


**Figure 3.** AMOS output research model (after modification)

**Table 2.** Conformity size of the measurement model

| GOF Indicator | Expected Size | Estimation Results | Conclusion |
|---|---|---|---|
| Chi-square | More than 3344.962 (df=3212) | 3344.962 | Bad fit |
| Significance probability (p) | ≥ 0.05 | 0.000 | Bad fit |
| RMSEA | ≤ 0.08 | 0.023 | Good fit |
| GFI | ≥ 0.90 | 0.761 | Bad fit |
| AGFI | ≥ 0.90 | 0.747 | Bad fit |
| CMIN/DF | ≤ 2.00 | 1.131 | Good fit |
| TLI | ≥ 0.95 | 0.966 | Good fit |
| CFI | ≥ 0.94 | 0.967 | Good fit |

Note: Marginal fit is the condition of the suitability of the measurement model under the absolute fit or incremental fit criteria, but further analysis continues because it is close to the good fit size criteria.

**Table 3.** Conformity measurement of the full measurement model (after modification)

| GOF Indicator | Expected Size | Estimation Results | Conclusion |
|---|---|---|---|
| Chi-square | Lower than 3296.994 (df=3165) | 3236.312 | Good fit |
| Significance probability (p) | ≥ 0.05 | 0.185 | Good fit |
| RMSEA | ≤ 0.08 | 0.009 | Good fit |
| GFI | ≥ 0.90 | 0.784 | Marginal fit |
| AGFI | ≥ 0.90 | 0.768 | Marginal fit |
| CMIN/DF | ≤ 2.00 | 1.023 | Good fit |
| TLI | ≥ 0.95 | 0.994 | Good fit |
| CFI | ≥ 0.94 | 0.994 | Good fit |

Note: Marginal fit is a condition where the measurement model is under the criteria of both absolute fit and incremental fit, but further analysis continues because it is close to the criteria of good fit.

Based on Table 3, almost all of the suitability measures have a good fit index for the measurement model, namely Chi-square, significance probability (*p*), RMSEA, CMIN/DF, TLI, and CFI, while two of the models are marginal fit, namely GFI and AGFI.

3.1.4 Regression equation

The equations formed based on the model are as follows:

$$Y = 0.363*X_1 + 0.414*X_2. \text{ Errorvar= } 0.597. \text{ R-square = } 0.403$$

$$Z = 0.467*Y + 0.368*X_1 + 0.211*X_2. \text{ Errorvar= } 0.274. \text{ R-square = } 0.726$$

where, the coefficients of the variables are positive, indicating a positive relationship between the readiness of the community and apparatus and the online development program service. The R-square values obtained were 40.3% and 72.6%, indicating the extent to which the independent variables in each equation can elucidate the variance observed in the dependent variable.

3.1.5 Partial hypothesis testing results

The relationship between independent and dependent variables can be seen in Table 4.

Table 4 explains the results as follows:

a. Hypothesis 1. The variable of community readiness ($X_1$) has a CR value of 4.371, greater than the t-table of 1.96, and a P-value of 0.000, less than 0.05. Therefore, $H_1$ is accepted since community readiness ($X_1$) has a significant effect on the online social-economic development program service (Y).

b. Hypothesis 2. The variable of apparatus readiness ($X_2$) has a CR value of 5.028, greater than the t-table of 1.96, and a P-value of 0.000, less than 0.05. Therefore, $H_2$ is accepted since apparatus readiness ($X_2$) has a significant effect on the online social-economic development program service for the community (Y).

c. Hypothesis 3. The variable of online social-economic development program service for the community (Y) has a CR value of 4.467, greater than the t-table of 1.96, and a P-value of 0.000, less than 0.05. Therefore, $H_3$ is accepted since the online social-economic development program service for the community (Y) has a significant effect on urban development (Z).

d. Hypothesis 4. The variable of community readiness ($X_1$) has a CR value of 4.396, greater than the t-table of 1.96, and a P-value of 0.000, less than 0.05. Therefore, $H_4$ is accepted since community readiness ($X_1$) has a significant effect on urban development (Z).

e. Hypothesis 5. The variable of apparatus readiness ($X_2$) has a CR value of 3.028, greater than the t-table of 1.96, and a P-value of 0.000, less than 0.05. Therefore, $H_5$ is accepted since apparatus readiness ($X_2$) has a significant effect on urban development (Z).

3.1.6 Direct and indirect effects

The direct and indirect effects of community and apparatus readiness on urban development through the online social-economic development program service are presented in Table 5 as follows:

a. Community readiness for urban development

The percentage results show that the readiness of the community can improve urban development through social-economic programs. Consequently, in the explanatory relationship between community readiness and urban development, the variable of online social-economic program service serves as the mediating variable.

b. Apparatus readiness for urban development

The percentage results show that the readiness of the apparatus can improve urban development through social-economic program service for the apparatus, but the indirect effect is more dominant. In the explanatory relationship between apparatus readiness and urban development, the variable of online social-economic program service serves as the mediating variable.

