**Improving Public Services: Development of Drinking Water Supply System in West Halmahera**

**\*Nditi S Baranyanan1,** **Moh. Rozikin2, Ainul Hayat3**

1,2,3Faculty of Administration Sciences, University of Brawijaya, East Java, Indonesia

**Correspondence**\*:

nditibaranyanan@student.ub.ac.id

|  |  |  |
| --- | --- | --- |
| **Abstract**    This study aims to describe and analyze the Development of a Drinking Water Supply System (SPAM) in improving public services and analyze what factors support and hinder the development of SPAM at the Public Works and Spatial Planning Office (PUPR) of West Halmahera Regency. The background of this research is related to the importance of improving the quality of public services in the field of drinking water through SPAM to meet the Minimum Service Standards (SPM) at the PUPR Office of West Halmahera Regency. Therefore, the author conducted research using qualitative descriptive methods and referred to several regulations related to the Development of Drinking Water Supply Systems (SPAM). The results showed that in the physical (technical) aspect, Piping Network SPAM (JP) which includes New Development, Improvement, and Expansion, in West Halmahera Regency has undergone development although not so significant, and for Non-Piping Network SPAM (BJP) has not been developed so far. Non-physical aspects include institutional aspects, management aspects, financial aspects, community role aspects, and legal aspects.  **Keywords**: Development of Drinking Water Supply System (SPAM), Public Services, Minimum Service Standards (SPM), PUPR Office of West Halmahera District.   |  |  | | --- | --- | |  | **Journal Of transformative Governance and Social Justice (J-TRAGOS)**  [E-ISSN XXXX-XXXX](http://issn.pdii.lipi.go.id/issn.cgi?daftar&1472787722&1&&), [P-ISSN XXXX-XXXX](http://issn.pdii.lipi.go.id/issn.cgi?daftar&1472787722&1&&)  Volume. 1, No.1 2023  DOI: Prefix 10.26905  Received: (filled by admin) Revised: (filled by admin) Accepted: (filled by admin) Published: (filled by admin)  Published by the **Department of Public Administration, Faculty of Social and Political Sciences, University of Merdeka Malang, Indonesia.** | |

**Introduction**

The provision of public services by local governments is a critical aspect of governance, with implications for citizen satisfaction and overall societal well-being (Moon, 2002). Furthermore, Bordogna & Neri (2014) highlight the impact of austerity policies on local government employees and the provision of public services (Bordogna & Neri, 2014). This underscores the multifaceted effects of macroeconomic policies on local service delivery. In the context of Indonesia, the quality of public services in local governments is a subject of scholarly inquiry. A study by Muluk et al. (2021) aims to identify the real role of local governments in protecting and enhancing public services for all, addressing a gap in understanding the landscape of inclusive public service innovation (Muluk et al., 2021). Additionally, Kristanti & Yudiatmaja (2022) discuss the challenges faced by local governments in providing quality public services following the decentralization in Indonesia, emphasizing the shift in responsibility from the central government to local authorities (Kristanti & Yudiatmaja, 2022).

As is known, the Regional Government in carrying out affairs has a relationship with the Central Government, the relationship includes authority, public services, finance, and the use of natural resources and other resources. Concurrent Government Affairs is divided into Compulsory Government Affairs and Elective Government Affairs. Relating to Compulsory Government Affairs organized by Regional Governments are further divided into government affairs related to basic services and affairs not related to basic services. (KepmenPAN No. 63, 2003).

In carrying out the public interest, public service providers must have public service standards. Therefore, the implementation of local governments must give priority to implementation based on Minimum Service Standards. Minimum Service Standards abbreviated as SPM are provisions regarding the type and quality of basic services which are Mandatory Government Affairs that every citizen is entitled to at a minimum. , one of the things included in the Compulsory Affairs of Basic Services is Public Works and Spatial Planning (Law No. 23, 2014).

The government in the 2020-2024 RPJMN has mandated several matters related to infrastructure, especially in the field of drinking water, including 100% (percent) of adequate drinking water, including 15% (percent) access to safe drinking water, and 30% (percent) access to piped drinking water. Based on the target mandated by the government and data obtained from the National Socioeconomic Achievement Survey (Susenas) shows that the percentage of households that have access to adequate drinking water in 2020 is 90.21 percent. In the last 3 (three) years it was 2.46 percent. Meanwhile, the increase in rural areas (2.79 percent) was slightly higher when compared to urban areas (1.88 percent). Despite the increase, this indicator needs to be monitored continuously because the increase is still considered slow when compared to the target to be achieved. (RPJMN, 2020).

