



Digital Gap in Public Services to Support Development in the Coastal Area of Tangerang Regency

Toddy Aditya,^{1*} Achmad Chumaedi¹

¹Program Studi Ilmu Pemerintahan, Fakultas Ilmu Sosial dan Ilmu Politik, Universitas Muhamamdiyah Tangerang, Indonesia Email: toddy_aditya@umt.ac.id, memedchumeidy80@gmail.com

*Correspondence

Article History: Received: 09-06-2024, Revised: 08-11-2024, Accepted: 11-11-2024, Published: 31-12-2024

Abstract

The purpose of this research is to find out how to overcome the digital divide to support the realization of public services in coastal areas in Tangerang Regency. Public services in the coastal areas of Tangerang Regency must be designed in a way that can meet the various needs of the community while maintaining sustainable development. Various sectors, such as health, education, transportation, and infrastructure, fall under this category of services. Innovation in public services is needed to improve the efficiency and accessibility of these services. These innovations can help people overcome various problems and improve their overall quality of life. The theories used in this study are the digital divide, public services and sustainable development. The method used in this study uses a quantitative approach, the primary data in this study is a questionnaire that is distributed directly and online, while the author's secondary data is taken from various trusted third-party sources. The population in this study is residents of the coastal area of Tangerang Regency, with a sample of 400 respondents. Meanwhile, the data processing tool that will be used in this study is SEM-PLS. The results of the study explain that to overcome the digital divide through improving digital infrastructure and technological literacy, as well as ensuring the inclusive and equitable implementation of SERVQUAL, it is very important to achieve sustainable development in Tangerang Regency.

Keywords:

coastal areas; coastal communities; public service; sustainable development; the digital divide

Abstrak

Tujuan penelitian ini adalah untuk mengetahui bagaimana mengatasi kesenjangan digital untuk mendukung terwujudnya pelayanan publik pada wilayah pesisir yang ada di Kabupaten Tangerang. Pelayanan publik di wilayah pesisir Kabupaten Tangerang harus dirancang dengan cara yang dapat memenuhi berbagai kebutuhan masyarakat sambil mempertahankan keberlanjutan pembangunan. Berbagai sektor, seperti kesehatan, pendidikan, transportasi, dan infrastruktur, termasuk dalam kategori layanan ini. Inovasi dalam pelayanan publik diperlukan untuk meningkatkan efisiensi dan aksesibilitas layanan tersebut. Inovasi ini dapat membantu masyarakat mengatasi berbagai masalah dan meningkatkan kualitas hidup secara keseluruhan. Teori yang digunakan dalam penelitian ini adalah kesenjangan digital, pelayanan publik dan pembangunan berkelanjutan. Metode yang digunakan dalam penelitian ini menggunakan pendekatan kuantitatif, data primer dalam penelitian ini adalah kuesioner yang disebar secara langsung dan online, sedangkan data sekunder penulis ambil dari berbagai Source pihak ketiga yang terpercaya. Populasi dalam penelitian ini adalah penduduk wilayah pesisir Kabupaten Tangerang, dengan sampel sebanyak 400 orang responden. Sedangkan alat pengolah data yang akan digunakan dalam penelitian ini adalah SEM-PLS. Hasil penelitian menjelaskan bahwa untuk mengatasi kesenjangan digital melalui peningkatan infrastruktur digital dan literasi teknologi, serta memastikan penerapan SERVQUAL yang inklusif dan merata, sangat penting untuk mencapai pembangunan berkelanjutan di Kabupaten Tangerang.

Kata Kunci:

kesenjangan digital; masyarakat pesisir; pelayanan publik; pembangunan; wilayah pesisir



This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

Introduction

The coastal area of Tangerang Regency is located in the province of Banten which has 25 villages in 8 sub-districts of Mekar Baru, Kronjo, Kemiri, Mauk, Sukadiri, Pakuhaji, Teluknaga, Kosambi and has a coastline of 51.5 KM of the northern coastal area that needs special attention (BPS Kabupaten Tangerang, 2023). Various problems in coastal areas in general such as regional planning, housing and environmental improvements, sanitation, clean water, port arrangement and facilities and infrastructure as well as the lack of maximum BUMDes (Rangga & Syafani, 2023; Ridho et al., 2023). Currently, Tangerang district has a poor population of 7.12% of its total population of 272.35 thousand (Tangerang, 2021) and increased by 285.01 thousand (BPS Kabupaten Tangerang, 2023).

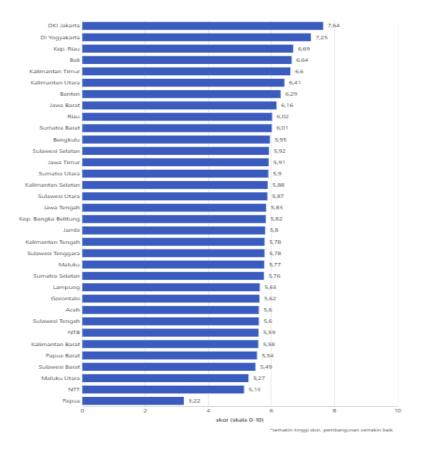


Figure 1. ICT Development Index in 34 Indonesia Provinces in 2023 Source: BPS Pusat, 2023

Toddy Aditya, Achmad Chumaedi/Digital gap in public services to support development in the coastal area of Tangerang Regency

Figure 1 shows the position of Banten Province in the "medium" category, and only 1 province whose development index is classified as "low", namely Papua (Dhahir, 2019). Meanwhile, Figure 2 shows that the Gini ratio figure of Tangerang Regency indicates that the gap between urban and rural areas (including coastal areas) of 0.368 is not in line with the existing fisheries potential to improve the economic conditions of coastal communities. The difference in development in cities and villages can be seen from the causes and impacts of slow development programs in the coastal areas of Tangerang Regency due to, among others, limited internet access to use digital public services, differences in the availability of technology, and lack of digital literacy (OECD, 2001; Vassilakopoulou & Hustad, 2021).

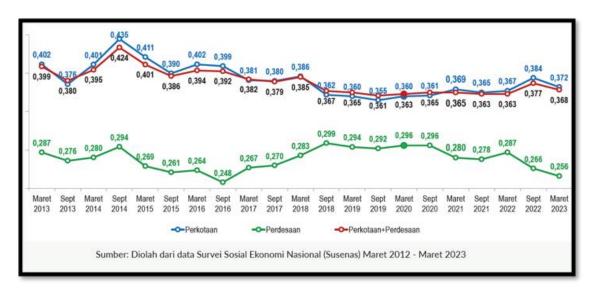


Figure 2. Gini Ratio in 2023 Tangerang Regency, Banten Province Source: BPS Banten, 2023

The digital divide is a critical issue faced by coastal communities in Tangerang Regency. Many residents in coastal areas still do not have adequate internet access, so they cannot use digital public services that are increasingly vital in this modern era. According to (OECD, 2001), Limited internet access can exacerbate social and economic inequalities, especially in regions that are already lagging behind in the development of technological infrastructure. In the context of Tangerang Regency, this limitation prevents coastal communities from getting the full benefits of public services offered digitally.