**Table 4.** Summary of partial hypothesis tests

| | | | Standardized | S.E. | C.R. | P | Conclusion |
|---|---|---|---|---|---|---|---|
| Y | <-- | $X_1$ | .363 | .083 | 4.371 | *** | Significant |
| Y | <-- | $X_2$ | .414 | .045 | 5.028 | *** | Significant |
| Z | <-- | Y | .467 | .137 | 4.467 | *** | Significant |
| Z | <-- | $X_1$ | .368 | .110 | 4.396 | *** | Significant |
| Z | <-- | $X_2$ | .211 | .050 | 3.028 | .002 | Significant |

Note: *** indicates the value is lower than 0.000.

**Table 5.** Direct and indirect effects on urban development

| Effect | Direct Effect (D) on Urban Development | Indirect Effect (ID) Through Community Social-Economic Development Program Service | Conclusion |
|---|---|---|---|
| Community readiness for urban development | $(0.368)^2 \times 100 = 13.54\%$ | 0.363 x 0.467 × 100 = 16.95% | ID>D (mediating) |
| Apparatus readiness for urban development | $(0.211)^2 \times 100 = 4.45\%$ | 0.414 x 0.467 × 100 = 19.33% | ID>D (mediating) |

### 3.2 Readiness of apparatus and community in the social-economic development program service

Based on the analysis results, it is stated that community readiness in the implementation of the online government bureaucratic service model has a significant effect on the service of socio-economic development programs. The effect also has a positive direction, where the level of community readiness as the target group of service users to use online service products is directly proportional to the quality of social-economic development programs. In this analysis, community readiness is measured from several aspects, namely understanding, technology mastery, mental development, moral development of the apparatus, formal education, informal education, and material incentives.

The apparatus readiness for the implementation of the online government bureaucratic service model is also variable, with a significant effect on social-economic development programs. Therefore, the level of understanding/apparatus readiness is directly proportional to the quality of socio-economic development programs in Tebing Tinggi City. The variable is also measured from the same aspects, namely understanding, technology mastery, mental development, moral development of the apparatus, formal education, informal education, and material incentives.

The understanding and awareness of the community towards various forms of government bureaucratic service, as well as the importance of participation in the implementation of different programs, are positive assets for regional development. Furthermore, good understanding and awareness can encourage positive perceptions and attitudes toward the government apparatus and its role in serving the community. This also characterizes a progressive, modern, and developing society [19, 20]. The implementation of information technology in the processes of administration, management, and governance of the state requires participation, measured by freedom of expression and the rapid dissemination of information between the government and the community. The use of information technology is related to service quality and the accountability of development services. Effective government information technology is an important aspect that must be considered to achieve the success of e-government development in Indonesian local governments [21]. In the Al-Jouf Region, Saudi Arabia, it is recommended that policy-makers and institutional leaders earnestly optimize the benefits of implementing e-government technology to meet the increasingly advanced and dynamic needs of services to beneficiaries [22]. While in Jordan [23] added that the application of information technology in government services is also cheaper.

Public service is the fundamental pillar of people-centered governance [24, 25]. Understanding is aimed at realizing public service that conforms to the principles of good governance [26, 27]. This thematically represents a fundamental reason for the desire to establish legal frameworks for building public servants who uphold democratic principles, transparency, accountability, and responsibility with a new paradigm of bureaucracy as servants rather than rulers [28]. Mutual understanding between public service bureaucrats and the community requiring service is an important aspect used as a solution in addressing challenges and obstacles [29].

The mastery of technology in online government bureaucratic services cannot be denied as an important factor. The general functions of technological facilities in bureaucratic service include a) speeding up work processes; b) increasing productivity of goods and services; c) ensuring accuracy of product size/quality with sufficient room facilities; d) creating comfort; and e) creating satisfaction and reducing the emotional tendencies of service providers [6].

The geographical condition of Indonesia as an archipelago and the presence of Information and Communication Technology (ICT) plays a crucial role in government bureaucratic services [30]. With the rapid development of the information age, technological discoveries are becoming more advanced and cheaper, promising efficient and attractive services, and making the use of ICT increasingly important [31, 32]. Therefore, the government must also use ICT, especially with the increasing volume of work and the advantages of efficiency, productivity, and transparency [33]. To enhance the role and output of bureaucratic performance, technological innovation through e-government is needed. In this perspective, e-government should be interpreted as a policy instrument for public service through information technology in distributing the desires of the community. The realization of this result directly impacts the quality of public service [34, 35].