The provision of drinking water is one of the basic services that is very important to be fulfilled because it is closely related to the basic needs of people's lives. The priority of Drinking Water Supply System Development (SPAM) by the PUPR Strategic Plan consists of 1). New SPAM Development, including the construction of new SPAM units in areas that have not received SPAM services; 2). Increased SPAM, including increasing production capacity in areas that have received SPAM services; 3). Expansion of SPAM, including handling the functioning of SPAM through idle capacity utilization programs (piping networks) (www.ciptakarya.pu.go.id/pspam).

The policy direction for the development of the Drinking Water Supply System (SPAM) for the fiscal year 2024 includes discussing the basis of SPAM implementation policies, challenges, opportunities, and strategic issues, policies and strategies for implementing SPAM, and the role of Regional Governments. Challenges and strategic issues in the development of services at the PUPR Office of West Halmahera Regency, especially in the Drinking Water Sector, are that the community has not been fully served by clean and safe drinking water facilities and infrastructure. In addition, there are limited funds so the current development, development, and rehabilitation programs are only based on priority scales (Renstra DPUPR West Halmahera Regency, 2021).

Based on data collected by the PUPR Office of West Halmahera Regency in 2020-2022, the percentage of households accessing Clean Drinking Water according to Sub-District, it is known that from 9 (Nine) Districts spread across West Halmahera Regency, most have accessed Clean Drinking Water, but the number and percentage of Clean Drinking Water access still do not meet the target mandated by the Government. Such as in East Jailolo District, Sahu District, Ibu District, and Loloda District whose percentage is below 50% (percent). In addition, based on the results of the physical and financial realization report of the PUPR Office of West Halmahera Regency in 2022, it is known that there are 2 (two) work packages allocated for the development of SPAM, namely SPAM JP Desa Laba Besar Loloda District and SPAM JP Desa Nanas Desa Ibu Selatan. The type of funding is obtained from the Special Allocation Fund (DAK) for Drinking Water. Given the weak regional fiscal, the development of SPAM has not received special attention from the Regional Government. Based on the above, a strategy or model for the development of the Drinking Water Supply System (SPAM) is needed to achieve optimal equity and improvement of public services, it is also necessary to develop regulations/rules as a reference for Regional Governments and Organizers, such as the SPAM Master Plan (RISPAM) and the SPAM Prosecutor of West Halmahera District.

**Literature Review**

To comprehensively review the role of local government in public service, it is essential to consider various aspects such as service delivery, governance challenges, public service innovation, and the impact of digital transformation. The literature provides insights into the challenges faced by local governments, the strategies to address them, and the implications for public service delivery. Bennet (Year) distinguishes local governments as community-based organizations that articulate political participation and as agents close to consumers for the delivery of services. This distinction highlights the multifaceted role of local governments in engaging with the community and delivering essential services (Bel & Warner, 2014).

The study by (Year) emphasizes the impact of inter-municipal cooperation on costs and public service delivery. It sheds light on the expectations and evidence related to austerity measures and devolution, providing insights into the dynamics of local government collaboration and its implications for service provision ("Quality of Public Services in Local Governments in Indonesia: A Study of Capital Expenditures and Government Internal Control Systems", 2022). Furthermore, (Year) discusses the effects of austerity policies on social dialogue and public services in Italian local government. This study underscores the multifaceted impact of government policies on local government employees, employment relations, and the provision of public services, offering valuable insights into the challenges faced by local governments in maintaining service quality amidst economic constraints (Bordogna & Neri, 2014).

The quality of public services in local governments in Indonesia is a critical aspect that directly impacts the well-being of the citizens. Several studies have been conducted to understand the factors influencing the quality of public services and the financial performance of local governments in Indonesia (Furqan et al., 2020). analyzed the effect of audit findings and recommendations on the quality of financial reports and public services in the context of applying accrual accounting systems to local government in Indonesia (Furqan et al., 2020; Dewi et al., 2019). highlighted the importance of an effective internal control system in producing quality financial statement information that supports the improvement of financial statement information quality (Dewi et al., 2019; Saragih, 2022). examined the influence of local government capital expenditures, internal supervision, and wealth on human development in Indonesian local governments (Saragih, 2022; Sunardi, 2021). empirically tested the role of the quality of the internal control system in strengthening the relationship between financial report quality and local government performance in Indonesia (Sunardi, 2021; Setyawan & Gamayuni, 2020). aimed to determine differences in the quality of financial reporting of local governments in Indonesia before and after the implementation of the e-budgeting system and government internal control systems (Setyawan & Gamayuni, 2020; Kiswanto et al., 2020). examined the factors influencing local government internal control weakness, including leverage, locally generated revenue, capital expenditure, complexity, and the previous year's internal control weaknesses findings (Kiswanto et al., 2020).

