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#11541 Review

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The Decision-Making in Planning of the Riverfront Housing

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Abstrak: Penelitian ini membahas pengambilan keputusan dalam perencanaan pembangunan perumahan di bantaran sungai dengan penguatan karakter kota tepian air. Penelitian dilakukan di Palembang, sebuah kota besar di Indonesia yang tumbuh dan berkembang di lahan basah di bantaran sungai. Perkembangan pembangunan yang terjadi pesat seringkali menghilangkan karakter fisik, sosial budaya dan lanskap lahan basah tepian sungai. Oleh karena itu, perlu dilakukan penataan permukiman yang terintegrasi antara pertimbangan kebutuhan pengembangan lahan perkotaan dan konservasi karakter lanskap tepian sungai. Penelitian ini menggunakan metode Multi-Attribute Utility Theory (MAUT) yang merupakan bagian dari metode Multi-criteria Decision-Making (MCDM). MAUT merupakan metode praktis dalam menentukan alternatif perencanaan. Alternatif perumahan diidentifikasi, ditafsirkan, dan disimpulkan dengan menilai keseimbangan perencanaan pembangunan dari berbagai bidang terutama dari perspektif perlindungan ekosistem. Setiap alternatif perumahan diukur dengan skala numerik yang sesuai dengan kriteria yang ditentukan. Metode tersebut mengasumsikan bahwa permukiman merupakan kumpulan atribut dan setiap atribut diurai menjadi beberapa pilihan yang disusun secara berurutan menurut kriteria tertentu. Metode menyusun, meringkas, dan menyimpulkan rekomendasi yang diolah berdasarkan pendapat ahli dari berbagai bidang terkait. Hasilnya menentukan alternatif untuk keputusan perencanaan lingkungan yang kompleks dengan berbagai sudut pertimbangan. Studi ini mempromosikan cara mengukur risiko dari keputusan untuk memprediksi kemungkinan keberhasilan tujuan atau penerimaan perencanaan.

Kata kunci: permukiman perkotaan tepian sungai, ekosistem lahan basah, dan pengambilan keputusan multikriteria

Abstract: The paper discusses the decision-making in planning for the development of housing in the river bank with strengthening riverfront city character. It conducted in Palembang, a big city in Indonesia that grow and develop on wetland in the river banks. Rapid development developments often eliminate the physical, socio-cultural and riverbank landscapes. Therefore, it is necessary to carry out an integrated settlement arrangement between the consideration of the need for urban land development and the conservation of the character of the riverbank landscape. This research used Multi-Attribute Utility Theory (MAUT) method which is part of the Multi-criteria decision-making (MCDM) method. MAUT is a practical method in deciding planning alternative. Housing alternatives are identified, interpreted, and concluded by assessing the balance of the development planning from various fields particularly from the perspective of ecosystem protection. Each housing alternative is measured with a numerical scale that conforms to the designated criteria. The method assumes that housing is a collection of attributes and each attribute is parsed into several choices that are arranged sequentially according to certain criteria. The methods compile,

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summarize, and conclude recommendations that are processed based on the expert opinion from various related fields. The results determine the alternative for a complex environmental planning decision with various angles of consideration. This study promotes a way of measuring risk from decisions to predict the possibility of the success of the goal or to acceptance of the planning.

Keywords: urban housing riverside, wetland ecosystem, and multi-criteria decision-making

Introduction

Riverbank wetland has a function as high-valued hydrological and biogeochemical ecosystem service and it is an ecosystem that is important for environmental conservation function such as flood control, water purification, and conservation of biological habitats. The existence of wetlands in urban areas is often displaced by urban development, a development that is carried out by converting wetland ecosystems into dry land ecosystems. This becomes a problem in the application of the concept development. Where, river bank management should pay more attention to hydrological and environmental problems such as floods and droughts (maximum and minimum discharge ratios), zone maintenance, encroachers, water quality, and adequate support from infrastructure and utilities (Permana, Astuti, & Erianto, 2017). On the other hand, the arrangement of river banks has benefits in human interaction. By enhancing the urban ecological environment, creating green corridors by utilizing the riverside landscape, will provide a good space for social interaction (Zhang, Deng, & Tang, 2020).

