

Public Understanding Level In Aceh Besar Regency Regarding Building Approval (PBG)

Rais Tamim Irham*, Abdullah, Mubarak

Universitas Syiah Kuala, Indonesia

Email: raistamimirham1996@gmail.com*

Keywords

IMB, PBG, SIMBG, community understanding, socialization, Aceh Besar

ABSTRACT

The transition of nomenclature and procedures from Building Permits (IMB) to Building Approvals (PBG) requires an adequate level of public understanding for these policies to be implemented effectively. In Aceh Besar Regency, the allegedly low level of understanding has implications for permit compliance, as well as potential legal and safety issues. This study aims to identify the level of understanding of the people of Aceh Besar Regency towards Building Approvals (PBG). The study employs a quantitative method through the distribution of questionnaires to 100 building owners who do not possess PBG, using proportionate stratified random sampling and purposive sampling techniques. The instrument applies seven comprehension indicators measured using the Guttman scale and is analyzed descriptively and quantitatively. The results show that the majority of respondents were not aware of changes in nomenclature, the obligation to obtain PBG, the management mechanism through the Building Management Information System (SIMBG), the function of PBG, the procedures for application, the responsible authority, and the validity period, with a mean variable level of understanding of 0.187 (category: not knowing). The practical implications of this study indicate an urgent need for targeted socialization, simplified public communication, and technical assistance programs for building owners to improve their understanding of and compliance with PBG.

INTRODUCTION

The transition of Building Permits (IMB) to Building Approvals (PBG) is part of the reform of national licensing regulations, which is driven by the Job Creation policy and its implementing regulations. As a consequence, the licensing process can now be carried out through the Building Management Information System (SIMBG) with a different mechanism from the previous IMB practice (Government Regulation of the Republic of Indonesia Number 16 of 2021). At the local level, the Aceh Besar Regency Government has conducted socialization of PBG and SIMBG, but the absorption of information and formal compliance in the field has not been evenly distributed. A number of buildings remain standing without PBG and there are public complaints regarding the length of the service process, which shows the potential gap in public understanding of this new policy (Catalán et al., 2017; Zampoli & Zampoli, 2018).

A recent literature review shows that digital transformation and simplification of licensing procedures do not automatically improve public understanding or service efficiency when infrastructure, socialization, and human resource capacity are inadequate (Noardo et al., 2022; Ataide et al., 2023; Fauth & Soibelman, 2022). Studies in the Indonesian context highlight that the quality of PBG services varies between regions and often still faces problems of access, inter-institutional coordination, and low public knowledge about changes in nomenclature and management flows (Hendra et al., 2024; Heryanto et al., 2023; Putri et al., 2023). Research that specifically measures

citizens' understanding of PBG is still limited, so most studies place more emphasis on service quality, process digitization, or satisfaction of users who have interacted with the system (Fitriana et al., 2025; Noardo et al., 2022; Putri et al., 2023).

Based on this gap, this study places the level of community understanding as the main focus. The main difference between this study and previous literature is the empirical focus on non-PBG (non-service users) populations, thus capturing the populations most vulnerable to policy miscommunication. The next difference is the measurement of understanding using 7 operational indicators (knowledge about the change of IMB to PBG, management obligations, management time during construction, functions, methods, places, and validity periods) designed based on local and international studies. The last difference is that the sample is based on the proportion of the sub-districts in Aceh Besar Regency so that the results can reflect spatial variations in the level of understanding at the district scale (Dong et al., 2021; Wang et al., 2023).

The problem of this research is the extent to which the people of Aceh Besar Regency understand the key aspects of PBG, namely changes in nomenclature, the obligation to manage PBG, the management mechanism through SIMBG, the function of PBG, how to manage, where to manage, and the validity period?. Specifically, this study assesses whether the socialization of local governments and the availability of SIMBG have been effective in improving the basic knowledge of citizens. Hypothesis zero (H0) states that the level of understanding of the people of Aceh Besar Regency towards PBG is quite adequate (the proportion of 'knowing' $\geq 50\%$ in key indicators). The alternative hypothesis (Ha) states that the level of understanding of the people of Aceh Besar Regency towards PBG is relatively low (the proportion of 'knowing' $< 50\%$ in key indicators).