The development of drinking water supply systems plays a crucial role in improving public services, aligning with the Sustainable Development Goals (SDGs) and national targets for universal and equitable access to drinking water services (Prakoso & Notodarmojo, 2018). Sustainability characteristics and criteria are essential for the sustainable development and management of local drinking water supply systems, highlighting the importance of addressing challenges and trade-offs (Engelenburg et al., 2020). Furthermore, infrastructure development, such as drinking water supply systems, is instrumental in economic development policies, particularly in industrial and urban expansion (Kamaludin et al., 2022).

**Method**

This research uses qualitative research methods with descriptive research types. In data collection techniques, the author uses four kinds of techniques, namely observation, interviews, and documentation. Meanwhile, in analyzing data, using three lines of qualitative analysis according to Miles and Huberman (1992), namely data reduction, presentation, and conclusions. The author applies this method to analyze and describe the ideal Drinking Water Supply System (SPAM) development model in improving public services, as well as analyze and describe what factors support and hinder SPAM Development at the PUPR Office of West Halmahera Regency. The focus of this research is on the Development of a Drinking Water Supply System to improve public services at the PUPR Office of West Halmahera Regency, by referring to Government Regulation Number 16 of 2005 concerning the Development of SPAM and PUPR Regulation Number 13 of 2013 concerning National Policy and Strategy for the Development of Drinking Water Supply Systems (KSNP SPAM).

**Result and Discussion**

**Result**

West Halmahera Regency, whose capital is in Jailolo, is characterized by an archipelago area with a sea area of 12,462.60 km2 (84.1 percent), larger than the land area of 2,361.56 km2 (15.9 percent), with an island cluster development model. In general, the hydrological condition of West Halmahera Regency consists of rivers, lakes, and ground surface water. The number of rivers is 11 (eleven), the number of lakes is 4 (four), and the number of springs is 15 (fifteen), each of which is spread over several glasses in Halbar Regency (West Halmahera In Numbers, 2022).

Based on data compiled by the Central Statistics Agency (BPS), the increase in population in 2021 is 134,630 people and spread throughout West Halmahera Regency. while the population density in West Halmahera Regency in 2021 is 60.74 people/km2. Relatively rapid population growth brings logical consequences. In another dimension, population growth will cause several problems related to social availability, quantity, and quality of adequate basic services, as well as basic drinking water services. The table below describes the percentage of households that have accessed clean drinking water:

Table 1. Percentage of households accessing Clean Drinking Water by District in West Halmahera Regency in 2020

A table with numbers and text

Description automatically generated

Sumber : Renstra Dinas PUPR Line. Halbar, 2021

From the data above, it is known that several sub-districts in West Halmahera Regency have mostly been served by clean drinking water sources, but in some other sub-districts, they are still not fully served. Such as in Sahu District, Ibu District, South Ibu District, Loloda District, and East Jailolo District where the percentage is below 50% (percent). Based on data from the Minimum Service Standard (SPM) of the Public Works and Spatial Planning Office of West Halmahera District, with Basic Service Types &; Sub Activities: Services to meet the basic needs of Drinking Water. Known Basic Service Standards with Indicators: a). The availability of access to safe drinking water through the expansion of JP SPAM and the utilization of built SPAM idle capacity has a percentage value of 85%. And b). Availability of Access to Safe Drinking Water through New Development for Areas that do not yet have Drinking Water services, with a percentage of 80%. In addition, the performance data of the PUPR Office of West Halmahera Regency on the Performance indicator of drinking water facilities and infrastructure that have been built is at a percentage of 63.6% (percent), where the development target is 11 (eleven) villages, and has only been realized as many as 7 (seven) villages.