One of the fundamental weaknesses in public service is morality [36]. According to Sadhana, ethics is a concept that can explain the content of morality and the code of conduct, and the end product of bureaucracy is public service. Therefore, ethics is one of the determining factors of public satisfaction with the service provided as well as a measure of the success of public service organizations. This is related to the implementation of an online government bureaucratic service in Tebing Tinggi City. In this study, the variables of the mental and moral development of apparatus are significant and positive factors affecting the social-economic development program service. Therefore, genuine efforts from a government in developing the mental and moral aspects of regional apparatus have a positive and significant impact on the improvement of different program services related to socio-economic development in an urban area.

The main disease of bureaucratic mentality is corruption and the presence of illegal fees in various public services. According to the study by Ramadhani [37], several causative factors for committing corruption and illegal fees are:

a. Abuse of power, position, or authority can lead to disciplinary violations by individuals who commit illegal fees.
b. Mental, character, or behavior factors of an individual in acting and controlling oneself.
c. Economic factors and insufficient income to fulfill basic needs compared to the duties or positions held can drive an individual to commit illegal fees.
d. Cultural and organizational factors. The culture continuously formed in an institution towards bribery can normalize illegal fees.
e. Limited human resources.
f. Weak control and supervision system by superiors.

Philosophically, the morality of the apparatus is closely related to the mastery of ethics in work. Ethics is the morality of human acts, while morality is the goodness or badness, the rightness or wrongness of human acts [38]. The variable analyzes human attitudes, behavior, and actions regarding good and bad, as well as right and wrong, using norms or value criteria as criteria [24]. Therefore, the local government should promote understanding and trust in ethics as a fundamental code of conduct to improve the standard of administrative machinery and enhance the provision of bureaucratic service.

Regarding norms in policy implementation [39], attitudes of bureaucratic service providers can be seen through the following:

a. The organizational or bureaucratic structure is responsible for the implementation of policies with a significant effect on policy implementation. An important aspect of the organizational structure is the Standard Operating Procedure (SOP).
b. Norms include the rules for policy implementers. The behavior of the apparatus can be limited to prevent arbitrary actions with this indicator.
c. Relationship patterns in bureaucracy. The relationship patterns among apparatus greatly affect policy implementation. The success of the policy can be affected when there is a faulty relationship pattern.

The issue of moral and mental aspects applies to the bureaucratic service apparatus and the community as the recipients of programs. This can be seen from the positive and significant variables in the community. The phenomenon cannot be separated from the system of values and ethics in the community, which is related to the collective perception of right or wrong and good or bad behavior. According to Bertens theory, ethics has three important meanings, namely, as moral values and norms that guide individuals or groups in regulating behavior, known as the "value system"; as a collection of principles or moral values commonly known as the "code of ethics"; and as a science of good or bad, often referred to as "moral philosophy." Similarly, the opinion in the Encyclopaedia of Philosophy uses ethics as a way of life and a moral code or set of rules of conduct [25].

By conducting linear regression analysis and simple correlation, bureaucratic ethics have a positive functional relationship and a significant effect on the professionalism of public service at the Malalayang Sub-District Office in Manado City [39]. Potolau's research in Bitung City also drew the same conclusion: bureaucratic ethics have a direct and indirect effect on the quality of public service. Furthermore, employee performance also has a direct and indirect effect on the quality of public service. Bureaucratic ethics and employee performance affect the quality of public service.

Even though various journals reported the importance of ethical, moral, and mental factors of government bureaucratic apparatus and the community in public service, these forms of ethics and morals are difficult to trace or eradicate. The fundamental problem in the public service process is ethics [40]. There are no universal standards for norms, ethics, or sanctions governing violations committed by apparatus in public service. However, moral or ethical violations are difficult to trace and prove due to the taboo of exposing flaws, including in public service issues. Achieving ethical maturity and autonomy is not easy; hence, moral or ethical violations in public service in Indonesia will continue to occur.

Formal and non-formal education are important factors that affect the success of the implementation of online government bureaucratic services in Tebing Tinggi City. Furthermore, formal education is obtained by the community and bureaucratic apparatus in schools ranging from elementary, middle, and higher education levels. This study does not analyze the linearity factor between formal education and the field of service carried out by the apparatus. Non-formal education is a learning process outside of schools experienced by apparatus and the community, such as training, technical assistance, counseling, socialization, and so on. Therefore, the intensiveness of non-formal education activities of apparatus and the community is directly proportional to the forms of government bureaucratic services packaged with information technology.

The economic, social, and political environment can provide support for the successful implementation of online technology-based services [39]. An open and educated community environment is needed, with support from political elites as policy-makers. Meanwhile, an open and educated community is more adaptive to the implementation of technology because the urgency and benefits are understood through openness or the effect of external factors. The strong effect of moral and mental variables on the apparatus and community in government bureaucratic services [41]. It is recommended that government institutions act in a flexible and accountable manner through modernization and contemporary reform programs.