Unlike previous studies focusing primarily on service quality or user satisfaction, this study uniquely investigates the understanding level among non-PBG holders, highlighting the critical communication gap in regulatory socialization. The urgency of this research lies in addressing the potential legal and safety risks arising from non-compliance due to a lack of awareness. The findings are expected to provide crucial evidence to inform local government strategies for enhancing regulatory compliance and public safety awareness regarding building construction.

METHOD

This study used a quantitative method approach through the distribution of questionnaires. The questionnaire data were useful for analyzing public expectations of the quality of PBG services in Aceh Besar Regency. Data collection was conducted by directly visiting the respondents' residences and distributing the questionnaires. The population in this section consisted of people in Aceh Besar Regency who did not possess PBG. Based on BPS data from Aceh Besar Regency in 2024, the total population (N) was 435,298 people. In this study, the sample (n) was calculated using the Slovin formula with an error level (e) of 10%. This approach aimed to reduce the large sample size, considering the limitations of time, cost, and resources.

$$n = 99.98 \frac{N}{1 + (N \times e^2)} = 99.98 \frac{435.298}{1 + (435.298 \times 0.1^2)} \approx 100 \quad (1)$$

Regarding people of Aceh Besar Regency who do not have PBG are not recorded or inventoried by the Regional Government, so this study combines two techniques sampling all at once. As for the technique sampling used are proportionate stratified random sampling and purposive sampling. Proportionate stratified random sampling is sampling if the population has members or elements that are not homogeneous and proportionally stratified. Purposive sampling i.e. sampling with certain considerations or special selection (Agusven et al., 2023). Technique sampling The first

was used to take a sample of the people of Aceh Besar Regency based on the number of population proportions in each sub-district randomly. Technique sampling The second is used to take samples of the people of Aceh Besar Regency with the consideration of building owners who do not have PBG.

The analysis of questionnaire data in this study uses quantitative descriptive. Descriptive Quantitative is a data analysis process that aims to describe or summarize the characteristics of a dataset numerically (Creswell & Creswell, 2018). In the context of this study, quantitative descriptive is used to describe the characteristics and perceptions of respondents. These quantitative descriptive steps are as follows:

1. Description of the characteristics of the respondent.
 - a. Calculating the frequency and percentage of answers to respondent characteristic indicators through software SPSS.
 - b. Present the frequency and percentage of respondent characteristic indicator answer data into a table.
2. A description of the respondent's perception.
 - a. Calculating the frequency of answers to indicators of the level of public understanding of PBG through software SPSS.
 - b. Calculate the score value of the indicator, by adding up all the value of the frequency of the answer that has been multiplied by the weight of the answer.
 - c. Calculating the value Mean indicators, by dividing the number of respondents.
 - d. Calculating the value Mean variables, by adding up the mean value of the indicator and then dividing the number of indicators.
 - e. Interpreting values Mean indicators and variables based on Table 1.

Table 1. Interpretation of Mean Values on the Guttman Scale

No.	Guttman Scale	Score	Range Mean Value	Interpretasi Mean Value
1.	Not knowing	0	0,00–0,49	Not knowing
2.	Know	1	0,50–1,00	Know

Source: Creswell & Creswell (2018, h. 158) as processed by researchers (2024)

RESULT AND DISCUSSION

The people of Aceh Besar Regency who did not have PBG in this study amounted to 100 respondents. The characteristics of the respondents identified consisted of sub-district, gender, age, last education, occupation, and function of the building. More details of the respondents' characteristics can be seen in Table 2.