On the Physical Aspect (Technique), it was found that: The development of the Piping Network Drinking Water Supply System (SPAM JP) in West Halmahera Regency has increased and is included in the priority program category of the PUPR Office of West Halmahera Regency, this is because the need for Drinking Water through Piping Network SPAM in West Halmahera Regency is relatively high. In addition, the development of the SPAM Piping Network in West Halmahera Regency has so far not been fully evenly distributed and has not met the target of 100% Safe Drinking Water mandated by the Government.

There is a Non-piped Drinking Water Supply System (SPAM BJP) so far still not included in the priority program of the PUPR Office of West Halmahera District, this is because the need for fulfillment of BJP SPAM is still relatively low and most of the BJP SPAM has been managed or utilized by the community in a self-managed manner with assistance from the Regional Government through the PUPR Office and the Central Government through the PUPR Ministry for Drinking Water. However, the BJP's SPAM Development in West Halmahera District is still being developed, tailored to the needs of the community and budget capacity.

In the Non-Physical Aspect, it was found that: Constitutional Aspects. In improving the institutional capacity of SPAM organizers, the PUPR Office of West Halmahera Regency has so far not fully implemented the Norms, Standards, Procedures, and Criteria (NSPK), the challenges faced are still weak institutional capabilities and the implementation of SPAM by the principles of *good corporate governance,* where the implementation of SPAM is expected to be able to be transparent, participatory, and accountable. Therefore, it is necessary to plan institutional strengthening by adjusting the structure and institutional authority of SPAM implementation in West Halmahera District.

Management Aspects. Human Resource Management (HR) at the PUPR Office of West Halmahera Regency has been well organized. However, the obstacle faced is still the weak human resource capacity at the PUPR Office of West Halmahera Regency. So it is necessary to strengthen the capacity of human resources by conducting coaching to increase the capacity and quality of human resources in the development of SPAM in West Halmahera District.

Financial Aspect. In the financial aspect, the PUPR Office of West Halmahera Regency received funding assistance from the central government (Ministry of PUPR) through the Special Allocation Fund (DAK) for Drinking Water, which was allocated for the development of SPAM in West Halmahera District. Meanwhile, funding from local governments is still not optimal, because it is constrained by low regional fiscal capabilities. However, the Regional Government continues to support the SPAM development program in the Field of Copyright of West Halmahera Regency, by submitting interest and willingness to meet *the Readiness Criteria* to the Directorate General of Copyrights of the Ministry of PUPR for the optimization of SPAM IKK Jailolo and SPAM IKK Loloda in West Halamhera Regency.

Legal Aspects. The role of the community in encouraging the increase in the coverage of drinking water services in West Halmahera Regency is very high, this is shown by the increasing proposal for the fulfillment of drinking water services in several sub-districts in Musrenbang West Halmahera Regency. On the other hand, rural SPAM Organizing institutions are considered still weak which results in the vulnerability of the sustainability of SPAM that has been built. So far, the PUPR Office of West Halamhera Regency has not conducted direct coaching to community groups on guidelines and arrangements for Community-Based SPAM Development. Due to the reach of the PUPR Office of West Halmahera Regency to the community, the development of SPAM is still limited both in terms of accessibility and in terms of funding.

Aspects of Community Roles. In the legal aspect, the PUPR Office of West Halmahera Regency has so far fully functioned as a regulator, this is shown by the implementation of the Drinking Water Supply System Master Plan (RISPAM) in West Halmahera Regency since 2016, and in 2023 the preparation of the SPAM Master Plan (RISPAM) has been proposed. What is still an obstacle at this time is that the NSPK from the Central Government has not been followed up to become an arrangement in the Regions. In addition, there are still incomplete SPAM Development planning documents (Master Plan, SPAM Development Policy and Strategy, Feasibility Study, and Technical Planning) that are incomplete and do not meet technical rules. Based on the explanation above, the Development of the Drinking Water Supply System (SPAM) in West Halmahera Regency must refer to Government Regulation Number 16 of 2005, concerning the Development of Drinking Water Supply Systems and PUPR Minister Regulation Number 13 of 2013, concerning National Policies and Strategies for the Development of Drinking Water Supply Systems (KSNP SPAM).

**Discussion**

The development of a drinking water supply system is crucial for improving public services and achieving sustainable development goals (Prakoso & Notodarmojo, 2018). emphasize the need for infrastructure analysis to enhance the drinking water supply system, aligning with the Long-Term Plan Targets on Water Supply and the Sustainable Development Goals (SDGs). Furthermore, Hanim (2018) discusses the positive impact of decentralization on the implementation of the drinking water supply system, highlighting the importance of political and economic factors in this development (Engelenburg et al., 2020). stress the significance of sustainability characteristics in assessing the challenges and trade-offs inherent in the sustainable development of local drinking water supply systems.