The conditions and demands of these needs raise awareness in several countries to restore, restore and improve the quality of wetland ecosystems. It also motivated the development in wetlands with ecosystem service protection, not only for the physical environment but also for the culture of wetland communities (Pritchard, 2008). Cities are designed to preserve wetland landscape. This creates a unique landscape that is built by taking into consideration the limited land, material use, technology, socio-cultural condition, and environment carrying capacity (McInnes, 2010) (Karrasch, Klenke, & Woltjer, 2014). In the wetland planning, there are at least three values that need to be maintained, namely; direct value related to water resources to support urban life, the indirect value created from the scenery that is formed, and also the inherited values contained therein (Permana, Astuti, & Erianto, 2017). The form of maintaining value which is the principle in the development of wetland / waterfront areas can also be seen from the point of view of its authenticity. Where authenticity can be seen from the object of authenticity in the form of the existence of the village, the characteristics of the house on stilts, the activities of the local community, and the original culture; and authenticity related to activities in the form of experiences of tourists while they are in the area (Damanik & Pratiwi, 2017).

The development of riverbanks in the context of developing the built environment requires a balanced concept to maintain the natural environment and the ecology of the environment. This balance can be achieved when the social, environmental and economic aspects are in a harmonious balance (Permana, Astuti, & Erianto, 2017). With this concept, achieving the vision of a sustainable waterfront development can wisely solve ecosystem problems, preserve cultural heritage, water management, and conserve energy resources (Bahreldin, 2020).

This research measures the solution for developing housing on riverfront wetlands along the Musi River in Palembang, one of big cities in Indonesia. Palembang is dominated by a low and flat topography crisscrossed by hundreds of rivers. The river overflows the flat topography creating wetland riverfront or marshes. The total conservation of riverfront wetlands in this city contradicts with the land requirement for development. The limited dry land has put pressures on the development on wetlands. However, like most city evloved on the riverbanks, people are adapting to settle on wetlands to create a unique landscape culture (Prescott & Ninsalam, 2016). Conducting daily activities on riverfront wetlands has created a culture bounded to the river (Oktarini, 2019a).

Decision making in environmental projects is often complex and difficult, especially because of trade-offs between social, political, environmental, ecological and economic factors. The decision

regarding the resolution strategies often involves several additional criteria such as financing, population impact, safety, ecological risks, or human values (denpaiboon, tohiguchi, matsuda, & hashimoto, 2000) . Even if the strategy has been formulated, the solution does not always satisfy all parties. Decision making using MAUT method has a basis for a consistent assessment which considers the integrated problem and conflicting conflicts of interest (Huang, Keisler, & Linkov, 2011).

This study uses Multi-Attribute Utility Theory (MAUT) method, a multi-criteria decision-making (MCDM) method of valuation that has been widely used in the housings sector (Jansen, 2011). The MAUT approach is based on utility theory devoted to valuation techniques and elicitation procedures (Keeney & Von Winterfeldt, 1989). The method makes decisions through the calculation attributes of certain criteria. In this study, MAUT was used to assess the development of riverfront wetland housings with the preservation criteria of the ecosystem services.

Methods

This research used Multi-Attribute Utility Theory (MAUT) method which is part of the Multi-criteria decision-making (MCDM) method. MAUT is a practical method in deciding planning alternative. The MAUT method has been used to make decisions for development in developing countries.

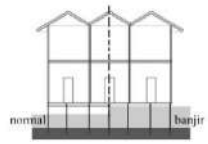
The study location is the city of Palembang. With a land topography that has a height of 3-4 meters above sea level, the city of Palembang has 108 tributaries and four large rivers that cross it; Musi River, Komering River, Ogan River, and Keramasan River. Under these conditions, the characteristics of the city that were formed were more dominant as a waterfront / wetland city.

MAUT, that develops a model to evaluate the design of residential units to increase profit (BuHamdan, Alwisy, Bouferguene, & Al-Hussein, 2019), is an accurate method of environmental evaluation (Boyer & Polasky, 2004). MAUT is used to integrate environmental and social criteria principal to a comprehensive selection process of suppliers (Shaik & Abdul-Kader, 2011). It is also used in research decisions concerning single sustainability performance indicator for highway bridges (Sabatino, Frangopol, & Dong, 2015)

Identification and sampling were carried out using a questionnaire involving several experts in the environmental, residential and urban fields. The opinion of experts will provide an assessment of the effect of attributes based on ecosystem protection criteria, identify the best attributes, identify the effect of attribute category groups on the criterion value, and identify the best housing alternatives that match the criteria.

MAUT includes many models and techniques that provide a formal basis for describing or choosing alternatives where the consequences are characterized by several relevant attribute values. MAUT is a development method of identifying axiomatically appropriate functional form of a model derived from behavioral assumptions about utility preferences and independence. Assessment with MAUT has been developed with many models and procedures and it supports decision makers to find more informative trade-off decisions.