Table 2. Characteristics of the People of Aceh Besar Regency Who Do Not Have PBG

No.	Indicator	Answer	Frequency	Percentage
1	District	Baitussalam	6	6,00%
		Blang Bintang	3	3,00%
		The Gift of Imarah	13	13,00%
		Darul Kamal	2	2,00%
		Darussalam	5	5,00%
		Indrapuri	6	6,00%
		Want to Jaya	8	8,00%
		Jantho City	2	2,00%
		Krueng Barona Jaya	4	4,00%
		Kuta Baro	7	7,00%

No.	Indicator	Answer	Frequency	Percentage
		Kuta Cot Glie	3	3,00%
		Malacca City	2	2,00%
		Seulawah Valley	3	3,00%
		Leupung	1	1,00%
		Lhoknga	4	4,00%
		Lhoong	2	2,00%
		Grand Mosque	5	5,00%
		Montasik	5	5,00%
		Peukan Bada	6	6,00%
		Pulo Aceh	1	1,00%
		Seulimeum	6	6,00%
		Simpang Tiga	2	2,00%
		Sukamakmur	4	4,00%
2	Gender	Man	76	76,00%
		Woman	24	24,00%
3	Age	20–30 years	3	3,00%
		31–40 years	24	24,00%
		41–50 years	40	40,00%
		>50 years old	33	33,00%
4	Final education	High School/Equivalent	36	36,00%
		D3	7	7,00%
		S1	53	53,00%
		S2	4	4,00%
5	Work	PNS	20	20,00%
		PPPK	1	1,00%
		SOE Employees	5	5,00%
		TNI/POLRI	3	3,00%
		Employment contract workers	1	1,00%
		Private employees	7	7,00%
		Self employed	55	55,00%
		Housewives	6	6,00%
		Other	2	2,00%
6	Function of the building	Residential functions	62	62,00%
		Business functions	38	38,00%

Source: Data processed by researchers (2024)

Table 2 shows that the sub-district is dominated by respondents from Darul Imarah District. Gender is dominated by respondents from men. The age was dominated by respondents from 41–50 years old. The last education was dominated by respondents from S1. Jobs are dominated by respondents from the self-employed. The function of the building is dominated by the respondents from the residential function.

The level of understanding of the people of Aceh Besar Regency towards PBG is measured by 7 indicators through the Guttman scale. The perception of the people of Aceh Besar Regency, which differs from each other on the level of PBG understanding, can be accommodated through mean values analyzed through quantitative descriptive. For more information, the perception of the people of Aceh Besar Regency on the level of understanding of PBG can be shown in Table 3.

Table 3. The Perception of the People of Aceh Besar Regency on the Level of Understanding of PBG

No.	Indicator	Perception		Shoes	Mean	Mean Interpretation
		No Know	Know			
		0	1			
1	Did you know that since 2021, IMB has been changed to PBG?	89	11	11	0,110	Not Knowing
2	Did you know that every new build, alteration, expansion, reduction, or maintenance of a building needs to take care of PBG licensing?	80	20	20	0,200	Not Knowing
3	Did you know that PBG can be taken care of during construction, as long as its implementation meets the standards set by the Government?	83	17	17	0,170	Not Knowing
4	Do you know about the PBG function?	77	23	23	0,230	Not Knowing
5	Do you know how to take care of PBG?	89	11	11	0,110	Not Knowing
6	Do you know where to manage PBG?	79	21	21	0,210	Not Knowing
7	Did you know that the validity period of the PBG is once in the lifetime of the building in question?	72	28	28	0,280	Not Knowing
The mean variable of the level of understanding of the people of Aceh Besar Regency towards PBG					0,187	Not Knowing

Source: Data processed by researchers (2024)

The results of the analysis show that all indicators of understanding of PBG are perceived as "not knowing" by the people of Aceh Besar Regency. As for the background of the people of Aceh Besar Regency, not knowing the indicators of PBG understanding can be justified as follows:

