Community Perspectives on the Implementation of Building Permits (IMB) for Environmental Sustainability in South Jakarta, Indonesia

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Abstract. Building construction will increase along with the increase in population in urban areas. For maintaining the carrying capacity of the environment to remain in balance, it is necessary to have a control instrument in the development of urban areas, one of which is through a Building Permit (IMB). To increase the effectiveness of the policy for implementing the IMB, it is essential to know the public's perception of the IMB and experts regarding their views. Through interviews, questionnaires, spatial analysis, and AHP, this research is expected to be a material consideration for stakeholders in deciding policies for implementing IMB in South Jakarta. Spatial analysis was used to compare land cover, questionnaires were used to see people's perceptions of building permits as an instrument for controlling and protecting urban areas, and AHP was used to validate the expert team's opinion regarding IMB. The increase in green land in South Jakarta, the perception of public awareness in South Jakarta regarding the obligation to build an IMB and its impact on the environment is still high, and the accountability factor of the implementing licensing organization is one of the factors that can increase the effectiveness of the application of a building permit (IMB) in South Jakarta.

1. Introduction

In living systems, humans constantly interact with their environment. In these interactions, some factors influence each other, including economic, political, socio-cultural, population, and many other factors that have become part of the human culture-sphere [1]. South Jakarta is an urban area which is a built environment in the DKI Jakarta Province, Indonesia, which is currently designated as the Capital of the Republic of Indonesia, which also acts as a center for national economic and business development, a center for government activities, as well as an area for social and cultural development in the lives of its inhabitants [2–4]. Thus, as part of an area with all these rapid activities, South Jakarta has experienced increasing population and population density from year to year, like urban problems in general [5]. The increase in the number and density of the people in South Jakarta and DKI Jakarta Province can result in the high activity of urban infrastructure and building construction. This is because buildings, as well as construction results from urban infrastructure, are indirectly still a primary need for the community, are part of the immediate needs, and become the result of the self-actualization of the community to provide a sense of security, comfort, and self-identity [6–8]. Increased development activities, especially buildings in DKI Jakarta in general and in South Jakarta in particular, will negatively impact the sustainability of the natural environmental ecosystem if it occurs continuously and is not controlled in the long term [9–13]. Increased development activities, especially buildings in DKI Jakarta in general...
and in South Jakarta in particular, will negatively impact the sustainability of the natural environmental ecosystem if it occurs continuously and is not controlled in the long term. Even in his opinion, Firman [14,15] explained that the magnitude of the flow of urbanization in the living system of urban areas had a significant impact on spatial development in Indonesia, especially in urban areas, for example, South Jakarta.

For this reason, Firman [15] thinks that it is necessary to have a policy in urban land use, especially in areas that can respond to the rapid development of urbanization. This is important for urban areas to maintain the sustainability of the natural environment of the metropolitan area itself. One form of policy instrument in controlling the urban area development process can be done through a licensing system [11,15,16].

However, despite implementing the licensing system in controlling space utilization, there are still environmental problems with the increasingly critical ecological conditions in Indonesia and the increasing risk of disasters due to violations of space utilization that often occur in urban areas [17]. This is in stark contrast to the purpose of licensing itself, which should be an instrument as part of environmental protection [16], overcoming environmental problems in basic activities attached to the licensing basis [18] or other negative externality factors that may arise from socio-cultural and economic activities that utilize urban space [19]. Sutedi dan Asiyah [19,20] argues that licensing is a form of state administrative law product, so to assess and improve the effectiveness of the licensing itself, one aspect that must be evaluated is the effectiveness of the law regarding licensing itself in the community. Moreover, according to Soekanto's view in the research presented by Yudho & Tjandrasari [21], the factors that influence the effectiveness of the law, in this case, are the licensing law, one of which is the community factor. Thus, public participation in viewing and conveying their perceptions and views regarding building permits becomes very important to be taken into consideration in deciding policies for implementing permits in buildings and space utilization.

Figure 1. Schematic diagram of critical success factors for implementing a Building Permit (IMB) and its regulations [22]

According to research from Hadi and Yulianti [22], several other factors can determine the success of implementing the IMB and its regulation, as illustrated in Figure 1. Based on Figure 1, it can be
concluded that various factors can determine the success of implementing a IMB as an instrument for controlling the use of urban space, where these factors are divided into internal and external factors.