Table 1 List of attributes and its levels

Attributes	Description of preference effect	Level attributes		Illustration
House type	to land covers, water flows, and absorption capabilities of riverfront wetland	1.	Floating house	
		2.	Stilt row house	
		3.	Apartment	
Buffer Zone Width	to river side free-building area and the convenient distance for the daily activities	1.	0-10 m	
		2.	11-20 m	
		3.	21-30 m	
		4.	>30	
River Edge Wall	to flood exposure and views of the river	1.	Natural	
		2.	Polder	
		3.	Riverfront plat form	
Riverside Open Space	to performance of the ecosystem service or the communities' daily activities	1.	Open green natural	
		2.	Riverfront wetland park	
		3.	Playground	

The model or set of procedures is detailed with techniques that represent the individual's attitude about choices towards an attribute level. The selection and determination of the value to the level of the attribute is included in the calculation model (Keeney, Von Winterfeldt, & Eppel, 1990). This study adopted MAUT procedures in the following steps:

1. Defining alternatives and value-relevant attributes

MAUT evaluates the overall alternative which is defined as the value of the relevant attributes. This technique requires decision makers to evaluate alternatives in each dimension of separate values for each attribute. Decision makers give relative weights to various attributes that express trade-offs between attributes. This value is the basis for evaluating several alternative models.

The research attributes and level of attributes are prepared through literature elaboration and field observations about the conservation of riverfront wetland ecosystem services. A preliminary survey was conducted to get input from several perspectives and continued with interviews through in-depth discussions to define the criteria of the objective in opposite interests.

This set attributes and levels were selected, reviewed and revised by a group of experts. The filtering process decides on the last set of goals and attributes. Attributes and attribute levels are units of analysis for calculation and assessment of housing development. Each attribute and level of attribute represents certain criteria related to both interests. The selection process filters attributes and attribute levels with consideration, as follows:

(1) Exclude attributes that are less influential than consideration of ecosystem services and housing development

(2) Avoid repetition of attributes by combining, or uniting several intersecting attributes.

(3) Eliminating attributes that are not in accordance with the local context.

(4) Reducing attributes that are difficult to measure, assess, or discuss.

The process of attribute selection and attribute level is done through several stages. The attribute selection itself is done through two stages. The first step screened the suitability of attributes with objectives and the local context. The second step tested the suitability of attributes with ecosystem service conservation criteria. The list of attributes and levels are displayed on Table 1.

2. Evaluate Each Alternative Separately on Each Attribute

MAUT assesses expert opinion on a problem by measuring their feelings and logics in responding to a problem. Therefore, the expert selection processes must be carried out carefully. The experts are selected from those who are familiar with the problems of local housing in riverfront wetland. They have been working in and experiencing the housing sector for approximately 5 years.

Criteria are arranged through summaries and conclusions from interviews of various policy makers, practitioners, and researchers. Responses from experts are used to compile criteria and objectives to be achieved, namely:

a. Harmony with the character of the Musi riverfront architecture
b. Strengthen the social and cultural activities of the Musi riverfront community
c. No interference with the natural topography of the river banks
d. Creating an interactive and accessible riverfront
e. Preserving the landscape of the riverbank

The initial assessment framework is formulated quantitatively by giving a rating for each attribute level in order to measure the results of the expert opinion assessment. It is useful for development index of ecosystem service conservation that is calculated as utility value. Data collection was carried out through questionnaire on a linkert scale of 1-10.

3. Assigning relative weights to the attributes

The next step is assigning relative weights to the attributes called Weight. The weight shows the magnitude of the effect of attributes. Assigning the relative weight indicates the differences

between the worst and the best level that contributes most in overall value. The extent of the value difference between attributes is assessed by assigning a score to the relative significance of the range compared to the most important range. The weight is shown in percentage number to compare the effect of the overall attributes.

4. Aggregating the single-attribute evaluations and performing sensitivity analyses to make recommendations

The process of identifying housing is assessed based on the combined effect of the attribute value and weight called Single-attribute utility (SAU). It is to aggregate the weights of attributes and the single-attribute evaluations of alternatives to obtain an overall evaluation of alternatives.

In the last step of the procedure, sensitivity analyses are carried out to evaluate the stability of the results. The impact of different values and weights on the multi-attribute utilities of the available alternatives can be determined. In addition to the ones described earlier, there are various techniques to gain weight. One way to obtain different values and weights is by using different elicitation methods. Thus, the application of the Multi-Attribute Utility theory can provide other alternatives for the consideration in making decisions.