### 3.3 The effect of apparatus and community readiness on urban development (direct effect)

Based on the statistical analysis using the SEM, the

readiness of the community and apparatus has a significant and positive direct effect on area development in Tebing Tinggi City. These results are consistent with the theory and the statement of the study [42], where development is any government action performed with stakeholders to achieve a beneficial goal for the area and the administrative unit. The relationship between creative actors and area development [43]. In this case, the function of the apparatus that serves various administrative, licensing, and other needs for development stakeholders professionally becomes very crucial. This is also known as the concept of good governance [44, 45]. According to studies [46-48], the principles are partly related to bureaucratic apparatus variables, such as professionalism, to improve the ability and morals of the apparatus in providing an easy, fast, and precise service at an affordable cost. The second is accountability, to increase the accountability of decision-makers in all fields involving the interests of the community. Third is transparency, to create mutual trust between government and community through the provision of information and the ease of obtaining accurate and adequate information. Fourth is excellent service: the provision of good procedures, clear tariffs, certainty of time, ease of access, completeness of facilities and infrastructure, as well as friendly and disciplined service.

Another case was reported by Irwan et al. [49] in Kulo Sub-district, Sidenreng Rappang Regency, where leadership style, state civil apparatus performance, and community participation have a significant effect on development with a value of 99.6% in the category of very influential. In the Southeast Minahasa Regency, using linear regression analysis, it was concluded that the apparatus has a positive and significant functional relationship with the effectiveness of development planning at the Regional Development Planning Agency of Southeast Minahasa Regency [50]. Based on product-moment correlation analysis, the ability also has a significant correlation with the effectiveness of development planning.

At the lower level of bureaucratic service, such as the village, apparatus also plays a crucial role in the quality of development. Merangin Regency, Jambi Province, reported that the ability is an entry point in the implementation of development programs [51]. In a different case in Lalebata Village, Panca Rijang Sub-district, Sidenreng Rappang Regency, the effect of community motivation on development was determined [52]. The results showed that the effect of motivation and community participation on development in the village was 72.6% and 74.5%, respectively.

### 3.4 The effect of online social-economic development program services on urban development

In government bureaucratic services, an apparatus is an individual assigned to a specific department and duties. The role is usually related to service activities in the state administration system. In this context, the overall function is as an evaluator, a refiner of planning, as well as the implementer of government and national development [53]. Furthermore, the substance of the service provided is certainly related to various social-economic development programs.

The same results were reported in Sleman Regency, Yogyakarta [54], where the community benefited from the efforts to realize the concept of a smart city with an online development service. Different complaint channels have been created for the community, and the factors affecting their use are education and inclusion. Furthermore, another factor affecting the use of community complaints is the response from the government. To provide a solution, a system that can maximize the potential of the area for a wider market through online management and service should be designed. The community is expected to increase the potential of their area through technological advancements with this solution. An effective approach to achieving sustainable tourism is through the implementation of a community-based concept that emphasizes active participation in tourism management [55]. According to research from Indonesia [56, 57] and Africa [58], this concept is also predicted to effectively increase community welfare by improving the local economy.

Access to resources and markets is often affected by the limitations of online services. Case research from Pekalongan City, Central Java, Indonesia, showed that internet utilization and human resources variables simultaneously and partially have a significant effect on the digital gap in an urban community. Therefore, online service built on Internet communication infrastructure is a prerequisite fulfilled by local governments to develop their area progressively [59]. Local government limitations should not cause the cessation of online development programs, and other areas also face the same constraints. A similar application called 'Ogan Lopian' used by the Purwakarta Regency, as reported by the study [60], also requires maturation and consolidation in terms of technology, information, and communication infrastructure resources. Furthermore, different system improvements and consistency in local government policies can promote the realization of effective online bureaucratic services.

Research from Botswana stated that SME lacks adequate electronic readiness compared to developed countries [61]. This becomes a barrier for the local community to access development programs and economic resources. Nigeria found that even though the country has the fastest-growing and most profitable telecommunications industry in Africa, the provision of e-government services is very low [62]. The low e-government service is one of the barriers to accelerating rural development, and this condition is recommended to be improved.

### 3.5 The role of online social-economic development program services in mediating urban development

The readiness of the community and apparatus can both be measured through sub-variables of understanding, mastery of technology, mental coaching, moral development of apparatus, formal education, informal education, and material incentives. The readiness of the community and apparatus has proven to have a significant and positive effect on regional development both directly and indirectly, namely through online community socio-economic development program services. The readiness of the community and apparatus for the implementation of an online bureaucratic service model has a direct effect on urban development. Furthermore, the variable has an indirect effect on urban development through socio-economic development program services. In the path coefficient analysis, the indirect effect is more dominant than the direct. Therefore, social-economic development program service is a mediating variable for the readiness of the community and apparatus for urban development. China stated that internet-based service is positively related to economic growth, and spillover effects vary significantly by area [63]. The spillover effects of internet service can also cause regional

economic divergence and support the national goal of reducing development disparities.