In addition to limited internet access, there are also significant differences in the availability of technology between urban and rural and coastal areas in Tangerang Regency. Urban areas are generally more advanced in terms of technological infrastructure and have better access to advanced technology and internet services (Castro & Lopes, 2022). In contrast, rural and coastal areas are often marginalized and far behind in technological development. Research by (Schinagl et al., 2023) highlighting that these technological gaps can deepen social and economic inequalities, making it increasingly difficult for rural and coastal areas to catch up with urban areas. The lack of digital literacy among coastal communities is also a significant challenge (Yeşilyurt & Vezne, 2023). Many residents have not mastered the effective use of digital technology to access public services. Research by (Liu & Zhou, 2023) emphasized that digital literacy is an essential basic skill in this digital era, where the inability to operate digital technology can lead to deeper social and economic exclusion. In Tangerang Regency, this lack of digital literacy means that many coastal residents cannot take advantage of digital public services, such as online education and digital health services, optimally.

Public services in the coastal area of Tangerang Regency must be designed to reach the various needs of the community while maintaining the sustainability of development. These services cover various fields such as health, education, transportation, and infrastructure. Innovation in public services is needed to improve the efficiency and accessibility of these services (Cui et al., 2022). Research (Döring, 2022) highlighting that innovation in public services can help address the challenges faced by society and improve the overall quality of life.

The impact of the digital divide on development in coastal areas includes limited access that affects education (Candrasari et al., 2022; Sukarjo & Nasionalita, 2022), missed job opportunities (Kurniawan & Antonius, 2019; Shaleha, 2020), and limited access to health services (Mubah et al., 2017; A. A. Putri, 2018). The solution to overcome the digital divide can be to build technological infrastructure in coastal areas (Aditya et al., 2023; Aditya & Rahmayanti, 2023), Organizing literacy training and education programs for the digital community (Aditya et al., 2021; Setyawan & Safar Dwi Kurniawan, 2020), and expanding the reach of technology access in rural and coastal areas (Aprian et al., 2023; Zulfiah Larisu et al., 2023).

The theme of research on coastal communities has been carried out with various focuses. Some of these include poverty alleviation in coastal areas as well as social, economic, and financial issues faced by coastal communities (Fitriani et al., 2023; Mukramin et al., 2023) (Aida et al., 2016; Azima Riskiya Sibarani et al., 2023; Juardi & Bimontoro, 2023; Ramayanti et al., 2021; Ratna et al., 2023; Ridho et al., 2023; Warkula & Uniberua, 2023). In addition, research by Aprian et al., (2023) also discussed marine fisheries quota-based policies in Indonesia which aim to manage marine resources in a sustainable manner. Another topic that is often studied is the empowerment of coastal communities, especially through increasing digital literacy to support access to information and technology (Amalia et al., 2021; Riupassa & Pesik, 2022; Zulfiah Larisu et al., 2023), Research by Daris et al., (2022) also includes the identification of types of conflicts in fishing as well as the analysis of the distribution of conflict areas and fishing levels in coastal areas.

In addition, research by Indrawasih & Pradipta, (2021) dan; Syahputra & Taufiq, (2021) discussing gender equality, especially the role of women in coastal communities, is an important issue. Study conducted by Ariski & Ratnasari, (2022) dan; Edison & Kurnianingsih, (2021) exploring the role of local institutions in supporting community development and entrepreneurship in coastal areas. Social vulnerability is also a topic that is widely discussed, considering that coastal communities often face high economic, environmental, and social risks, andfinally, a lot of research on legal and justice aspects for coastal communities is also being conducted, especially related to their access to legal protection and their rights as communities that depend on natural resources (Aguw et al., 2021; Putiamini et al., 2022).

The impact of the digital divide on development in Tangerang Regency is very significant. Limited internet access affects education, so many children in coastal areas face difficulties in obtaining access to online learning. According to research Marín & Castañeda, (2023), unequal access to online education can increase dropout rates and lower academic achievement. In addition, the digital divide also hinders job opportunities and business development in coastal areas, making it difficult for people to improve their standard of living (Steyn & Johanson, 2011). In the health sector, limited access to health information and digital medical services results in coastal residents not getting adequate services, which in turn affects the general health of the community. The purpose of this study is to find out how to overcome the digital divide to support the realization of public services in coastal areas in Tangerang Regency.

Research Methods

This study uses a quantitative research method with an explanatory survey approach (Haryono, 2016). The research was carried out in the coastal area of Tangerang Regency which includes 8 sub-districts. The population in the 8 sub-districts is 712,546 people, so the sample was obtained using the slovin formula with an error margin of 5% is 399.77 and then rounded to 400 people. The variables in this study are the digital divide, public services and sustainable development.

Primary data collection in this study uses a questionnaire that distributed directly to respondents, in addition to that the researcher also comportments direct observations and interviews with related sources. As for secondary data, the researcher received information from the Tangerang Regency BPS book, research articles, magazines, newspapers and social media. To be able to find out the demographics of all respondents, the author uses a software called SEM, so that it can find out how much composition in terms of age, gender, education level, marital status and occupation. These results can be expressed in the form of tables and pie charts and with percentages. PLS-SEM analysis usually consists of two sub-models, namely the measurement model or often called the outer model and the structural model or often called the inner model (Ramadiani, 2010).

Research Results

Data Collection

The following demographic data describe the characteristics of respondents based on age, gender, marital status, education level, occupation, gadget ownership, and duration of gadget use. The data indicate that the majority of respondents are men aged 30–36 years, married, employed, with junior high school education, and have owned a gadget for more than three years.

No	Description	Measurement	Percentage	Score
1	Age	Age range 30 to 36 years	23,5 %	94
2	Gender	Man	53 %	212
3	Marital Status	Married	68 %	272
4	Last Education	Junior High School	37,8 %	151
5	Occupation	Work	51,5 %	206
6	Have a Gadget (HP)	Have a gadget	89,3 %	357

Table 1.	Characteristics	of the	most respondents
----------	-----------------	--------	------------------

Toddy Aditya, Achmad Chumaedi/Digital gap in public services to support development in the coastal area of Tangerang Regency

7	Long time to have a Gadget (HP)	More than 3 years	44,5 %	178
n				

Age range 30 to 36 years, individuals are in a critical productive phase, where access to information and public services, such as health, education, and administration, is critical. However, the limitations of digital infrastructure and technological literacy are the main obstacles. This age group often faces difficulties in accessing services online, which can slow down the development process and improve the quality of life. Without adequate efforts to reduce the digital divide, the goal of inclusive and sustainable development in these coastal areas is difficult to achieve. Therefore, it is important to strengthen the digital infrastructure and improve the technological skills of the population, so that they can make more effective use of public services and support the overall development of the region.