1. The reason why the people of Aceh Besar Regency do not know about the knowledge that since 2021, the IMB has been changed to PBG:
 - a. Information on nomenclature changes does not reach the wider community.
The change of IMB to PBG through Government Regulation No. 16 of 2021 is more widely conveyed among construction officials and professionals. The people of Aceh Besar Regency who are not directly involved with the bureaucracy, rarely get official information about the change. As a result, they stick to the old term "IMB" in everyday conversation.
 - b. Socialization is technical and limited.
The government tends to convey these changes through legal documents or formal forums that are difficult for the general public to access. The lack of explanation in simple language makes residents not understand that the official term has changed. This condition widens the knowledge gap between regulations and the general public.
 - c. The custom of retaining old terms at the local level.
Field actors such as builders, foremen, and homeowners in Aceh Besar Regency, are still used to calling IMB because the term has been attached for a long time. The absence of an active encouragement to correct terms at the practical level makes people not used to hearing PBG. It is this collective habit that slows down the absorption of new terms.
2. The reason why the people of Aceh Besar Regency do not know that every new building, altering, expanding, reducing, or maintaining buildings needs to take care of PBG licensing:
 - a. Information lines are limited to the gampong level.

The socialization of PBG rules in Aceh Besar Regency is more often carried out at the district level in technical forums attended by apparatus, so that it does not reach the gampong community who carry out daily development. The lack of information delivery through local media such as announcements at meunasah or village meetings makes the message of licensing obligations not absorbed. As a result, many people really do not know that every change in the building is actually required to be taken care of by the permit.

b. Difficult regulatory communication language.

Official materials about PBG generally use legal and technical language, while the people of Aceh Besar Regency are more familiar with simple and contextual delivery. Without concrete examples such as "adding rooms, expanding the kitchen, or fixing the roof" that are directly associated with permit obligations, the community does not grasp the meaning that all types of changes require permitting. This makes knowledge about administrative obligations remain in the circle of bureaucracy, not the general knowledge of the public.

c. The absence of a tradition of socialization through trusted local actors.

In the culture of Aceh Besar Regency, effective public information is usually conveyed through religious figures, keuchik, or gampong devices, not just from government circulars. Because PBG regulations are rarely communicated through these local actors, the public does not feel that there is a legal obligation to simple home renovation activities. The absence of this trust-based socialization pathway explains why knowledge about permit obligations never really reaches the level of the wider community.

3. The reason why the people of Aceh Besar Regency do not know that PBG can be taken care of during development, as long as its implementation meets the standards set by the Government:

a. Technical information only stops at the bureaucratic level.

Explanations that PBGs can be taken care of during construction are usually conveyed in technical forums for consultants and apparatus, not to the general public. The gampong community in Aceh Besar Regency is rarely the audience for the socialization, so they do not know that there is flexibility in the management of permits. As a result, this knowledge only circulates in professional circles, not among homeowners or handymen.

b. A popular narrative that is wrong in society.

The everyday conversation is just simple information that permits must be completed "before building," with the addition that there is still room for management while the project is running. Because there is no corrective explanation in popular language, the people of Aceh Besar Regency have considered the management of permits in the midst of development impossible. This misunderstanding persists because there is no local media that clarifies the rules in an easy-to-understand way.

c. Lack of socialization based on real cases in the field.

Residents have never been shown concrete examples of how a house in Aceh Besar Regency managed to take care of PBG even though construction has started. Without evidence of local cases or practical guidance, the flexibility of the rules is simply a legal text that is foreign to the public. This is what makes knowledge about management options during development not reach the level of ordinary people.

4. The reasons why the people of Aceh Besar Regency do not know the function of PBG:

a. Government socialization emphasizes procedures, not the meaning of functions.

The information submitted by the officials in Aceh Besar Regency is generally only limited to the procedures for managing PBG, such as documents and administrative requirements. Explanations of the functions of PBGs, such as building safety guarantees, legal certainty,

and protection against disputes, are rarely described simply. As a result, the public only knows PBG as an "administrative permit" without understanding its more substantial functions.