This is also consistent with the theoretical assumptions of several researchers that natural resources, human resources, and technology are three important factors to be considered [64, 65]. In this case, the pillar of human resources in the position of apparatus providing bureaucratic service and the community as users of online government are equally important as a variable in area development.

The increase in household income and job availability, as well as improvements in education and health standards, are the main components of area development measured from a micro perspective. For the urban community, matters related to household income, employment, health, and education are numerous, complex, and urgent. This is consistent with the dynamics of the urban community, which is constantly required to be fast, effective, and efficient in overcoming various competitions and life challenges. Therefore, the effectiveness of government bureaucratic services, which are required to be technology-based, is a necessity. This is reinforced by the significant mediating variable, as the various forms of socio-economic development program services are provided to the community. During the COVID-19 pandemic situation that has triggered many crises and difficulties, the country appears in its most tangible form by providing the necessary and solution-oriented service for the community.

For the implementation of the results, the Tebing Tinggi City Government and other similar areas are recommended to identify the need for supporting infrastructure to realize the implementation of a reliable government bureaucratic service. As a comparison material at the level of technical implementation, similar research at the Samarinda City One-Stop Integrated Service Agency stated that the implementation of information technology in data management for public service has been implemented through programs and applications under the licensing service data structure internally. The research also identified supporting factors for the implementation of information technology in data management for public service, including the protection of the mayor and policy of the city government regarding information technology in public service, the readiness of data management hardware and software, the readiness of human resources to conduct information technology-based data management, and the readiness of funding in data management for public service. The implementation of this service is also limited by a lack of funding or budgetary support from the government and a lack of knowledge and data management human resources.

The case in Tebing Tinggi City offers theoretical education on the significant impact of utilizing communication technology devices to carry out various social-economic development programs, which can significantly influence the development of the area. As a logical and empirical consequence, a serious step should be taken toward the implementation of all social-economic development programs through an online bureaucratic service model.

In addition to the recommendation of the implementation of comprehensive online socio-economic development program services, increasing apparatus readiness and community acceptance also need to be improved. Further research is needed to examine in more detail how to make the sub-variables that support the readiness of apparatus and community in the form of understanding, technology mastery, mental coaching, moral coaching, formal education, informal education, and material incentives carried out effectively and efficiently. Findings related to effective and efficient approaches are still needed, especially by cities in developing countries, to minimize constraints stemming from limited funding and infrastructure.

## 4. CONCLUSIONS

The readiness of the community and apparatus can both be measured through sub-variables of understanding, mastery of technology, mental and moral guidance, formal and informal education, and material incentives. The readiness of the community and apparatus has proven to have a significant and positive effect on regional development, both directly and indirectly, through online community socio-economic development program services. Online community socio-economic development program services have proven to be able to be mediators in accelerating the influence of apparatus and community readiness on urban development. Stakeholders at the municipal government level are advised to implement full online services for all socio-economic services to accelerate regional development. The municipal government should also allocate more attention to programs that can improve the readiness of the apparatus for implementing online services, as well as the readiness of the community for utilizing these services.

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## REFERENCES

[1] Hafidz, J. (2017). Nawacita and the law enforcement of civil state apparatus in constitutional law perspectives in Indonesia. Jurnal Pembaharuan Hukum, 4(2): 201-213. http://doi.org/10.26532/jph.v4i2.1936

[2] Arifin, A.S. (2019). Performance of broadband wireless services in Indonesia toward Nawacita. In 2019 International Conference on Electrical and Computing Technologies and Applications (ICECTA), Ras Al Khaimah, United Arab Emirates, pp. 1-5. https://doi.org/10.1109/ICECTA48151.2019.8959722

[3] Purnama, S.A., Bestari, P. (2020). Implementation of national medium term development plan (RPJMN) of the Nawacita program in improving good governance. Journal of International Conference Proceedings (JICP), 3(4): 77-83. https://doi.org/10.32535/jicp.v3i4.1012

[4] Habibie, D.K., Putri, A.U. (2019). Corporate university and development of HR street-level bureaucracy. In Iapa Proceedings Conference, pp. 346-456. https://doi.org/10.30589/proceedings.2019.283

[5] Puspitasari, L., Warsono, H., Sundarso, S. (2020). The analysis of bureaucracy reform on a public service in the field of Indonesian community health. STED Journal, 2(2): 66-75. https://doi.org/10.7251/STED0220066P

[6] Wibawa, S. Mengelola Negara. Gava Media. Yogyakarta. 2012.