Limited access to technology and the internet limits men's ability to obtain information and services that are essential for improving family well-being and supporting economic activity. These limitations also hinder their participation in government-run development programs, such as skills training or access to social assistance. In addition, men in coastal areas often work in the informal or fishing sectors, which increasingly demands the use of technology to increase productivity and access to markets. Without support to address the digital divide, men's ability to contribute to the development of coastal areas is limited, and this can impact economic stagnation and low quality of life in the area.

For married couples, especially those who already have children, limited access to digital technology can hinder their ability to access healthcare, education, and administrative services efficiently. For example, they may have difficulty enrolling their children in school, accessing information related to family health, or getting social assistance. These limitations can worsen the welfare of families and slow down the development process in coastal areas. Therefore, it is important to narrow the digital divide by increasing access and digital literacy for married couples, so that they can make optimal use of public services and contribute more effectively to the economic and social development of the coastal area of Tangerang Regency.

With limited education, their ability to utilize digital technology tends to be low, resulting in difficulties in accessing important information and government services that are now widely available online. These limitations limit their opportunities to actively participate in regional development, such as participating in training programs or accessing social assistance efficiently. In addition, the lack of digital literacy makes them more susceptible to errors in taking care of administrative documents or in understanding important health information. As a result, people with this junior high school education can be left behind in various aspects of life, from economic to social. To support inclusive development, there needs to be an effort to improve digital access and literacy for this group, so that they can better utilize public services and contribute to the progress of coastal areas.

Workers in both the formal and informal sectors often need quick and efficient access to administrative, health, and job-related information. This limited access can result in delays in obtaining business licenses, difficulties in obtaining health information, or limited opportunities to attend training and skill improvement. In addition, in this digital era, many jobs are starting to depend on technology, and the digital divide can make workers in coastal areas lose the opportunity to adapt to these changes. Reducing the digital divide through increased internet access and digital literacy is essential to ensure that workers in coastal areas can contribute to the development and well-being of their regions.

Without gadgets, it is difficult for people to access important information, such as government announcements, health services, and social assistance, which are now widely available online. This makes these groups more vulnerable to information isolation, as well as being cut off from opportunities that could improve their wellbeing, such as skills training or economic assistance. The absence of gadgets also limits their ability to participate in development programs, both in terms of administration and economic empowerment. As a result, coastal communities without gadgets are increasingly lagging behind in the current of modernization, which can widen social and economic disparities in the region. Therefore, efforts to provide access to gadgets and increase digital literacy are very important to support inclusivity in the development of coastal areas of Tangerang Regency.

Outdated gadgets often have limitations in terms of performance, such as slow internet access, inability to run the latest applications, and compatibility issues with digital platforms used for public services. This makes it difficult for people to access information, take care of administration, or take advantage of government programs that require more up-to-date technology. As a result, they may fall behind in obtaining health services, education, and social assistance that are essential to their well-being. This condition exacerbates the inequality between those who have the latest technology and those who are digitally behind. To support equitable development, it is important to provide solutions that can improve their access to more advanced technologies, including subsidy programs or device updates.

a. Validity and Reliability Analysis – Public Service (x1)

The reliability analysis demonstrates a high internal consistency, as indicated by Cronbach's Alpha value of 0.933 for 25 items. Table 3 provides item-total statistics, showing each item's contribution to the overall scale reliability, with corrected item-total correlations and potential changes in Cronbach's Alpha if an item were removed.

Cronbach's Alpha	N of Items
.933	25
Source: Data processing	results PLS-SEM, 2024

 Table 2. Reliability Statistics

		Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
TA1	76.9475	272.306	.450	.932
TA2	76.7725	267.880	.630	.930
TA3	76.7375	269.232	.532	.931
TA4	76.9600	270.219	.519	.931
TA5	76.9100	272.623	.419	.933
TA6	77.0975	263.522	.615	.930

Table 3. Item-Total Statistics

Toddy Aditya, Achmad Chumaedi/Digital gap in public services to support development in the coastal area of Tangerang Regency

RL1	76.9800	270.406	.568	.930
RL2	76.8325	268.380	.584	.930
RL3	77.0825	261.620	.615	.930
RL4	77.1225	262.579	.620	.930
RS1	77.0375	268.427	.519	.931
RS2	76.9475	268.777	.605	.930
RS3	76.8675	265.719	.615	.930
RS4	76.9675	267.666	.546	.931
RS5	77.0250	266.360	.619	.930
RS6	77.0675	263.061	.699	.928
EM1	77.2275	265.986	.600	.930
EM2	76.7300	269.601	.591	.930
EM3	76.6975	270.838	.521	.931
EM4	77.2075	262.285	.566	.931
EM5	76.8875	268.090	.563	.930
AS1	77.3375	265.432	.627	.930
AS2	77.2850	264.315	.635	.929
AS3	77.0925	265.568	.570	.930
AS4	77.2200	263.134	.635	.929

Table 2 and table 3 above are the output of validity and reliability tests for Public Service variables. All questions used in this variable have a validity value (*Corrected Item-Total Correlation*) greater than 0.300 so that it is declared valid. Meanwhile, the reliability value of this indicator is 0.933. This value is greater than 0.700 which is the minimum limit for reliability. Based on the above results, it is concluded that the Public Service variable has met the requirements of Validity and Reliability.

b. Validity and reliability analysis – The digital divide (x2)

Cronbach's Alpha

.798

The validity and reliability analysis for the digital divide (X2) shows a satisfactory internal consistency, with a Cronbach's Alpha value of 0.798 for six items. Table 5 details the item-total statistics, highlighting the corrected item-total correlations and the potential impact on Cronbach's Alpha if specific items are removed.

Source: Data processing results PLS-SEM, 2024					
Table 5. Item-Total Statistics					
	Scale Mean if	Scale Variance	Corrected	Cronbach's	
		if Item Deleted	Item-Total	Alpha if Item	
	Item Deleteu	II Item Deleteu	Correlation	Deleted	
PP1	15.9050	18.517	.598	.756	
PP2	15.4300	19.935	.471	.786	
PD1	15.6700	18.793	.602	.756	
PD2	15.5850	19.111	.542	.770	
KT1	16.0550	19.471	.545	.769	

Table 4. Reliability Statistics

N of Items

6

Toddy Aditya, Achmad Chumaedi/Digital gap in public services to support development in the coastal area of Tangerang Regency

KT2	15.9675	19.144	.559	.766
Source:	Data processin	g results PLS-S	SEM. 2024	

Table 4 and table 5 above are the output of the validity and reliability test for the Digital Gap Public Service variable. All questions used in this variable have a validity value (*Corrected Item-Total Correlation*) greater than 0.300 so that it is declared valid. Meanwhile, the reliability value of this indicator is *0.798*. This value is greater than 0.700 which is the minimum limit for reliability. Based on the results above, it is concluded that the Digital Gap variable has met the requirements of Validity and Reliability.

c. Validity and Reliability Analysis – Sustainable Development (Y)

The validity and reliability analysis for Sustainable Development (Y) indicates a high level of internal consistency, with a Cronbach's Alpha value of 0.943 for 25 items. Table 7 presents item-total statistics, illustrating the corrected item-total correlations and the potential effect on Cronbach's Alpha if specific items are removed.