- b. The absence of popular media explaining the real benefits.

There are no socialization materials in the form of infographics, local videos, or simple case simulations that can show the function of PBG for homeowners in Aceh Besar. Finally, residents find it difficult to associate permits with daily benefits, such as home security during an earthquake or certainty of land status. The lack of popular media makes the PBG's function never internalized in the knowledge of the general public.

- c. The function of PBG is not conveyed through the trust of the local community.

In the culture of Aceh Besar Regency, it is easier for people to believe in explanations from keuchik, ulama, or traditional leaders. Because the function of PBG has never been used as material for village lectures or deliberations, the information does not reach the level of community knowledge. As a result, the public is unaware of the function of the PBG as an instrument of legal protection and safety, and only sees it as an administrative burden.

5. The reason why the people of Aceh Besar Regency do not know how to take care of PBG:

- a. Procedural information does not reach the general public.

PBG management guidelines are usually only available in the form of official documents or government online portals that are rarely accessed by gampong residents. Because the majority of the people of Aceh Besar Regency rely more on oral information from village or neighboring officials, they are not exposed to the correct procedures. As a result, knowledge of management measures is never really owned by the general public.

- b. Language and format of socialization that are difficult to understand.

Technical instructions often use legal and technical construction terms that are unfamiliar to the public. Without simple explanations in everyday language, such as pictorial flows or case examples, it is difficult for residents to understand how to take care of permits. This makes procedural knowledge remain exclusive among officials and consultants.

- c. There is no real example at the local level.

The people of Aceh Besar Regency rarely see firsthand the process of local residents who successfully manage PBG, because most of the management cases are carried out through the services of third parties or consultants. The absence of local role models makes residents have no practical reference about the stages that must be undergone. As a result, how to manage PBG remains abstract knowledge that is not widely known at the village level.

6. The reason why the people of Aceh Besar Regency do not know where to take care of PBG:

- a. Service location information is not distributed to the village level.

The government usually only conveys the location of PBG services in the district center or through the official website, while village information lines are rarely involved. The gampong community in Aceh Besar Regency, which relies more on oral announcements from the keuchik or village officials, finally never got this information. This causes people not to know exactly where to go to the service.

- b. Socialization is centralized and uneven.

Socialization activities about PBG are generally carried out at the sub-district level or in Jantho City with limited participants to village officials. Without replication of information to the general public, knowledge of the place of service stops in the circle of the apparatus. As a result, curious residents are often confused about finding the office for the purpose of management.

- c. Lack of physical signs and local publications.

PBG service locations in Aceh Besar Regency do not have information boards or popular publication media that are easily recognized by the public. In contrast to health or education services where the place is clear, PBG licensing tends to be hidden. This condition makes people not know exactly where to go if they want to take care of permits.

7. The reason why the people of Aceh Besar Regency do not know the validity period of the PBG once in the lifetime of the building in question:

- a. The information only emphasizes the obligation, not the details of the validity period.

Government socialization more often emphasizes that every building must have a PBG, but rarely mentions the nature of its enforcement. The people of Aceh Besar Regency who only heard the obligation without a complete explanation, finally did not know that the permit was valid once in the lifetime of the building. As a result, citizens' knowledge is cut off only on the side of "there must be a permit" without understanding the duration of its enforcement.

- b. Lack of delivery in popular languages.

The term "valid for the lifetime of the building" rarely appears in simple media such as village posters, billboards, or socialization based on concrete examples. Without popular language and everyday illustrations, technical information is difficult for the general public to understand. This condition makes residents not have a practical picture of the benefits of the PBG validity period.

- c. Absence of hands-on experience at the local level.

The people of Aceh Besar Regency rarely see real examples of people who take care of PBG and get an official explanation about its validity period. Because PBG is still relatively new to replace IMB, there are not many local cases that have become referrals. This lack of collective experience is what keeps the public unfamiliar with the fact that PBG only needs a once-in-a-lifetime building.