Even though there are changes in regulations from the Central and Regional Governments that are expected to make it easier for the community, it turns out that according to data obtained from the DKI Jakarta Provincial Investment and One-Stop Service, the number of permits tends to decrease. The decline in the number of IMB and other permits itself can be motivated by various factors. It ranges from a large number of brokers, discrimination in licensing services, illegal fees that occur in service providers, promotion of positions [23], complicated and convoluted licensing procedures [23–25] as well as building permit requirements that are not widely understood by the public, resulting in people not knowing about building permits. In addition, many other factors can discourage people from applying for building permits, such as the absence of firm incentives and disincentives for law enforcement on the use of space and buildings [26,27]. The Central Government also assumes that in licensing the use of space and buildings, the function of the Licensing Service Organization in the Regional Government has not been carried out correctly. To accelerate and accelerate economic growth and investment, the Central Government plans to change the concept of several permits, one of which is building permits and turning them into a form of commitments through the deregulation of regulations called the Job Creation Act [28–30] because licensing is considered to be one of the factors that hinder investment and economic growth in Indonesia.

Based on the description of the materials above, the main problem in this research is how are the perceptions and preferences of community participation related to the application of the IMB system as an instrument for controlling space utilization and the perceptions of experts as part of the community as well as to find out what factors dominate in the successful implementation of IMB in South Jakarta to become part of the instrument for controlling space utilization as part of environmental sustainability efforts. The objectives to be achieved in this study are to obtain public perceptions of the building permit system in South Jakarta and the opinions of experts related to the policy determinants of the success of the building permit system in South Jakarta to achieve the 11th, 13th, 15th and 16th SDGs as well as to be considered stakeholders in determining the policy on the use of space and buildings in South Jakarta.

2. Method
The approach taken in this research is a qualitative approach to Environmental Science to understand how the perceptions and opinions of the general public and experts related to the application of a IMB in South Jakarta and the determining factors that form the basis for the successful implementation of a IMB in South Jakarta. South Jakarta. In completing the research, we will use a mixed method that combines qualitative and quantitative methods. Quantitative methods are used to apply assessment and weighting data to each of the criteria determining the effectiveness of the application of the IMB to finally produce a priority order of criteria in the South Jakarta area, while the qualitative method is to explain opinions and perceptions of the IMB in South Jakarta more deeply.

The population range taken is data on applications and permits issued in 2015-2018. The population is the number of permits and applicants for building permits based on data from the Investment Management Unit and One-Stop Integrated Services, South Jakarta, from 2015-2018 is 1233 permits with 1122 permits in the non-residential category. Meanwhile, in determining the respondents, this research used a formula developed from Slovin. So, based on this formula, the respondents were 92.49 ≈ 93 people with added of 10% unexpected data. The determination of the sample using the Slovin method is intended because the Slovin formula is an appropriate formula used to calculate the minimum number of samples in a finite population survey, where the primary purpose of the survey is to estimate the proportion of the population. Because the sample is taken from the population of people who have applied for a building permit within the scope of authority of the South Jakarta City Administration of One-Stop Investment and Integrated Services, the proportion with Slovin is considered appropriate.

To support the results, the researcher did in-depth interviews. It was conducted with research informants with specific criteria to obtain six expert informants from various institutions, both central, regional, and academic representatives, as well as quality assurance institutions that assess the factors
that determine effectiveness in the application of the IMB in South Jakarta and using AHP as a parameter to crosscheck the data.

3. Results and Discussions

3.1. Description of Research Location

South Jakarta is located between West Jakarta, Central Jakarta and East Jakarta, and Depok City, West Java as we can see at Figure 2. From a geographical and topographical point of view, South Jakarta is a lowland area with a contour elevation of 5 - 77 m above sea level, with a reasonably flat land contour. South Jakarta is surrounded by six rivers that are part of the irrigation system in DKI Jakarta Province; these six rivers are divided into 2 clusters: the western flow and the middle flow. This is what causes if spatial control in South Jakarta is not carried out properly, then there is a risk of flood disaster, which is always present when the rainy season comes. There are 71 flood control pump machines in the west flow, and in the central flow, there are 56. South Jakarta is dominated by space utilization, primarily for Residential, Commercial (Offices), and Shopping Centers. The use of this residence is very complex because there are still many densely populated areas in South Jakarta, commonly referred to as "Kampung," especially in areas along the river.