Table 6.	Reliability	Statistics
----------	-------------	------------

Cronbach's Alpha	N of Items	
.943	25	
Source: Data process	sing results PLS	-SEM, 2024

			~	<u> </u>
	Scale Mean if	Scale Variance	Corrected	Cronbach's
		if Item Deleted	Item-Total	Alpha if Item
	Item Deleteu		Correlation	Deleted
SA1	75.1550	337.089	.543	.942
SA2	75.0800	335.843	.601	.941
SA3	74.8575	341.095	.484	.942
SA4	74.8300	335.445	.557	.941
SA5	74.9525	337.298	.528	.942
SA6	75.0775	333.275	.666	.940
EC1	75.3450	327.755	.630	.941
EC2	75.1050	329.603	.687	.940
EC3	75.1675	335.077	.585	.941
EC4	75.1600	327.122	.651	.940
EC5	75.3175	325.265	.660	.940
EC6	75.1250	329.187	.697	.940
EV1	75.0700	336.988	.576	.941
EV2	74.9250	337.498	.555	.941
EV3	74.8375	335.289	.563	.941
EV4	75.0525	330.797	.669	.940
EV5	75.2850	325.212	.708	.939
EV6	75.0750	327.217	.728	.939
IA1	75.2925	335.596	.590	.941
IA2	74.9500	331.687	.662	.940
IA3	74.9675	336.964	.520	.942
IA4	75.0825	333.359	.590	.941
IA5	75.1400	330.116	.610	.941

Table 7. Item-Total Statistics

IA6	75.0425	332.061	.655	.940
IA7	74.9075	331.458	.589	.941
Company Data and the DLC CENT 2024				

Table 6 and table 7 above are the output of the validity and reliability test for the Sustainable Development variable. All questions used in this variable have a validity value (*Corrected Item-Total Correlation*) greater than 0.300 so that it is declared valid. Meanwhile, the reliability value of this indicator is 0.943. This value is greater than 0.700 which is the minimum limit for reliability. Based on the above results, it is concluded that the Sustainable Development variable has met the requirements of Validity and Reliability.

d. Hypothesis Testing

The SEM-PLS method used in the test gave significant results, which showed that there was a significant influence of X1, and X2 on Y. More complete results of hypothesis analysis and testing can be seen in the following description:

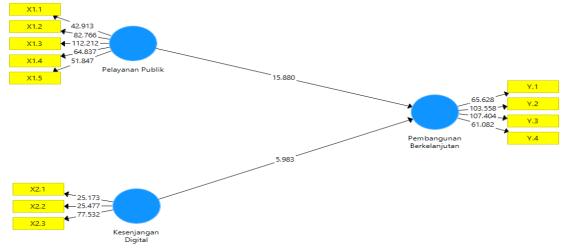


Figure 3. T-Value Chart Source: Data processing results PLS-SEM, 2024

Figure 3. shows the significance value of the hypothesized relationship between variables. Relationships or paths that have an absolute value greater than 1.96 are declared statistically significant. While the smaller ones were declared insignificant. While figure 4. below shows the weights or coefficients of the relationship between the variables obtained. The greater the value obtained, the stronger the relationship formed between the two variables. Briefly, it can be seen that the strongest relationship formed is the relationship between the variables of Public Services to Sustainable Development, with a relationship value of 0.625 or 62.5%. Meanwhile, the relationship between the Digital Gap variable and Sustainable Development is 0.254 or 25.4%. Meanwhile, the combined influence of the two, namely Public Services and the Digital Divide on Sustainable Development is 0.655 or 65.5%.

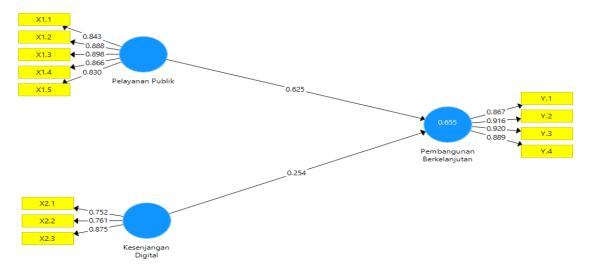


Figure 4. Path Coefficient Graph Source: Data processing results PLS-SEM, 2024

Table 8. Description of t value and path coefficient			
Description	Koefisien	T- Value	Kesimpulan
Public Service - > Sustainable Development	0.625	15.88	Signifikan
Digital Divide -> Sustainable Development	0.254	5.98	Signifikan
Source: Data processing results DIS SEM 2024			

Based on the table of analysis results above, the results of hypothesis testing show that:

- 1. Together, the two independent variables, namely Public Services and the Digital Divide, affect Sustainable Development by 0.655 or 65.5%.
- 2. The Public Service variable has a significant positive influence on Sustainable Development with a loading of 0.625.
- 3. The Digital Gap variable has a significant positive influence on Sustainable Development with a loading of 0.254.

Discussion

Public services are an important element in sustainable development, especially in developing areas such as Tangerang Regency. The application of the SERVQUAL (Service Quality) concept in public services is crucial because the quality of services provided by the government greatly affects the level of community welfare (Gathoni & Van der Walt, 2019). SERVQUAL measures service quality through five main dimensions: tangibles, reliability, responsiveness, assurance, and empathy. In Tangerang Regency, the challenge faced in implementing SERVQUAL is to ensure that all levels of society, including those in coastal areas, can access and benefit from quality public services.

However, the digital divide is a significant obstacle to quality public service efforts. The digital divide refers to the difference in access and ability to use

information and communication technology between individuals or groups in society (Vassilakopoulou & Hustad, 2021). In Tangerang Regency, especially in remote coastal areas, inadequate digital infrastructure and low digital literacy among the community cause difficulties in accessing public services that are increasingly switching to digital platforms. This creates inequality in public services, where those with better access to digital technology can utilize services more effectively, while those who are digitally marginalized are becoming increasingly marginalized (Kabakus et al., 2023).

The combination of the digital divide and the uneven implementation of SERVQUAL has a significant impact on sustainable development in Tangerang Regency. Sustainable development refers to efforts to meet the needs of the present without sacrificing the ability of future generations to meet their own needs. It covers economic, social, and environmental dimensions (Xu & Dai, 2024). When the quality of public services is uneven due to the digital divide, certain groups of people, especially those living in coastal or remote areas, are unable to access the health, education, and administrative services needed to improve their quality of life. This not only hampers them individually but also slows down the progress of development in the region as a whole.