The importance of the understanding of the people of Aceh Besar Regency towards Building Approvals (PBG) cannot be underestimated. Without knowledge and compliance with careful structural planning, buildings are at risk of fatal failures such as the collapse of the Al Khoziny Islamic Boarding School in Sidoarjo (Rahmawati, 2025). Inadequate structural planning (including calculation of loads, foundations, and strength of vertical elements) as well as practices of increasing floor height without ensuring the capacity of the lower structure can lead to *overloading* and the collapse of parts of the building as the workload increases. The impact of neglecting this technical aspect is not only material losses but profound loss of life and social trauma for families and communities. Therefore, the socialization of PBGs that explain the structural safety functions, licensing procedures, and planning limits must be strengthened to the gampong level so that development practices follow safe technical standards. The tragic event of Al Khoziny can be a warning for the people of Aceh Besar Regency to increase their understanding and compliance with the PBG, so that efforts to prevent similar collapses can be implemented.

Previous research by (Heryanto et al., 2023) mentioned that it is generally considered that the PBG process in Regency Cirebon is complicated and convoluted, so there is an impression that the understanding of the procedure is not evenly distributed. Information is often in the form of official documents/portals and the public is not exposed because the channels are not suitable. Intermediaries/consultants are often used so that residents are passive/lack of understanding. The findings are strongly in line with Aceh Besar Regency. The people of Aceh Besar Regency also consider the procedures to be difficult to access practically and procedural information does not reach ordinary citizens. Guides are available on documents / portals that are rarely accessed, people rely on

oral information from village/neighborhood officials. The majority of PBG management is through third-party services, where residents do not see the process, so knowledge remains abstract. The practical implication is that local governments need to launch segmented socialization with everyday language and visual materials, demonstrate local cases as role-models, accredit and supervise intermediaries, provide services Hybrid (digital and mobile counter), strengthening the capacity of village officials, and establishing monitoring indicators to improve and measure public understanding of PBG.

Previous research by (Hendra et al., 2024) stated that the public's understanding of PBG in Bandarlampung City, Lampung Province is uneven and limited. This is influenced by the complexity of procedures, communication channels that do not reach residents, and barriers to digital access. The findings are strongly in line with Aceh Besar Regency. The people of Aceh Besar Regency also consider the procedure to be difficult to access practically, the knowledge of the steps is not owned by the public. The main guide is available in documents / portals that are rarely accessed, residents rely more on oral information from village/neighborhood officials. The majority of management is through third-party services, residents rarely see the process so that knowledge remains abstract. Guide *Online* less impactful due to limited access/literacy which shows a digital divide. The practical implications are Local governments need to launch segmented socialization based on everyday and visual language, providing services *Hybrid* (mobile counter + practice assistance) to demonstrate concrete steps, accredit and require transparency in third-party service providers, strengthen the capacity of village officials as extension workers, and establish monitoring indicators to close the digital divide and measure the improvement of public understanding of PBG.

CONCLUSION

The study concluded that the level of understanding of the people of Aceh Besar Regency towards Building Approvals (PBG) was relatively low, as indicated by the rejection of the null hypothesis (H_0) and acceptance of the alternative hypothesis (H_a). The mean value of understanding variables fell far below the “knowing” category, reflecting the public’s limited comprehension of essential PBG aspects, including the shift from IMB to PBG, administrative procedures, SIMBG mechanisms, functions, service locations, and permit validity periods. The findings highlight ineffective socialization efforts, particularly among non-professional audiences and building owners, due to weak practical communication and limited community-level information dissemination. To address this, an integrated and accessible communication strategy is necessary, involving local leaders, visual media, and hands-on demonstrations. Future research should focus on evaluating the effectiveness of various communication methods through pre- and post-socialization studies, exploring sociocultural factors influencing PBG adoption via qualitative approaches, and conducting spatial mapping to identify knowledge disparities across sub-districts.