After SAU and weight is calculated, the next process is to calculate Multi-Attribute Utility (MAU); therefore, the MAU is an accumulation of the four SAU level attributes. It is assumed that the alternative with the highest overall evaluation will be chosen. It can be concluded that alternative housing with the highest MAU is the best alternative according to the criteria. Furthermore, conflicts between values are assumed to be handled and resolved by explicitly considering the extent of consideration trade-off attribute values, as reflected by relative interests or weights. The MAUT method calculates MAU alternative house as an increase from the SAU constituent (Jansen, 2011). The calculation formula is as follows:

$$v\,(x) \quad = \sum_{i=1}^{n} w_i v_i\ (x_i)\ ,$$

Where:

$v(x)$ = MAU of the alternative x
w_i = the importance weight of the ith attribute
$w_i\ v_i\ (x_i)$ = SAU attribute level of the ith of the alternative x
$v_i(x_i)$ = the value of alternative x on the ith attribute
n = the number of different attributes

Result and Discussion

The identifying process starts with evaluating each alternative separately on each attribute. It is a process to value the Attribute Level called the Attribute Values. The value shows the suitability of the attributes level towards achieving the objective of the criteria (see Table 2).

The attribute levels of the house types were chosen for measuring the type of assessment criteria that represent and strengthen the character of local architecture or the effectiveness of the use of land. Criteria for house type are related to land cover, blocking of water flow, and riverfront wetland absorption ability. The building mass and the foundation of the type of house have some effects on the land cover. Building construction that covers less land will be better for ecosystem service. Living on the river banks are faced with the risk of flooding and overflow. The modifying construction or building at a safe distance from the banks of the river could reduce the risk. Building construction on the banks of the river allows tidal to flow naturally. The type of house is also related to the cultural landscapes of the society of the community.

Table 2 Attribute Values

Attribute	Attribute levels	Attribute values
House Type	Floating house	7.87
	Stilt row house	6.87
	Apartment	4.13
Buffer Zone Width	0-10 m	6.13
	11-20 m	6.87
	21-30 m	6.60
	>30m	5.7
River Edge Wall	Natural	6.13
	Polder	6.80
	Riverfront Platform	7.67
Open Space Type	Green space	7.08
	Park	7.24
	Playground	7.36

In the second attribute, the buffer zone serves as a green and building-free corridor to support the riverfront wetland function as a reservoir of river overflow. However, it also needs to consider the convenience of the people to get access to the river. Buffer zone provides natural space on the banks of the rivers to absorb pollution, to purify and store water to be reprocessed for urban water needs. The buffer zone is formed in a safe distance to reduce the risk of flooding the houses on the banks of the river. The estimated optimal size of the buffer area is used for the purpose of a balance between ecosystem restoration and communal facilities.

Whereas, the third attribute is arranged based on the river edge wall which keeps the nature of the topography and tides. The type of the selected wall is to maintain natural flows and tides in riverfront wetland. No wall that becomes the natural choice is built without construction. Polder is a barrier that separates housing and rivers to control the flooding. Meanwhile, the riverfront platform is a platform bordering the built area along the river bank. It facilitates community activities through the river edge without blocking the view of the river.

In the last attribute, open space is built to perform as a reservoir to prevent flooding and for communities' daily activities. The riverfront is a potential open space for community activities. It is an interactive cultural landscape that also accommodates economic, culture, and aesthetic purposes in a water-based city. The open space maintains water qualities, provides aquatic habitats, controls the flood, and extends a reservoir for the ecosystem service conservation.

Table 3 Weights

Attribute	Develop area with riverfront city character
House Type	55.57%
Buffer Zone Width	17.38%
River Edge Wall	22.88%
Open Space Type	4.16%

The type of house has the most weight to consider. It has a significant influence to alter the character of the riverside settlement. The preference of river bank construction also has a major influence on transforms of the riverside landscape. Meanwhile, the buffer zone distance and open space have least effect of the landscape's transformation.

Table 4 Single-attribe utility (SAU) aggregated

Attributes	Level Attributes	Single-attribute utility (SAU)
House Type	Floating house	4.37
	Stilt row house	3.82
	Apartment	2.30
Buffer Zone Width	0-10 m	1.07
	11-20 m	1.19
	21-30 m	1.15
	>30	0.99
River Edge Wall	Natural	1.40
	Polder	1.56
	Riverfront platform	1.76
Open Space Type	Green space	0.29
	Park	0.30
	Playground	0.31

The highest value of house type fot conservation riverfront city is the floating house. The best width of the buffer zone for the first objective is 11-30 m to create an interactive riverfront area. Likewise, the platform waterfront enables the community interaction to the river is the choice for preserving the cultural community river character. The playground is the best for strengthening the river community social-cultural.

Table 5 The best alternative housings

The Highest MAU	Housing Profile			
	House Type	Buffer Zone Width	River Edge Wall	Open Space Type
7.63	Floating house	11-20 m	Riverfront platform	Playground
7.62	Floating house	11-20 m	Riverfront platform	Park

Several alternatives are concluded as the best solution for the development of housing in riverfront wetland area. The weight method effects on the best alternative combination. It is demonstrated in the shifted attribute only on open space type. The residents are very concerned about changing the choice of the type of house, the distance from the house to the river bank and the type of construction of the river bank. The residents can more accept only the switch of the open space type preference.