![Figure 2. Research Location [31]](image)

3.2. Building Permits in South Jakarta

Building permits in DKI Jakarta and South Jakarta were initially managed by a Technical Service called the City Planning and Development Agency (DPPK), which later changed its name to the Building Supervision and Control Agency (DP2B). However, over time, with the issuance of the DKI Jakarta Provincial Regulation Number 12 of 2013 concerning One-Stop Integrated Services, since 2015, the licensing service system has been handed over to the Office of Investment and One-Stop Integrated Services (DPMPTSP), where this service has a unit. Services to the village level. Meanwhile, the Technical Service, namely the Office of Supervision and Control of Buildings (DP2B) which later changed its name to the Department of Human Settlements, Spatial Planning and Land Affairs of DKI Jakarta Province (DCKTRP), is tasked with supervising and controlling the implementation of building on permits issued by DPMPTSP and regulates regarding the principles of development that require the governor's consideration.

From 2015 until 2021, based on data from the DKI Jakarta Provincial Investment and One-Stop Service Office and the DKI Jakarta Provincial Land and Spatial Planning Office. There were 3232 applications for Building Construction Permits, of which all applications were of these, 17.51% of
applications were rejected and returned, with the most significant reason being the violation of space utilization by 67.49% and in the condition of the building that has been built. Despite a large number of spatial use violations in the building permit data, after conducting a spatial analysis using Landsat Satellite Imagery for 2014, 2015, and 2020 periods, it turns out that there is a change in land cover where there is an increase in the number of green open lands. This is certainly different from the research results and predictions from research conducted by Mas'at [32,33].

![Figure 3. Image of Land Use Projection in South Jakarta in 2014 (a), 2015 (b), and 2020 (c) using Landsat Satellite Imagery](image)

If the imaging results as illustrated in Figure 3 are changed in the data tabulation, the number of green open lands in South Jakarta from 2014, 2015, and 2020 can be seen in table 1.

| No. | Areas (in Hectares)      | 2014   | 2015   | 2020   | Symbol From The Maps |
|-----|--------------------------|--------|--------|--------|----------------------|
| 1.  | Built-up Land Area       | 8405.49| 8571   | 9392   |                      |
| 2.  | Open Land Area           | 5303.41| 5166   | 3967   |                      |
| 3.  | Green Open Area          | 702.83 | 679    | 1037   |                      |

3.3. Building Permits in South Jakarta

In knowing public perceptions regarding building permits, the researchers distributed 102 questionnaires, and 92 respondents responded.

3.3.1. Related to Building Functions

Of the 92 respondents, 43.5% applied for a IMB with a residential function, while 41.3% of respondents applied for a single business function, such as offices, shops, minimarkets, etcetera. Meanwhile, the rest of the respondents applied for permits with socio-cultural functions such as schools, hospitals, clinics, places of worship, etcetera. By looking at the presentation, it can be seen that the use of residential functions such as houses, boarding houses, apartments, flats, and etcetera still dominates the use of space in South Jakarta.

3.3.2. Regarding Public Perception for the Effect of Buildings on the Environment

As many as 63% of respondents believe that building construction activities will impact the environment. In comparison, 37% of respondents believe that the construction will not affect the surrounding environment. This shows that most of the respondents still believe that any changes in the use of space that they do directly or indirectly will impact the surrounding environment. However, only 59.8% of respondents believe that the IMB can be necessary for environmental protection efforts or balance development and natural ecological ecosystems. This is because most respondents amounting
to 60.9%, feel that law enforcement actions against building regulations in South Jakarta still feel selective and have not achieved justice.

3.3.3. Related to Perceptions of the Importance of Building Permits (IMB) before Implementing Building Construction

A total of 95.7% of respondents believe that a Building Permit is necessary before carrying out construction. However, it turned out that only 65.2% were built according to the permits given, while the rest of the respondents used the space on their land according to the maximum benefit in the ground. This figure shows that public awareness regarding the obligation to have an IMB before starting to build a building is still quite high. To assess which factors can be used as benchmarks for the success of the IMB as an environmental controller, an AHP analysis was carried out on six informants with certain criteria, which were then calculated using the formula for the geometric data numbers.

**Table 2. Result of Data Processing from Questionnaire to Six Expert Informants using AHP Method for Choosing the Priority Factor to increase the Effectiveness of Building Permits (IMB)**