For example, limited access to digital health services, such as telemedicine, can result in delays in disease diagnosis and treatment, negatively impacting the health of coastal communities (Shand et al., 2023). Likewise, the difficulty of accessing online education services limits learning opportunities for children and adolescents in the area, which in turn reduces their potential to contribute to future economic development. On the other hand, the low quality of administrative services due to technological limitations prolongs the bureaucratic process and reduces government efficiency, which can hinder investment and local economic growth (Røhnebæk & Breit, 2022).

To achieve sustainable development in Tangerang Regency, it is important to address the digital divide through improving digital infrastructure and technological literacy, as well as ensuring inclusive and equitable implementation of SERVQUAL. Local governments can work with the private sector and non-governmental organizations to expand internet networks to underserved areas, as well as provide digital literacy training for coastal communities. In addition, the government needs to ensure that public services provided digitally remain accessible to all levels of society, including those who do not have the latest technology or adequate digital literacy (Holm, 2024).

As part of a broader strategy, an inclusive approach to public service planning and implementation should take precedence (Ojasalo & Kauppinen, 2024; Sciepura & Linos, 2024). Public services include the development of services that are easily accessible to all groups of society, both digitally and non-digitally (Merlin-Brogniart et al., 2022; Wouters et al., 2023). For example, providing public service centers with free internet access in coastal villages, or introducing programs that support the use of simple technologies to access digital services.

Integration between improving the quality of public services (SERVQUAL) and reducing the digital divide is key in supporting sustainable development in Tangerang Regency. With this holistic approach, it is hoped that all community groups can participate in and benefit from the development process, which will ultimately encourage more equitable welfare and improve the overall quality of life.

Only by ensuring that every citizen has equitable access to quality public services can Tangerang Regency achieve sustainable and inclusive development.

Conclusion

The importance of overcoming the digital divide in Tangerang Regency, especially in coastal areas, to support sustainable development. Tangerang Regency has a fairly large coastal area with various infrastructure and economic problems. One of the main issues faced is the digital divide, which hinders coastal communities' access to digital public services, education, and economic opportunities. The digital divide in the coastal areas of Tangerang Regency is caused by limited internet access, differences in technology availability between urban and rural areas, and a lack of digital literacy among coastal communities. The impact is significant, especially in hindering access to education, job opportunities, and health services, ultimately deepening social and economic inequalities. The importance of innovation in public services to improve the efficiency and accessibility of services. This innovation is expected to help coastal communities overcome the various challenges they face and improve their overall quality of life. Thus, to achieve sustainable development in Tangerang Regency, it is necessary to make real efforts in overcoming the digital divide, improving technological infrastructure, and expanding digital literacy among coastal communities. This effort must be carried out in an inclusive and equitable manner so that all communities can benefit from sustainable development.

Addressing the digital gap in Tangerang Regency is crucial, but there are a number of obstacles in the way. Geographical difficulties, expensive expenses, and a lack of government funding sometimes hinder the development of infrastructure in coastal locations. The adoption of digital tools and services can also be slowed by cultural and societal issues, such as a lack of knowledge about the advantages of technology or aversion to change. Finding community driven and sustainable ways to get beyond these obstacles should be the main goal of future research. This entails investigating novel funding sources, researching the function of public-private partnerships in the construction of infrastructure, and comprehending the particular requirements of coastal communities in terms of digital literacy. Furthermore, studies should evaluate how digital inclusion initiatives affect social justice, economic empowerment, and environmental sustainability over the long run in coastal areas.

Acknowledgments

The authors would like to thank the Directorate of Research, Technology, and Community Service (DRTPM) of the Directorate General of Higher Education, Research, and Technology (Ditjen Diktiristek) of the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek) for financing this research.

Referensi

- Aditya, T., & Rahmayanti, R. (2023). IoT and Big Data Analytics for Smart Cities: A Global Perspective. *Urban Studies, 60*(16), 3369–3372. https://doi.org/10.1177/00420980231189394.
- Aditya, T., Febriyanti, D., & Rahmayanti. (2021). Puber as Artificial Intelligence for Education Policy in Bandung City. *IOP Conference Series: Earth and*

Environmental Science, *717*(1). https://doi.org/10.1088/1755-1315/717/1/012037.

- Aditya, T., Ningrum, S., Nurasa, H., & Irawati, I. (2023). Community needs for the digital divide on the smart city policy. *Heliyon*, *9*(8), e18932. https://doi.org/10.1016/j.heliyon.2023.e18932.
- Aguw, Y. O., Waha, C. J. J., & Karwur, D. B. (2021). Pemanfaatan Source Daya Perikanan Berbasis Penegakan Hukum dan Keadilan di Wilayah Laut dan Pesisir Provinsi Sulawesi Utara. *LexEtSocietatis*, 9(3), 67–79. https://doi.org/10.35796/les.v9i3.36436.
- Aida, G. R., Wardiatno, Y., Fahrudin, A., & Kamal, M. M. (2016). Dynamic model of economic value of mangrove ecosystems Tangerang Coastal Area, Banten. *Bonorowo Wetlands, 6*(1), 26–42. https://doi.org/10.13057/bonorowo/w060103.
- Alisjahbana, Salsiah, A., Yusuf, Anna, Kadasrisman, Maulana, & Larasati. (2018). Menyongsong SDGs Kesiapan Daerah-Daerah di Indonesia. Bandung: Unpad Press.
- Almagtome, A., Khaghaany, M., & Önce, S. (2020). Corporate governance quality, stakeholders' pressure, and sustainable development: An integrated approach. *International Journal of Mathematical, Engineering and Management Sciences*, 5(6), 1077–1090. https://doi.org/10.33889/IJMEMS.2020.5.6.082
- Amalia, R., Harry Kistanto, N., & Tiani, R. (2021). Analisis Strategi Pemberdayaan Nelayan di Kecamatan Wedung Kabupaten Demak. Jurnal Ilmiah Kajian Antropologi, 4(2), 20–30. https://doi.org/10.14710/endogami.4.2.20-30.
- Aprian, M., Adrianto, L., Boer, M., & Kurniawan, F. (2023). Re-thinking Indonesian marine fisheries quota-based policy: A qualitative network of stakeholder perception at fisheries management area 718. Ocean and Coastal Management, 243(July), 106766.
- Ariski, Y., & Ratnasari, W. G. P. (2022). Peran Kelembagaan Lokal dalam Aktivitas Pemberdayaan Masyarakat Pesisir (Studi UPTD Sentra Pengolahan Hasil Perikanan Pasia Nan Tigo). Jurnal Pemberdayaan Masyarakat, 10(1), 10–22. http://dx.doi.org/10.37064/jpm.v10i1.9921.
- Asih, S. N., Sucahyo, Y. G., Gandhi, A., & Ruldeviyani, Y. (2019). Inhibiting motivating factors on online gig economy client in Indonesia. In *International Conference on Advanced Computer Science and Information Systems, ICACSIS*, 349– 356. https://doi.org/10.1109/ICACSIS47736.2019.8979703.
- Badan Pusat Statistik. (2019). Indonesian Sustainable Development Goals (SDGs) Indicators. (Subdirectorate of Statistics Indicator (ed.); 1st ed.). CV. Nario Sari.
- Ben Yahia, N., Eljaoued, W., Bellamine Ben Saoud, N., & Colomo-Palacios, R. (2021). Towards sustainable collaborative networks for smart cities cogovernance. *International Journal of Information Management*, 56(October), 102037. https://doi.org/10.1016/j.ijinfomgt.2019.11.005
- Biermann, F., Hickmann, T., Sénit, C. A., Beisheim, M., Bernstein, S., Chasek, P., Grob, L., Kim, R. E., Kotzé, L. J., Nilsson, M., Ordóñez Llanos, A., Okereke,