Conclusion

The recommendations from the assessment results are the basic four main attributes of element combination for housing planning on the Palembang bank area. In reality, it should be supplemented with some additional attributes that are not listed in the option that is assessed to increase the potential for successful planning. River bank housings have some criteria for the planning a river-oriented. It should take advantage of the riverbank's natural potential as a visual feature. The planning also utilize the area's beneficial of the riverbank fresh air flow and sunlight. Residential buildings must adapt to rivers tidal for characterisation of riverbank landscapes. The distance between the dwelling and the river bank should be close enough to facilitate residents' activities to the river, but also far enough to avoid blocking the flow of the river due to buildings. The comfort of doing activities on the riverbank is one of the important criteria. The riverside area is a natural public space that accommodates many of the daily activities of the riverbank residents. For this reason, planning must consider the convenience of accessibility to the river bank as an important factor. The construction of the river wall not only to reduce river wave disturbances without reducing people's access to the river (Oktarini, 2019b).

The riverfront wetland planning should respect and strategically incorporate public values to make plans that not only quite novel ecologically but also with cultural values. The adaptive strategy is to balance both social and ecological issues. All the ecological process must be a part of everyday life which is influenced by the people. Each location has a different environmental problem in finding environmental solutions. Therefore, it would increase the appreciation of urban communities in the wetland ecosystem (Oteros-Rozas et al., 2015) (Burdon et al., 2018).

The Multi-criteria decision-making methods incorporates all of these interests and provides several alternatives as the basis of the decisions. It can be adapted to be used in many decision scenarios. The technic is quite simple to be used in any variety of situations. Problems faced can be formally defined in terms of objectives, attributes, and various criteria to consider. it only requires calculation of preferences for attributes. It is more comprehensible for decision makers who are unfamiliar with calculating the monetary value in environmental impact. In addition, each attribute can be evaluated separately to be analyzed and examined the effect. It makes evaluations easily adapted to decision making.

Figure 1 The Illustration of The Best Altenatif Housing

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References

Bahreldin, I. Z. (2020). Beyond the Riverside: An Alternative Sustainable Vision for Khartoum Riverfront Development. Civil Engineering and Architecture, 113-126.

Boyer, T., & Polasky, S. (2004). Valuing urban wetlands: A review of non-market valuation studies. Wetlands, 24(4), 744–755.

BuHamdan, S., Alwisy, A., Bouferguene, A., & Al-Hussein, M. (2019). The application of multi-attribute utility theory for a market share-based design evaluation. International Journal of Housing Markets and Analysis.

Burdon, D., Boyes, S. J., Elliott, M., Smyth, K., Atkins, J. P., Barnes, R. A., & Wurzel, R. K. (2018). Integrating natural and social sciences to manage sustainably vectors of change in the marine environment: Dogger Bank transnational case study. Estuarine, Coastal and Shelf Science, 201, 234–247.

DENPAIBOON, C., TOHIGUCHI, M., MATSUDA, H., & HASHIMOTO, S. (2000). Typology and life style analysis of the raft house (Ruan Pae) in riverine settlements in Thailand. Journal of Architecture and Planning (Transactions of AIJ), 65(533), 173–180.

Huang, I. B., Keisler, J., & Linkov, I. (2011). Multi-criteria decision analysis in environmental sciences: Ten years of applications and trends. Science of the Total Environment, 409, 3578–3594.

Jansen, S. J. T. (2011). The Multi-attribute Utility Method. In S. J. T. Jansen, H. C. C. H. Coolen, & R. W. Goetgeluk (Eds.), The Measurement and Analysis of Housing Preference and Choice (pp. 101–126). Dordrecht: Springer Netherlands. Retrieved from http://link.springer.com/10.1007/978-90-481-8894-9

Karrasch, L., Klenke, T., & Woltjer, J. (2014). Linking the ecosystem services approach to social preferences and needs in integrated coastal land use management–A planning approach. Land Use Policy, 38, 522–532.

Keeney, R. L., & Von Winterfeldt, D. (1989). On the uses of expert judgment on complex technical problems. IEEE Transactions on Engineering Management, 36(2), 83–86.

Keeney, R. L., Von Winterfeldt, D., & Eppel, T. (1990). Eliciting public values for complex policy decisions. Management Science, 36(9), 1011–1030.

McInnes, R. (2010). Urban Development Biodiversity and Wetland Management [Expert Workshop Report]. Oxford, UK: Bioscan (UK) Ltd.