Moreover, Hodgson & Manus (2009) provide a framework for understanding the entire water supply system and the operational control necessary for optimizing drinking water quality and protecting public health (Arsana et al., 2022). emphasize the role of community participation in the development of drinking water supply systems, underscoring the importance of local involvement (Kamaludin et al., 2022). highlight the link between infrastructure development, such as drinking water supply, and economic development policy, including industrial development and urban expansion.

In addition, Hidayatno et al. (2015) stress the need for comprehensive risk management in the investment of drinking water supply system development, considering financial, environmental, and institutional aspects (Shao et al., 2017). emphasize the necessity of accelerating the establishment of drinking water security projects to meet government requirements and ensure drinking water security, particularly in rural areas (Dejus et al., 2017). discuss the development of early warning systems to enhance the safety and reliability of drinking water supply systems, focusing on contamination event detection methods. Overall, these references collectively underscore the multifaceted nature of developing a drinking water supply system, encompassing infrastructure analysis, sustainability, community participation, risk management, and the broader socio-economic implications. The synthesis of these perspectives provides a comprehensive understanding of the importance of the drinking water supply system in improving public services and contributing to sustainable development.

**Conclusion**

The development of the Drinking Water Supply System (SPAM) in improving services at the PUPR Office of West Halmahera Kabuapten must refer to Government Regulation Number 16 of 2005, concerning the Development of Drinking Water Supply Systems, and PUPR Minister Regulation Number 13 of 2013, concerning National Policies and Strategies for the Development of Drinking Water Supply Systems (SPAM).

Physical Aspect (Technique). It is necessary to increase safe access to drinking water for all communities in West Halmahera Regency through SPAM Piping and Non-Protected Piping Networks to meet the minimum service needs at the PUPR Office of West Halmahera Regency. With an action plan, namely developing SPAM following the pattern of regional development that has been determined in the Regional Spatial Plan (RTRW).

Non-Physical Aspects. In the institutional aspect, namely by reviewing legislation related to institutions and also the existing organizational structure of the West Halmahera Regency PUPR Office, as well as making institutional development plans that can manage the planned SPAM, as well as improving the function of the West Halmahera Regency PUPR Office as a regulator. In the management aspect, namely by strengthening the capacity of human resources in the PUPR Office of West Halmahera Regency, strengthening the role and function of the PUPR Office of West Halmahera Regency, and applying the principles *of Good Corporate Governance* for the operators of the Drinking Water Supply System (SPAM). In the financial aspect, namely by increasing the internal financial capability of the PUPR Office of West Halmahera Regency, increasing the commitment of the Government and Regional Governments in funding the development of the Drinking Water Supply System (SPAM), and increasing funding through the acquisition of non-government funds, such as domestic and foreign loans and grants. In the aspect of the role of the community, namely by developing a Drinking Water Supply System (SPAM) through a community-based drinking water development program. Increase the potential of the community to be optimally empowered, and the Regional Government (Dinas PUPR) provides direct guidance to community groups in the Development of Drinking Water Supply Systems (SPAM). In the legal aspect, namely by making regulations that support the development of the Drinking Water Supply System (SPAM), such as making SPAM Development planning documents which include SPAM Master plans, feasibility studies, and technical planning as well as the SPAM Attorney General of West Halmahera District.

**References**

Arsana, I.G et al., 2022. Status of raw water management sustainability based on local wisdom on rural water supply in Bali, Indonesia. civil engineering and architecture, 10(7), 3118-3134. <https://doi.org/10.13189/cea.2022.100725>

Bordogna, Lorenzo & Neri, Stefano. 2014. Austerity policies, social dialogue, and public services in Italian local government. transfer european review of labour and research, 20(3), 357-371. <https://doi.org/10.1177/1024258914535548>

Bel, R., & Warner, M. (2014). Should we worry about the fiscal or the current account balance? Journal of Economic Dynamics and Control, 49, 54-69.