C., Pradhan, P., Raven, R., Sun, Y., Vijge, M. J., van Vuuren, D., & Wicke, B. (2022). Scientific evidence on the political impact of the Sustainable Development Goals. *Nature Sustainability*, *5*(9), 795–800. https://doi.org/10.1038/s41893-022-00909-5

- Billi, M., Mascareño, A., & Edwards, J. (2021). Governing sustainability or sustainable governance? Semantic constellations on the sustainabilitygovernance intersection in academic literature. *Journal of Cleaner Production*, 279. https://doi.org/10.1016/j.jclepro.2020.123523
- BPS Kabupaten Tangerang. (2023). *Kabupaten Tangerang Dalam Angka 2023*. https://tangerangkab.bps.go.id/publication/2023/02/28/cf25f112b67f450a6 7dfbc33/kabupaten-tangerang-dalam-angka-2023.html.
- Candrasari, Y., Lestari, P., Claretta, D., & Sumardjijati, S. (2022). Digital Divide between Mother and Child in Parenting. In *Proceedings of the 3rd International Media Conference 2021* (IMC 2021), 174–181. https://doi.org/10.2991/assehr.k.220705.018.
- Castro, C., & Lopes, C. (2022). Digital Government and Sustainable Development. Journal of the Knowledge Economy, 13(2), 880–903. https://doi.org/10.1007/s13132-021-00749-2.
- Cui, X., Ma, L., Tao, T., & Zhang, W. (2022). Do the supply of and demand for rural public service facilities match? Assessment based on the perspective of rural residents. *Sustainable Cities and Society*, 82(January), 103905. https://doi.org/10.1016/j.scs.2022.103905.
- Daniel ChiguduMutize. (2020). Public sector corporate governance: Zimbabwe's challenges of strategic management in the wake of sustainable development. *Academy of Strategic Management Journal, 19*(1), 1–13. https://www.abacademies.org/articles/public-sector-corporate-governance-zimbabwes-challenges-of-strategic-management-in-the-wake-of-sustainable-development-9006.html.
- Daris, L., Massiseng, A. N. A., Fachri, M. E., Jaya, J., & Zaenab, S. (2022). The impact of fishermen's conflict on the sustainability of crab (Portunus pelagicus) resources in the coastal areas of Maros District, South Sulawesi, Indonesia. *Biodiversitas*, 23(10), 5278–5289. https://doi.org/10.13057/biodiv/d231037.
- De Guimarães, J. C. F., Severo, E. A., Felix Júnior, L. A., Da Costa, W. P. L. B., & Salmoria, F. T. (2020). Governance and quality of life in smart cities: Towards sustainable development goals. *Journal of Cleaner Production*, 253. https://doi.org/10.1016/j.jclepro.2019.119926.
- Derks, M., & Romijn, H. (2019). Sustainable performance challenges of rural microgrids: Analysis of incentives and policy framework in Indonesia. *Energy* for Sustainable Development, 53, 57–70. https://doi.org/10.1016/j.esd.2019.08.003.
- Dhahir, D. F. (2019). Rancangan Strategi Kominfo Dalam Upaya Mengurangi Kesenjangan Digital. Jurnal Penelitian Komunikasi dan Pembangunan, 20(2), 71-86. https://doi.org/10.31346/jpikom.v20i2.2235.

- Döring, M. (2022). 'Explain, but make no excuses': service recovery after public service failures. *Public Management Review*, 24(5), 790–808. https://doi.org/10.1080/14719037.2020.1864013.
- Edison, & Kurnianingsih, F. (2021). Penguatan Kewirausahaan Melalui Pendampingan Sistem E-Commerce Pada Desa Pesisir di Kabupaten Bintan. *Alfatina: Journal of Community Services, 1*(1), 27-34. https://journal.inspirekepri.org/index.php/JoCS/article/view/58.
- Farihin. (2022). The Influence of Digital Literacy on Administration Efficacy for Supervisor Teachers in Cirebon City in the Post-Pandemic. Journal of Social Studies Education Research, 13(4), 353–380. https://www.learntechlib.org/p/222975.
- Fitriani, Kinseng, R. A., Lubis, D. P., & Adhuri, D. S. (2023). Poverty and Livelihood Strategy of Small-Scale Fishers in Tanjung Kait, Banten. Sosial Ekonomi Kelautan dan Perikanan, 18(1), 117–131.
- Gathoni, N., & Van der Walt, T. (2019). Evaluating library service quality at the Aga Khan University library: Application of a total quality management approach. *Journal of Librarianship and Information Science*, 51(1), 123–136. https://doi.org/10.1177/0961000616679725.
- Haryono, S. (2016). *Metode SEM Untuk Penelitian Manajemen dengan AMOS* (H. Mintardja (ed.)). PT. Intermedia Personalia Utama.
- Holm, P. (2024). Impact of digital literacy on academic achievement: Evidence from an online anatomy and physiology course. *E-Learning and Digital Media*, *0*(0), 1–17. https://doi.org/10.1177/20427530241232489.
- Indrawasih, R., & Pradipta, L. (2021). Pergerakan Sosial Perempuan Pesisir dalam Memperjuangkan Hak Asasi Manusia dan Kesetaraan Gender. Satwika: Kajian Ilmu Budaya Dan Perubahan Sosial, 5(1), 105–117. https://doi.org/10.22219/satwika.v5i1.15537.
- Juardi, & Bimontoro, A. (2023). Analisis Interaksi Ekonomi Nelayan dan Pembangunan Center Point of Indonesia di Makassar. *Economics and Digital Business Review*, 4(1), 219–236.
- Kabakus, A. K., Bahcekapili, E., & Ayaz, A. (2023). The effect of digital literacy on technology acceptance: An evaluation on administrative staff in higher education. *Journal of Information Science*. https://doi.org/10.1177/01655515231160028.
- Khaled, R., Ali, H., & Mohamed, E. K. A. (2021). The Sustainable Development Goals and corporate sustainability performance: Mapping, extent and determinants. *Journal of Cleaner Production*, 311(May), 127599. https://doi.org/10.1016/j.jclepro.2021.127599.
- Kurniawan, S. D., & Antonius, A. S. (2019). Pengukuran Kesenjangan Digital Di Banyumas Untuk Mengetahui Kesiapan Masyarakat Dalam Memanfaatkan Smart City. In Seminar Nasional Edusainstek FMIPA UNIMUS, 308–314. http://prosiding.unimus.ac.id.