| Criteria               | Subcriteria                           | Geomean Criteria Weight | Geomean Subcriteria Weight | Geomean Correlation Weight | Max     | Priority Rank |
|------------------------|---------------------------------------|-------------------------|---------------------------|---------------------------|---------|---------------|
| Organization Characteristics | Institutional Climate               | 0.2458                  | 0.0497                    | 0.0122                    | 0.0284  | 2             |
|                        | Institutional Goals                   | 0.1063                  | 0.0261                    |                           |         |               |
|                        | Institutional Regulations             | 0.1099                  | 0.0270                    |                           |         |               |
|                        | Standard Operating Procedures        | 0.0832                  | 0.0205                    |                           |         |               |
|                        | Violation Detection System            | 0.1051                  | 0.0258                    |                           |         |               |
|                        | Sources of Budget Funds               | 0.1132                  | 0.0278                    |                           |         |               |
|                        | Facilities and Infrastructure         | 0.1157                  | 0.0284                    |                           |         |               |
|                        | Incentives and Disincentives          | 0.1033                  | 0.0254                    |                           |         |               |
|                        | Sanctions                             | 0.0719                  | 0.0177                    |                           |         |               |
| Actor Characteristics  | Leadership                            | 0.0969                  | 0.1558                    | 0.0151                    | 0.0277  | 3             |
|                        | Rational Actors                       | 0.1571                  | 0.0152                    |                           |         |               |
|                        | Competence                            | 0.1598                  | 0.0155                    |                           |         |               |
|                        | The Division of Roles                | 0.0985                  | 0.0095                    |                           |         |               |
|                        | Commitment                            | 0.2857                  | 0.0277                    |                           |         |               |
| Management Characteristics | Implementation Strategy             | 0.3537                  | 0.0464                    | 0.0164                    | 0.0500  | 1             |
|                        | Instrument Strategy                   | 0.0497                  | 0.0176                    |                           |         |               |
|                        | Duty and Authority                    | 0.0610                  | 0.0216                    |                           |         |               |
|                        | Communications                        | 0.0897                  | 0.0317                    |                           |         |               |
|                        | Coordinations                         | 0.0798                  | 0.0282                    |                           |         |               |
|                        | Responsiveness                        | 0.0791                  | 0.0280                    |                           |         |               |
|                        | Accountability                        | 0.1412                  | 0.0500                    |                           |         |               |
|                        | Monitoring                            | 0.1063                  | 0.0376                    |                           |         |               |
|                        | Evaluation                            | 0.0983                  | 0.0348                    |                           |         |               |
| Environmental Characteristics | Task Alignment                   | 0.1229                  | 0.0792                    | 0.0097                    | 0.0231  | 4             |
|                        | Alignment of Goals                    | 0.1036                  | 0.0127                    |                           |         |               |
|                        | Policy of Agreement                   | 0.1680                  | 0.0206                    |                           |         |               |
|                        | Participation                         | 0.1181                  | 0.0145                    |                           |         |               |
|                        | Obedience                             | 0.1876                  | 0.0231                    |                           |         |               |
|                        | Rule of Law                           | 0.1454                  | 0.0179                    |                           |         |               |
| MAX                    |                                       | 0.3537                  | 0.2857                    | 0.0500                    | 0.0500  |               |

So based on these data, it is known that the people who will build in the South Jakarta area are aware of environmental changes and environmental damage and need to have a IMB before carrying out construction. However, respondents are not sure that the IMB can be the proper parameter in controlling the impact of building in South Jakarta. Meanwhile, after conducting the questionnaire and calculating the results of the questionnaire answers using the Analytical Hierarchy Process (AHP) mechanism, the results are obtained, as illustrated in table 2.
Based on the calculation of the weight of the AHP, it can be seen that the main priority in increasing the effectiveness of the implementation of the IMB in South Jakarta is the improvement of organizational management, in this case, the organization implementing licensing services. More specifically, the main priority for improvement to increase the effectiveness of the IMB is, of course, to increase awareness of the accountabilities of the licensing service implementing organization. This accountability value is based on the principles of government services that are accountable, transparent, anti-corruption, and good bureaucracy. The focus of government responsibility was obtained after the researchers conducted interviews with the six expert informants. Without accountability for the licensing service organization, licensing will be ineffective and cannot run appropriately according to the target and purpose of the permit itself.

4. Conclusions
Based on the analysis of the material above, it can be concluded that South Jakarta is in the dominance of Business and Residential functions which are almost the same size. Land use in South Jakarta is increasing, but the trend is that the number of available green open lands is expanding, which is quite good. While the public perception regarding the IMB, the dominance of legal awareness and obligations is still relatively high, they still doubt the success of the IMB as an instrument in environmental protection and a tool for controlling urban development. Six expert informants stated that increasing the effectiveness of permits is to increase the accountabilities of implementing organizations, especially those implementing licensing services and the duties of supervising and controlling organizations in space utilization. This is a priority because, without an awareness of responsibility, the IMB will not have value as an instrument for managing the use of urban space.

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