REFERENCES

- Agusven, T., Satriadi, Hafizni, R., Santoso, N. K., & Hasnarika. (2023). *Basics of Qualitative Research Methodology*. King of Graphic Media.
- Ataide, M., Braholli, O., & Siegele, D. (2023). Digital Transformation of Building Permits: Current Status, Maturity, and Future Prospects. *Buildings*, 13(10), 1–19.
- Catalán, J., Catalan, J., Tuffrey, V., Tuffrey, V., Ridge, D., Ridge, D., Rosenfeld, D., & Rosenfeld, D. (2017). What influences quality of life in older people living with HIV. *Aids Research and Therapy*. <https://doi.org/10.1186/s12981-017-0148-9>

- Creswell, J. W., & Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage Publications.
- Dong, Y., Dong, Y., Liao, M., Liao, M., Han, G., Han, G., Han, G., Somero, G. N., & Somero, G. N. (2021). An integrated, multi-level analysis of thermal effects on intertidal molluscs for understanding species distribution patterns. *Biological Reviews of The Cambridge Philosophical Society*. <https://doi.org/10.1111/brv.12811>
- Fauth, J., & Soibelman, L. (2022). Conceptual Framework for Building Permit Process Modeling: Lessons Learned from a Comparison Between Germany and the United States Regarding the As-Is Building Permit Processes. *Buildings*, 12(5), 1–25.
- Fitriana, M., Mubarak, & Aulia, T. B. (2025). Evaluation of Building Approval Service Quality Performance (PBG) in Banda Aceh. *IOP Conference Series Earth and Environmental Science*, 1–10.
- Hendra, A., Oktavia, S. Y., & Asri, J. D. (2024). Quality of Service in Building Approval (PBG) at the Investment and One-Stop Integrated Service Office (DPMPTSP) of Bandar Lampung City, Lampung Province. *Journal of Bureaucratic Media*, 6(2), 140–156.
- Heryanto, Y., Sutarjo, M., & Ramadhani, R. (2023). Quality of Public Services in the Issuance of Building Approvals at the One-Stop Investment and Integrated Services Office. *Journal of Syntax Transformation*, 4(4), 35–43.
- Noardo, F., Guler, D., Fauth, J., Malacame, G., Ventura, S. M., Azenha, M., Olsson, P.-O., & Senger, L. (2022). Unveiling the Actual Progress of Digital Building Permit: Getting Awareness Through a Critical State of the Art Review. *Building and Environment*, 213, 1–30.
- Government Regulation of the Republic of Indonesia Number 16 of 2021, concerning Implementing Regulations of Law Number 28 of 2002 concerning Buildings.
- Putri, V. N., Darma, Y., Hasan, M., & Ziana. (2023). Analysis Of Satisfaction Of Service Quality Designable House Using Importance Performance Analysis (Case Study: Banda Aceh City and Aceh Besar District). *Aceh International Symposium on Civil Engineering*, 1–13.
- Rahmawati, D. (2025). Legislator: Sidoarjo Boarding School Collapse Is Not an Ordinary Disaster, Investigating Criminal Elements. *detikNews*. <https://news.detik.com/berita/d-8148523/legislator-ponpes-ambruk-sidoarjo-bukan-musibah-biasa-usut-unsur-pidana>
- Wang, J., Zhao, S., Wu, C., Adams, R. B., Newman, M. G., Shafir, T., & Tsachor, R. (2023). Unlocking the Emotional World of Visual Media: An Overview of the Science, Research, and Impact of Understanding Emotion. *Proceedings of the IEEE*. <https://doi.org/10.1109/jproc.2023.3273517>
- Zampoli, M., & Zampoli, M. (2018). Cystic fibrosis: What's new in South Africa in 2019. *South African Medical Journal*. <https://doi.org/10.7196/samj.2018.v109i1.13415>