Oktarini, M. F. (2019a). The Settlement Morphology Along Musi River: The Influence Of River Characteristics. Dimensi (Journal of Architecture and Built Environment), 45(2), 133–140.

Oktarini, M. F. (2019b). The Spreading of Vernacular Architecture at the Riverways of South Sumatra, Indonesia. Indonesian Journal of Geography, 51(3), 385–392. (Vernacular Settlement). https://doi.org/10.22146/ijg.43923

Oteros-Rozas, E., Martín-López, B., Daw, T. M., Bohensky, E. L., Butler, J. R., Hill, R., … Ruiz-Mallén, I. (2015). Participatory scenario planning in place-based social-ecological research: Insights and experiences from 23 case studies. Ecology and Society, 20(4).

Prescott, M. F., & Ninsalam, Y. (2016). The synthesis of environmental and socio-cultural information in the ecological design of urban riverine landscapes. Sustainable Cities and Society, 20, 222–236.

Pritchard, D. (2008). Culture and Wetlands: A Ramsar Guidance Document. Culture and Wetlands: A Ramsar Guidance Document. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2592365

Sabatino, S., Frangopol, D. M., & Dong, Y. (2015). Sustainability-informed maintenance optimization of highway bridges considering multi-attribute utility and risk attitude. Engineering Structures, 102, 310–321.

Shaik, M., & Abdul-Kader, W. (2011). Green supplier selection generic framework: A multi-attribute utility theory approach. International Journal of Sustainable Engineering, 4(01), 37–56.

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FORM MITRA BESTARI

Judul Artikel : The Decision-Making in Planning of the Riverfront Housing
Kode Artikel : -
Waktu Review : (Bulan Juni/Tahun 2022)

Panduan Review: Review dilakukan untuk menilai konten dan struktur artikel. Penilaian Konten/Substansi dilakukan untuk menilai Pendahuluan, Metode, Hasil dan Pembahasan, dan Kesimpulan. Penilaian Struktur dilakukan untuk menilai struktur artikel yang meliputi petunjuk penulisan, kesesuaian gambar, table dan referensi. Silakan untuk memberikan skor penilaian (Sesuai kriteria skor penilaian) terhadap kedua aspek tersebut pada table penilaian di bawah ini.

A. PENILAIAN KONTEN

Komponen yang Dinilai	Komentar dan Saran Perbaikan*
1. UMUM	
a. Kesesuaian substansi artikel dengan focus dan scope Jurnal Tataloka	Substansi artikel sesuai dengan *focus* dan *scope* Jurnal Tataloka yaitu penelitian di bidang perencanaan wilayah dan kota. (Skor 9/10)
2. JUDUL DAN ABSTRAK	
a. Judul singkat dan menjelaskan maksud dan isi artikel	Judul singkat, mencerminkan isi dan maksud artikel. (Skor 9/10)
b. Abstrak menggambarkan ringkasan konten artikel, terdiri dari latar belakang penelitian, permasalahan, tujuan, metode, hasil penelitian, dan kesimpulan (150-250 kata)	Pada abstrak terdapat latar belakang penelitian, permasalahan, tujuan, dan metode yang ditulis dalam 150-250 kata. Namun hasil dan kesimpulan yang didapatkan dari penelitian di Palembang belum tertulis. Hasil dan kesimpulan yang tertulis bersifat umum. Jika hasil penelitian menentukan keputusan perencanaan lingkungan, maka keputusan seperti apa yang diambil pada penelitian di Palembang. (Skor 6/10)
c. Kata kunci dapat menggambarkan inti dari pembahasan (4-6 kata kunci)	Kata kunci mencermikan isi artikel dan ditulis dalam 4-6 kata. (Skor 9/10)
3. PENDAHULUAN	
a. Pendahuluan dengan jelas mendefinisikan latar belakang, permasalahan, dan tujuan penelitian	Pada pendahuluan terdapat latar belakang penelitian, permasalahan, dan tujuan penelitian. (Skor 8/10)
b. Pendahuluan menjelaskan state of the art penelitian dengan mengulas hasil penelitian-penelitian yang relevan dan sintesis capaian	Pada pendahuluan telah dibahas beberapa penelitian yang relevan. (Skor 8/10)