[7] Zohar, D., Huang, Y.H., Lee, J., Robertson, M.M. (2015). Testing extrinsic and intrinsic motivation as explanatory variables for the safety climate-safety performance relationship among long-haul truck drivers. Transportation Research Part F: Traffic Psychology and Behaviour, 30: 84-96. https://doi.org/10.1016/j.trf.2015.01.014
[8] Tejada, J.J., Punzalan, J.R.B. (2012). On the misuse of Slovin's formula. The Philippine Statistician, 61(1): 129-136.
[9] Acharya, A.S., Prakash, A., Saxena, P., Nigam, A. (2013). Sampling: Why and how of it. Indian Journal of Medical Specialties, 4(2): 330-333. http://doi.org/10.7713/ijms.2013.0032
[10] Hox, J.J., Boeije, H.R. (2005). Data collection, primary versus secondary. Encyclopedia of Social Measurement, 1: 593-599. http://doi.org/10.1016/B0-12-369398-5/00041-4
[11] Taherdoost, H. (2016). Validity and reliability of the research instrument; How to test the validation of a questionnaire/survey in a research. SSRN Electronic Journal, 5(3): 28-36. http://doi.org/10.2139/ssrn.3205040
[12] Dambi, J.M., Corten, L., Chiwaridzo, M., Jack, H., Mlambo, T., Jelsma, J. (2018). A systematic review of the psychometric properties of the cross-cultural translations and adaptations of the Multidimensional Perceived Social Support Scale (MSPSS). Health and Quality of Life Outcomes, 16(1): 1-19. https://doi.org/10.1186/s12955-018-0912-0
[13] Arikunto, S. (2006). Prosedur Penelitian. Rineka Cipta. Jakarta.
[14] Bujang, M.A., Omar, E.D., Baharum, N.A. (2018). A review on sample size determination for Cronbach's alpha test: A simple guide for researchers. The Malaysian Journal of Medical Sciences, 25(6): 85. https://doi.org/10.21315/mjms2018.25.6.9
[15] de Vet, H.C., Mokkink, L.B., Mosmuller, D.G., Terwee, C.B. (2017). Spearman-Brown prophecy formula and Cronbach's alpha: Different faces of reliability and opportunities for new applications. Journal of Clinical Epidemiology, 85: 45-49. https://doi.org/10.1016/j.jclinepi.2017.01.013
[16] Lowry, P.B., Gaskin, J. (2014). Partial least squares (PLS) structural equation modeling (SEM) for building and testing behavioral causal theory: When to choose it and how to use it. IEEE Transactions on Professional Communication, 57(2): 123-146. https://doi.org/10.1109/TPC.2014.2312452.
[17] Ghasemi, A., Zahediasl, S. (2012). Normality tests for statistical analysis: A guide for non-statisticians. International Journal of Endocrinology and Metabolism, 10(2): 486. https://doi.org/10.5812/ijem.3505
[18] Chin, A. (2018). Central limit theorems via Stein's method for randomized experiments under interference. arXiv preprint, arXiv:1804.03105. https://doi.org/10.48550/arXiv.1804.03105
[19] Clark, B.Y., Brudney, J.L., Jang, S.G. (2013). Coproduction of government services and the new information technology: Investigating the distributional biases. Public Administration Review, 73(5): 687-701. https://doi.org/10.1111/puar.12092
[20] Haklay, M. (2013). Neogeography and the delusion of democratisation. Environment and Planning A, 45(1): 55-69. https://doi.org/10.1068/a45184
[21] Sofyani, H., Riyadh, H.A., Fahlevi, H. (2020). Improving service quality, accountability and transparency of local government: The intervening role of information technology governance. Cogent Business & Management, 7(1): 1735690. https://doi.org/10.1080/23311975.2020.1735690
[22] Alqudah, O.M., Mansor, N., Mohd Salleh, S.I. (2022). Difficulties in accounting system implementation for service costs in the public sector. Cogent Business & Management, 9(1): 2150119. https://doi.org/10.1080/23311975.2022.2150119
[23] AlMulhim, A.F. (2023). The impact of administrative management and information technology on e-government success: The mediating role of knowledge management practices. Cogent Business & Management, 10(1): 2202030. https://doi.org/10.1080/23311975.2023.2202030
[24] Ramasamy, R. (2020). Quality of government, public service delivery and institutional impartiality in ethnically polarised societies: Evidence for policy makers. Asia Pacific Journal of Public Administration, 42(1): 46-60. https://doi.org/10.1080/23276665.2020.1731246
[25] Sadhana, K. (2010). Etika Birokrasi dalam Pelayanan Publik. Penerbit Citra Malang.
[26] Alosani, M.S., Yusoff, R., Al-Dhaafri, H. (2020). The effect of innovation and strategic planning on enhancing organizational performance of Dubai Police. Innovation & Management Review, 17(1): 2-24. https://doi.org/10.1108/INMR-06-2018-0039
[27] Brinkerhoff, D.W., Brinkerhoff, J.M. (2015). Public sector management reform in developing countries: Perspectives beyond NPM orthodoxy. Public Administration and Development, 35(4): 222-237. https://doi.org/10.1002/pad.1739
[28] Stewart, R.B. (2014). Remedying disregard in global regulatory governance: Accountability, participation, and responsiveness+. American Journal of International Law, 108(2): 211-270. https://doi.org/10.5305/amerjintelaw.108.2.0211
[29] Susanto, M.I., Supriyatna, W. (2020). Creating an efficient justice system with e-court system in state court and religious court of rights. International Journal of Arts and Social Science, 3(3): 354-361.
[30] Quibria, M.G., Tschang, T., Reyes-Macasaquit, M.L. (2002). New information and communication technologies and poverty: Some evidence from developing Asia. Journal of the Asia Pacific Economy, 7(3): 285-309. https://doi.org/10.1080/1354786022000007852
[31] Rudd, L., Hajkowicz, S., Nepal, S., Boughen, N., Reeson, A. (2015). Fast forward: Scenarios for Queensland in the year 2025 describing the marketplace for education, healthcare, policing, transport and other public services: A scenario planning exercise about the digital marketplace for government services in the future to inform decision makers. Queensland : Department of Science, Information Technology and Innovation and CSIRO. https://nla.gov.au/nla.obj-2742576625/view.
[32] Gil-Garcia, J.R., Helbig, N., Ojo, A. (2014). Being smart: Emerging technologies and innovation in the public sector. Government Information Quarterly, 31: I1-I8. https://doi.org/10.1016/j.giq.2014.09.001