Dewi, Ni Kadek I.S. et al., 2019. Factors influencing the information quality of local government financial statements and financial accountability. management science letters, 1373-1384. <https://doi.org/10.5267/j.msl.2019.5.013>

Dejus, Sandis et al., 2017. On-line drinking water contamination event detection methods. environment technology resources proceedings of the international scientific and practical conference, 1, 77. https://doi.org/10.17770/etr2017vol1.2627

Engelenburg, Jolijin V. et al., 2020. Sustainability characteristics of drinking water supply.. <https://doi.org/10.5194/dwes-2020-8>

Furqan, Andi C. et al., 2020. The effect of audit findings and audit recommendation follow-up on the financial report and public service quality in Indonesia. international journal of public sector management, 33(5), 535-559. <https://doi.org/10.1108/ijpsm-06-2019-0173>

Hanim, Wasifah. 2018. The implementation of the drinking water supply system in the decentralization era. trikonomika, 17(2), 59. <https://doi.org/10.23969/trikonomika.v17i2.1434>

Hidayatno, Akhmad et al., 2015. Risk impact analysis on the investment of drinking water supply system development using project risk management. international journal of technology, 6(5), 894. <https://doi.org/10.14716/ijtech.v6i5.1764>

Hodgson, Kim J & Manus, Leonardo. 2009. A drinking water quality framework for South Africa. water sa, 32(5). <https://doi.org/10.4314/wsa.v32i5.47853>

Keputusan Menteri Pemberdayaan Aparatur Negara (KepMenPAN) No 63 tahun (2003). *tentang Pedoman Umum Penyelenggaraan Publik*.

Moon, M. Jae. 2002. The evolution of e‐government among municipalities: rhetoric or reality? public administration review, 62(4), 424-433. <https://doi.org/10.1111/0033-3352.00196>

Muluk, M.R. Khairul et al., 2021. The landscape of inclusive public service innovation in Indonesian local government. <https://doi.org/10.2991/aebmr.k.210928.090>

Kristianti, Dwi & Yudiatmaja, Wayu Eko. 2022. Antecedents of work outcomes of local government employees: the mediating role of public service motivation. policy & governance review, 6(3), 247. <https://doi.org/10.30589/pgr.v6i3.491>

Keputusan Menteri Pemberdayaan Aparatur Negara (KepMenPAN) No 63 tahun (2003). *tentang Pedoman Umum Penyelenggaraan Publik*.

Kiswanto, et al., 2020. Factors influencing the weaknesses of internal control of local governments in Indonesia. humanities & social sciences reviews, 8(1), 122-129. <https://doi.org/10.18510/hssr.2020.8118>

Kamaludin, Tutang M et al., 2022. Risk management in the development of a regional drinking water supply system. IOP conference series earth and environmental science, 1075(1), 012038. <https://doi.org/10.1088/1755-1315/1075/1/012038>

Miles, Mattew B dan Amichael Huberman. (2007). *Analisis Data Kualitatif Buku Sumber tentang Metode-Metode Baru.* Terjemahan Tjetjep Rohendi Rihisi. Jakarta: Universitas Indonesia.

Pemerintah Republik Indonesia (2014). Undang-undang No 23 Tahun 2014 tentang Pemerintah Daerah.

Prakoso, Satrio B & Notodarmojo, Suprihanto. 2018. Analysis of drinking water supply system improvement using fuzzy ahp(case study: Subang local water company). matec web of conferences, 147, 04002. <https://doi.org/10.1051/matecconf/201814704002>

Saragih, Jopinus. 2022. Local government capital expenditure, internal supervision, wealth and human development: evidence from Indonesia. jurnal dinamika akuntansi dan bisnis, 9(1), 89-106. <https://doi.org/10.24815/jdab.v9i1.23562>

Sunardi. 2021. The role of government internal control system quality in moderating the relationship between financial reports quality and local government performance. account and financial management journal, 06(06). <https://doi.org/10.47191/afmj/v6i6.03>

Setyawan, Wahyu & Gamayuni, Rindu R. 2020. The quality of financial reporting and internal control system before and after the implementation of e-budgeting in Indonesia's local government. Asian journal of economics business and accounting, 22-31. <https://doi.org/10.9734/ajeba/2020/v14i330194>

Shao, Weiwew et al., 2017. Study on the countermeasures of ensuring drinking water security in Shanshan county of Xinjiang autonomous region, china.. <https://doi.org/10.3390/ecws-2-04941>

Umum, D. P. 2021. *Rencana Strategis (RENSTRA) Dinas Pekerjaan Umum & Penataan Ruang Kab. Halmahera Barat Tahun 2016-2021*.