Komponen yang Dinilai	Komentar dan Saran Perbaikan*
pengetahuan teoritis dan praktis yang dicapai saat ini	
c. keaslian gagasan dan pernyataan yang menunjukkan knowledge gap yang dipenuhi oleh penelitian atau kebaruan penelitian (novelty)	Pada pendahuluan belum menunjukkan adanya knowledge gap yang dipenuhi oleh penelitian atau kebaruan penelitian. (Skor 6/10)
4. METODE	
a. menjelaskan teknik pengumpulan data (survei/observasi/wawancara/kuesioner yang menunjukkan operasionalisasi metode terpilih, berikut kriteria dan sasaran sampling, responden, dan informan kunci)	Teknik pengumpulan data telah dijelskan, beserta dengan kriteria dan sasaran sampling, responden, dan informan kunci. Namun jumlah sampling kuesioner tidak disebutkan. (Skor 7/10)
b. Penjelasan mengenai operasional teknik analisis data yang dilakukan (jika penulis menggunakan perhitungan statistic, perhitungan statistic valid dan diterapkan dengan benar)	Operasional teknik analisis telah dituliskan secara rinci tahapannya. (Skor 9/10)
5. HASIL DAN PEMBAHASAN	
a. Kedalaman sintesis, kaitan antara judul artikel dengan abstrak serta temuan dalam penelitian	Pembahasan sudah dilakukan dengan cukup baik. Hasil analisis dan hasil temuan sudah dijelaskan. Terdapat keterkaitan antara judul, abstrak, dan temuan penelitian. (Skor 8/10)
b. Hasil ditafsirkan dengan baik dan terkait dengan pengetahuan yang ada tentang topik tersebut	Hasil ditafsirkan dengan baik. (Skor 8/10)
c. Hasil dan pembahasan menjelaskan tentang kebaruan dari penelitian ini (bagaimana interpretasi hasil analisis, alur diskusi, dan elaborasi dengan mempertimbangkan umpan-balik terhadap konsep dan metode yang digunakan), menjelaskan perbedaan hasil atau temuan dengan penelitian sebelumnya)	Hasil pembahasan tidak menekankan pada adanya kebaruan, karena tidak dikaitkan dengan temuan penelitian sebelumnya. (Skor 5/10)
6. KESIMPULAN	
a. Kesimpulan menjawab tujuan yang telah dirumuskan, termasuk proposisi atau hipotesis yang diajukan	Kesimpulan telah menjawab tujuan. (Skor 7/10)
b. Semua elemen pembahasan berhubungan secara logis dengan tujuan penelitian (kemungkinan pendekatan ilmiah lanjutan maupun prediksi terhadap implikasi praktis dapat ditampilkan di sini).	Elemen pembahasan berhubungan secara logis dengan tujuan penelitian. (Skor 7/10)
c. Kesimpulan menjelaskan bagaimana penelitian ini memajukan bidang dari keilmuan, baik secara pengembangan teori, metodologi, maupun implikasi kebijakan.	Kesimpulan kurang menjelaskan temuan yang telah didapatkan dari analisis. Kesimpulan kurang menegaskan hasil keputusan seperti apa yang perlu diambil dalam perencanaan tepi sungai di

Komponen yang Dinilai	Komentar dan Saran Perbaikan*
	Palembang. Hasil penelitian tidak dibandingkan juga dengan hasil penelitian sebelumnya. Sebaiknya sitasi yang dilakukan di kesimpulan dikaitkan juga dengan hasil penelitian yang telah dilakukan, apakah sejalan atau berbeda. (Skor 6/10)
TOTAL	7,5/10

- *Apabila terlampir dalam bentuk comment di artikel, maka silakan tulis "terlampir"*

B. PENILAIAN STRUKTUR

Komponen yang Dinilai	Komentar (Jika Diperlukan)*
a. Artikel disusun dengan baik dan sesuai dengan "author guidelines"	Susunan artikel sesuai author guidelines. (Skor 9/10)
b. Gambar dan table sesuai dengan pernyataan dalam teks. Tabel dan gambar disusun berurutan dan dirujuk dalam teks/paragraf	Tabel 3, 4, dan 5 belum dirujuk dalam teks. Figure 1 sebaiknya tidak diletakkan setelah kesimpulan, namun di bagian Hasil dan Pembahasan. (Skor 7/10)
c. Referensi yang digunakan sesuai dengan topik artikel minimal 20 referensi (80% referensi berasal dari jurnal ilmiah) dan menggunakan sumber referensi yang terbaru (10 tahun terakhir)	Total referensi hanya 18. Referensi jurnal ilmiah sebanyak 83%. Jurnal terbaru hanya sebanyak 50%. (Skor 7/10)
d. Pengutipan refensi menggunakan standar referensi yang dirujuk oleh jurnal (APA 6th Edition)	Sitasi untuk 2 atau lebih penulis tidak sesuai dengan APA 6th Ed. Contoh: (Oteros-Rozas et al., 2015) (Burdon et al., 2018) Seharusnya ditulis: (Burdon et al., 2018; Oteros-Rozas et al., 2015). Penulisan referensi juga belum sesuai. Mohon periksa panduan penulisan referensi dan sitasi untuk APA 6th Edition. (Skor 5/10)
e. Artikel ditulis dengan Bahasa standar (Indonesia atau inggris/American English style) yang mudah dipahami (readability)	Artikel ditulis dengan Bahasa standar. (Skor 9/10)
TOTAL	7,4/10