[33] Bhegawati, D.A.S., Utama, M.S. (2020). The role of banking in Indonesia in increasing economic growth and community welfare. South East Asia Journal of Contemporary Business, Economics and Law, 22(1): 83-91.
[34] Malodia, S., Dhir, A., Mishra, M., Bhatti, Z.A. (2021). Future of e-Government: An integrated conceptual framework. Technological Forecasting and Social Change, 173, 121102. https://doi.org/10.1016/j.techfore.2021.121102
[35] Tan, C.W., Benbasat, I., Cenfetelli, R.T. (2013). IT-mediated customer service content and delivery in electronic governments: An empirical investigation of the antecedents of service quality. MIS Quarterly, 37(1): 77-109. https://doi.org/10.25300/MISQ/2013/37.1.04
[36] Insani, N. (2020). Apparatus professionalism and public service ethics. Journal La Sociale, 1(1): 25-28. https://doi.org/10.37899/journal-la-sociale.v1i1.45
[37] Ramadhani, W. (2017). Penegakan hukum dalam menanggulangi pungutan liar terhadap pelayanan publik. Jurnal Hukum Samudra Keadilan, 12(2): 263-276. https://doi.org/10.2013/jhsk.v12i2.139.
[38] Baggini, J., & Fosl, P. S. (2007). The Ethics Toolkit: A Compendium of Ethical Concepts and Methods.
[39] Pai, F.P., Pangkey, M.S., Tampi, G.B. (2016). Pengaruh etika birokrasi terhadap profesionalitas pelayanan publik di kantor camat malalayang kota manado. Jurnal Administrasi Publik, 1(36).
[40] Bisri, M.H., Asmoro, B.T. (2019). Public service ethics in Indonesia. Journal of Governance Innovation, 1(1). https://doi.org/10.36636/Jogiv.V1i1.298 59
[41] Byrkjeflot, H., Du Gay, P. (2012). Bureaucracy: An idea whose time has come (again)? In Reinventing Hierarchy and Bureaucracy-from the Bureau to Network Organizations, pp. 85-109. Emerald Group Publishing Limited. https://doi.org/10.1108/S0733-558X(2012)0000035006
[42] Goldstein, H.A., Glaser, K. (2012). Research universities as actors in the governance of local and regional development. The Journal of Technology Transfer, 37: 158-174. https://doi.org/10.1007/s10961-010-9193-4
[43] Borseková, K., Vaňová, A., Šúrová, J., Kráľ, P., Turečková, K., Nevima, J., Martinát, S. (2021). The nexus between creative actors and regional development. Land, 10(3): 276. https://doi.org/10.3390/land10030276
[44] Nanda, V.P. (2006). The "good governance" concept revisited. The ANNALS of the American Academy of Political and Social Science, 603(1): 269-283. https://doi.org/10.1177/0002716205282847
[45] Gisselquist, R.M. (2012). Good governance as a concept, and why this matters for development policy (No. 2012/30). WIDER Working Paper.
[46] Setiyawati, H., Doktoralina, C. (2019). The importance of quality accounting information management in regional governments in Indonesia. Management Science Letters, 9(12): 2083-2092. https://doi.org/10.5267/j.msl.2019.6.025
[47] Nofianti, L., Suseno, N.S. (2014). Factors affecting implementation of good government governance (GGG) and their implications towards performance accountability. Procedia-Social and Behavioral Sciences, 164: 98-105. https://doi.org/10.1016/j.sbspro.2014.11.056.
[48] Bakhtiar, B. (2021). Accountability and transparency in financial management of village fund allocations in achieving good governance. Jurnal Ilmiah Akuntansi, 4(2): 230-245. https://doi.org/10.57178/atestasi.v4i2.269
[49] Irwan, I., Latif, A., Sofyan, S., Mustanir, A., Fatimah, F. (2019). Gaya Kepemimpinan, Kinerja Aparatur Sipil Negara Dan partisipasi masyarakat terhadap pembangunan di kecamatan kulo kabupaten sidenreng rappang. Moderat: Jurnal Ilmiah Ilmu Pemerintahan, 5(1): 32-43. http://doi.org/10.25147/moderat.v5i1.1900