- Liu, B., & Zhou, J. (2023). Digital Literacy, Farmers' Income Increase and Rural Internal Income Gap. *Sustainability (Switzerland), 15*(14). 11422. https://doi.org/10.3390/su151411422.
- Mahesa, R., Yudoko, G., & Anggoro, Y. (2018). Platform Ecosystems for Indonesia Smart Cities. In International Conference on Computer, Control, Informatics and Its Applications: Recent Challenges in Machine Learning for Computing Applications, IC3INA, 34–39. https://doi.org/10.1109/IC3INA.2018.8629537
- Marín, V. I., & Castañeda, L. (2023). Developing Digital Literacy for Teaching and Learning. In *Handbook of Open, Distance and Digital Education, 1089–1108.* https://doi.org/10.1007/978-981-19-2080-6_64.
- Marques, T. M. G. (2021). Research on Public Service Motivation and Leadership: A Bibliometric Study. *International Journal of Public Administration*, 44(7), 591–606. https://doi.org/10.1080/01900692.2020.1741615.
- Merlin-Brogniart, C., Fuglsang, L., Magnussen, S., Peralta, A., Révész, É., Rønning, R., Rubalcaba, L., & Scupola, A. (2022). Social innovation and public service: A literature review of multi-actor collaborative approaches in five European countries. *Technological Forecasting and Social Change, 182*(May 2021). https://doi.org/10.1016/j.techfore.2022.121826.
- Morita, K., Okitasari, M., & Masuda, H. (2020). Analysis of national and local governance systems to achieve the sustainable development goals: case studies of Japan and Indonesia. *Sustainability Science*, *15*(1), 179–202. https://doi.org/10.1007/s11625-019-00739-z.
- Mubah, A. S., Wardahni, A., Ponsela, D. F., & Tsauro, M. A. (2017). Problem Dasar Kesenjangan Digital di Asia Tenggara. *Jurnal Global & Strategis*, *10*(2), 204. https://doi.org/10.20473/jgs.10.2.2016.204-220.
- Mukramin, S., Haniah, S., Nawir, M., Ismail, L., & Fatmawati. (2023). Poverty Alleviation of Bajo Ethnic Through Independet Learning, Independent Campus (ILIC) Program Based on Local Wisdom. *Jurnal Kebijakan Sosial Ekonomi Kelautan dan Perikanan, 13*(2), 141–153.
- Mustika, R. D., & Rahmayanti, K. P. (2019). Environmental Scanning: Creating Strategic Planning for the Education of Persons with Different Ability. *IOP Conference Series: Earth and Environmental Science*, 328(1). https://doi.org/10.1088/1755-1315/328/1/012051.
- Nurhayati, S., Dyah Umiyarni, P., & Syafe'i, M. (2019). A success model of E-health implementation in the service area of department of health of Banyumas Regency Indonesia. *Annals of Tropical Medicine and Public Health*, 22(11). https://doi.org/10.36295/ASRO.2019.221140.
- Oana, F., & Rakhyun, E. K. (2020). *Cherry-picking the Sustainable Development Goals: Goal Prioritization by National Governments and Implications for Global Governance.* Sustainable Development.
- OECD. (2001). Understanding The Digital Devide. In *The Organization for Economic Cooperation and Development* (OECD). https://doi.org/10.1007/978-1-4899-6477-9_25.

- Ojasalo, J., & Kauppinen, S. (2024). Public Value in Public Service Ecosystems. Journal of Nonprofit and Public Sector Marketing, 36(2), 179–207. https://doi.org/10.1080/10495142.2022.2133063.
- Omri, A., & Ben Mabrouk, N. (2020). Good governance for sustainable development goals: Getting ahead of the pack or falling behind? *Environmental Impact Assessment Review*, 83 (December 2019), 106388. https://doi.org/10.1016/j.eiar.2020.106388.
- Putiamini, S., Mulyani, M., Petala, M. P., Soesilo, T. E. B., & Karsidia, A. (2022). Social vulnerability of coastal fish farming community to tidal (Rob) flooding: a case study from Indramayu, Indonesia. *Journal of Coastal Conservation*, 26(2). https://doi.org/10.1007/s11852-022-00854-7.
- Putri, A. A. (2018). Pengelolaan Wilayah Pesisir di Desa Muara Kecamatan Teluk Naga Kabupaten Tangerang (Studi Kasus Program Gerakan Pembangunan Masyarakat Pantai kabupaten Tangerang Tahun 2015-2016). Skripsi. Universitas Sultan Ageng Tirtayasa. http://eprints.untirta.ac.id/939.
- Putri, J. K., & Sensuse, D. I. (2018). Obstacle factor analysis of E-Government implementation at the ministry of tourism. In *International Conference on Advanced Computer Science and Information Systems*, ICACSIS, 57–62. https://doi.org/10.1109/ICACSIS.2018.8618165.
- Rahman, M. M. (2021). Achieving Sustainable Development Goals of Agenda 2030 in Bangladesh: the crossroad of the governance and performance. *Public Administration and Policy*, 24(2), 195–211. https://doi.org/10.1108/PAP-12-2020-0056.
- Ramadiani, R. (2016). Structural equation model untuk analisis multivariate menggunakan lisrel. *Informatika Mulawarman: Jurnal Ilmiah Ilmu Komputer, 5*(1), 14-18. http://dx.doi.org/10.30872/jim.v5i1.48.
- Ramayanti, W., Sitompul, N., Sulistio, R., Marpaung, M. E., & Zahara, F. (2021).
 Perubahan Ekonomi dan Sosial Keagamaan Selama Pandemi Covid-19 pada Masyarakat Pesisir Pulau Simardan. *Mukadimah*, 5(1), 5–11. https://doi.org/10.30743/mukadimah.v5i0.4130.
- Rangga, K. K., & Syafani, T. S. (2023). Model Penyuluhan dan Strategi Pemberdayaan Masyarakat Pesisir Melalui Peningkatan Pemanfaatan Teknologi Informasi. Universitas Lampung.
- Ratna, Sulfiana, Arzad, M., Sangaji, R., Muna, Difinubun, W., Anwar, A., Kamaluddin, & Fahrizal, A. (2023). Pengembangan Ekonomi Wanita Nelayan Pesisir Pantai Pulau Raam Melalui Pengolahan Produk Perikanan. *Abdimas: Papua Journal of Community Service*, 5(2), 28–34. https://doi.org/10.33506/pjcs.v5i2.2566.
- Ridho, A., Siregar, A. M., Mahendra, A. F. R., Ginting, F. A., Ridwan, M., Sahputra, M., Lika, N. P., Tanjung, S. W., Chairiyah, T. A., & Ayu, D. (2023). Analysis of the Impact of Technological Advancements on the Socio-economic Status of Fisherman in Belawan. *Jurnal Kolaboratif Sains*, 6(7), 570–574. https://doi.org/10.56338/jks.v6i7.3677.