[50] Wuri, C.D.D., Pangkey, M.S., Kolondam, H.F. (2018). Pengaruh kemampuan aparatur terhadap efektivitas perencanaan pembangunan daerah (Studi di bappeda kab. Minahasa tenggara). Jurnal Administrasi Publik, 4(62).
[51] Pahrudin, H.M., Senjaya, B. (2021). Implementation of the policy for capacity building of village apparatus in Merangin regency, Jambi. The Journal of Society and Media, 5(1): 218-238. https://doi.org/10.26740/jsm.v5n1.p218-238
[52] Mustanir, A., Dema, H., Syarifuddin, H., Wulandari, K. M.S. (2019). Pengaruh motivasi dan partisipasi masyarakat terhadap pembangunan di kelurahan lalebata kecamatan panca rijang kabupaten sidenreng rappang. Jurnal Clean Goverment, 2(1): 27-39.
[53] Wiekeraad, P. (2005). Transparency and reliability of governments. In Proceedings of the Institution of Civil Engineers-Municipal Engineer, 158(1): 29-35. Thomas Telford Ltd. https://doi.org/10.1680/muen.2005.158.1.29
[54] Fridayani, H.D., Chiang, L.C. (2021). The participation of citizens to achieve smart peopleâ€™ s case study: Analyzing the use of online-based community complaint channels in Sleman regency. Smart Cities and Regional Development (SCRD) Journal, 5(1): 69-82.
[55] Israel, B.A., Schulz, A.J., Parker, E.A., Becker, A.B. (1998). Review of community-based research: Assessing partnership approaches to improve public health. Annual Review of Public Health, 19(1): 173-202. https://doi.org/10.1146/annurev.publhealth.19.1.173
[56] Qurrata, V.A., Yusida, E., Hussain, N.E., Merlinda, S., Purnamasari, V., Seprillina, L. (2021). Effectiveness of cash waqf management in improving community welfare: Challenges and opportunities. Review of Integrative Business and Economics Research, 10: 342-359.
[57] Utama, A.G.S. (2020). The implementation of e-government in Indonesia. International Journal of Research in Business and Social Science, 9(7): 190-196. https://doi.org/10.20525/ijrbs.v9i7.929
[58] Patel, L., Kaseke, E., Midgley, J. (2012). Indigenous welfare and community-based social development: Lessons from African innovations. Journal of Community Practice, 20(1-2): 12-31. https://doi.org/10.1080/10705422.2012.644217
[59] Tyas, D.L., Budiyanto, A.D., Santoso, J. (2015). The influence of the power of social media in the development of the digital divide. Scientific Journal of Informatics, 2(2). https://doi.org/10.15294/sji.v2i2.5083
[60] Atthahara, H. (2018). E-government-based public service innovation: A case study of Ogan Lopian application of communication and informatics service in Purwakarta Regency. Jurnal Politikom Indonesiana, 3(1). https://doi.org/10.35706/jpi.v3i1.1412
[61] Mutula, S.M., Van Brakel, P. (2006). E-readiness of

SMEs in the ICT sector in Botswana with respect to information access. The Electronic Library, 24(3): 402-417. https://doi.org/10.1108/02640470610671240

[62] Adeyemo, A.B. (2011). E-government implementation in Nigeria: An assessment of Nigeria's global e-gov ranking. Journal of Internet and Information System, 2(1): 11-19. https://doi.org/10.5897/JIIS.9000007

[63] Lin, J., Yu, Z., Wei, Y.D., Wang, M. (2017). Internet access, spillover and regional development in China. Sustainability, 9(6): 946. https://doi.org/10.3390/su9060946

[64] Pearce, A.R. (1999). The science and engineering of sustainability: A primer. Institute of Sustainable Technology and Development, Georgia Institute of Technology. Atlanta. GA.

[65] Jovovic, R., Draskovic, M., Delibasic, M., Jovovic, M. (2017). The concept of sustainable regional development-institutional aspects, policies and prospects. Journal of International Studies, 10(1): 255-266. https://doi.org/10.14254/2071-8330.2017/10- 1/18