- Riupassa, P. A., & Pesik, A. (2022). The Consciousness of Digital Literacy; Its Opportunities, Challenges and Susceptibilities for Marine-Isle Communities (anIdea). In Seminar Nasional; Kedaulatan Dan Keamanan Pangan Berbasis Bisnis, 135–142.
- Røhnebæk, M. T., & Breit, E. (2022). 'Damned if you do and damned if you don't': a framework for examining double binds in public service organizations. *Public Management Review*, 24(7), 1001–1023. https://doi.org/10.1080/14719037.2021.1882542.
- Saleh, C. (2019). Citizen satisfaction with online passport service innovation in Indonesia within an electronic governance perspective. *International Journal of Management*, 10(6), 61–75. https://doi.org/10.34218/IJM.10.6.2019.007
- Schinagl, S., Shahim, A., Khapova, S., & van den Hooff, B. (2023). Digital security governance: What can we learn from high reliability organizations? In *Proceedings of the Annual Hawaii International Conference on System Sciences*, 2023-Janua, 5938–5948.
- Schulz, K. A., Gstrein, O. J., & Zwitter, A. J. (2020). Exploring the governance and implementation of sustainable development initiatives through blockchain technology. *Futures*, *122*(July), 102611. https://doi.org/10.1016/j.futures.2020.102611.
- Sciepura, B., & Linos, E. (2024). When Perceptions of Public Service Harms the Public Servant: Predictors of Burnout and Compassion Fatigue in Government. *Review of Public Personnel Administration*, 44(1), 116–138. https://doi.org/10.1177/0734371X221081508.
- Setyawan, S. D. K. dan A. A., & Safar Dwi Kurniawan, A. A. S. (2020). Implementasi Penggunaan Website dalam Pengukuran Kesenjangan Digital. *Media Aplikom, 12*(01), 49–60. https://journal.stikomyos.ac.id/index.php/jurnal-media aplikomi/index 49.
- Setyawati, D. N., & Fitriati, R. (2023). Digital Governance in Information Disclosure. *Jurnal Kebijakan Publik, 14*(1), 48-55. https://doi.org/10.31258/jkp.v14i1.8217.
- Shaleha, R. (2020). Tingkat Digital Divide Pada Perkuliahan Online di Masa Pandemi Covid-19; Perspektif Mahasiswa. In *Konferensi Nasional Pendidikan*, 170–174.

https://urbangreen.co.id/proceeding/index.php/library/article/view/31.

- Shand, R., Parker, S., Liddle, J., Spolander, G., Warwick, L., & Ainsworth, S. (2023). After the applause: understanding public management and public service ethos in the fight against Covid - 19. *Public Management Review*, 25(8), 1475–1497. https://doi.org/10.1080/14719037.2022.2026690.
- Sibarani, A. A. R., Asiyah, N., & Ayu, D. (2023). Hubungan Stratifikasi Sosial terhadap Variabel Ekonomi pada Masyarakat Nelayan. *Jurnal Kolaboratif Sains*, 6(7), 552–559. https://dx.doi.org/10.56338/jks.v6i7.3666.
- 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 and Management, 7*(1). https://doi.org/10.1080/23311975.2020.1735690.

- Steyn, J., & Johanson, G. (2011). *ICTs and sustainable solutions for the digital divide: Theory and perspectives* (J. Snavely (ed.); 1st ed.). IGI Global.
- Sukarjo, S. P., & Nasionalita, K. (2022). The Digital Gap Between Generation Y and Z in Bandung City High School Teachers in Online Learning During the Covid-19 Pandemic. *E-Proceeding of Management*, 9(2), 992–1007.
- Syahputra, A., & Taufiq. (2021). Ekonomi Perempuan Pesisir Gampong Ujong Blang. *Saree: Research in Gender Studies, 3*(1), 1–22. https://doi.org/10.47766/saree.v3i1.562.
- Tangerang, B. K. (2021). *Kabupaten Tangerang dalam Angka 2021*. BPS Kabupaten Tangerang.
- Vassilakopoulou, P., & Hustad, E. (2021). Bridging Digital Divides: a Literature Review and Research Agenda for Information Systems Research. Information Systems Frontiers, 25(3), 955–969. https://doi.org/10.1007/s10796-020-10096-3.
- Visseren-Hamakers, I. J., Razzaque, J., McElwee, P., Turnhout, E., Kelemen, E., Rusch, G. M., Fernández-Llamazares, Á., Chan, I., Lim, M., Islar, M., Gautam, A. P., Williams, M., Mungatana, E., Karim, M. S., Muradian, R., Gerber, L. R., Lui, G., Liu, J., Spangenberg, J. H., & Zaleski, D. (2021). Transformative governance of biodiversity: insights for sustainable development. *Current Opinion in Environmental Sustainability*, 53, 20–28. https://doi.org/10.1016/j.cosust.2021.06.002.
- Warkula, Y. Z., & Uniberua, S. H. (2023). Edukasi Pengelolaan Keuangan pada Keluarga Nelayan Desa Jerwatu Kecamatan Aru Utara. ABDI UNISAP: Jurnal Pengabdian Kepada Masyarakat, 1(2), 79–86. https://doi.org/10.59632/abdiunisap.v1i2.187.
- Wouters, S., Janssen, M., Lember, V., & Crompvoets, J. (2023). Strategies to advance the dream of integrated digital public service delivery in interorganizational collaboration networks. *Government Information Quarterly*, 40(1), 101779. https://doi.org/10.1016/j.giq.2022.101779.
- Xu, X., & Dai, M. (2024). Evaluation of Local Government Digital Governance Ability and Sustainable Development: A Case Study of Hunan Province. *Sustainability*, 16(14), 6084. https://doi.org/10.3390/su16146084.
- Yeşilyurt, E., & Vezne, R. (2023). Digital literacy, technological literacy, and internet literacy as predictors of attitude toward applying computer-supported education. *Education and Information Technologies*, 28(8), 9885–9911. https://doi.org/10.1007/s10639-022-11311-1.
- Zulfiah Larisu, Abdul Kadir, Muhammad Basri, Gunawan, & Arifin U. (2023). Pemberdayaan Masyarakat Melalui Literasi Digital Di Desa Tanjung Tiram Kecamatan Moramo Utara Kabupaten Konawe Selatan. Jurnal Pengabdian Kepada Masyarakat Nusantara, 4(4), 4766–4772.