**apabila terlampir dalam bentuk comment di artikel, maka silakan tulis "terlampir"*

C. REKOMENDASI MITRA BESTARI (Checklist pada Kolom Rekomendasi)

Keterangan	Rekomendasi
Diterima	
Direvisi dengan revisi minor (rekomendasi editor)	
Direvisi untuk ditelaah kembali/revisi mayor (perbaikan seperti yang direkomendasikan oleh mitra bestari dan editor)	√

Tidak diterima untuk publikasi, artikel harus diubah secara menyeluruh, penulis disarankan mengirimkan artikel kembali (resubmit)	
Ditolak/dikembalikan	

KOMENTAR DAN SARAN

Setelah memberikan poin pada 3 hal tersebut, Bapak/Ibu dimohon untuk memberikan komentar pada artikel ini tentang gaya penulisan dan kemudahan untuk dipahami

Gaya bahasa penulisan yang digunakan mudah dipahami.

Review Artikel Berjudul

The Decision-Making in Planning of the Riverfront Housing

Penulis: Maya Fitri Oktarini, Primadella, dan Listen Prima

Kepada Yth. Editor in Chief Tata Loka

Pertama saya sampaikan penghargaan atas kepercayaan yang diberikan kepada saya untuk melakukan review terhadap artikel ini. Secara garis besar, saya mendapati artikel ini mempunyai sesuatu untuk disampaikan hanya saja masih mempunyai masalah besar pada ketuntasan hasilnya. Kesimpulan saya tersebut dilatari oleh beberapa pendapat berikut:

1. Membaca judul maupun abstrak, artikel ini mengandung ambigu terhadap kebaruan yang diharapkan. Saya masih belum dapat mengambil kesimpulan tegas apakah artikel ini hendak memberi penegasan terhadap penggunaan metode Multi-Attribute Utility Theory (MAUT) ataukah ingin mengemukakan hasil investigasi menggunakan metode tersebut untuk konteks spesifik (perumahan tepian air). Dalam bagian pendahuluan, artikel ini menyebutkan "This research measures the solution for developing housing on riverfront wetlands along the Musi River in Palembang, one of big cities in Indonesia." Namun demikian tujuan ini tampak tidak dielaborasi dengan cukup adekuat pada risetnya. Tidak juga diungkap dengan jelas apakah artikel ini merupakan "pengandaian" atau sebuah simulasi terhadap proses pengambilan keputusan. Artikel berikut barangkali dapat menjadi contoh Kailiponi, P. (2010) 'Procedia Engineering International Conference on Evacuation Modeling and Management (ICEM) Analyzing evacuation decisions using multi-attribute utility theory (MAUT)', Procedia Engineering, 3, pp. 163–174. doi: 10.1016/j.proeng.2010.07.016.

Dear. Editor in Chief Tataloka

First, I would like to express my appreciation for the trust given to me to review this article. Overall, I found this article to have something to say but that it still has major problems with the thoroughness of the results.

My conclusion is based on the following opinions:

1. Reading the title and abstract, this article contains ambiguity about the expected novelty. I still can't draw a firm conclusion whether this article wants to emphasize the use of the Multi-Attribute Utility Theory (MAUT) method or whether to present the results of an investigation using this method for a specific context (waterfront housing). In the introduction, this article mentions "These research measures the solution for developing housing on riverfront wetlands along the Musi River in Palembang, one of big cities in Indonesia." However, this goal does not appear to have been adequately elaborated on in the research. It is also not clear whether this article is a "presupposition" or a simulation of the decision-making process. The following article may be good example: Kailiponi, P. (2010) 'Procedia Engineering International Conference on Evacuation Modeling and Management (ICEM) Analyzing evacuation decisions using multi-attribute utility theory (MAUT)', Procedia Engineering, 3, pp. 163–174. doi: 10.1016/j.proeng.2010.07.016.

2. Artikel tertulis "Identification and sampling were carried out using a questionnaire involving several experts in the environmental, residential and urban fields. The opinion of experts will provide an assessment of the effect of attributes based on ecosystem protection criteria, identify the best attributes, identify the effect of attribute category groups on the criterion value, and identify the best housing alternatives that match the criteria."

Tampak bahwa aspek metodologis dalam penelitian ini juga belum tuntas dijelaskan. Ekspresi "experts" tidak dijelaskan berapa orang, siapa saja, keahlian apa, kapan dilakukan wawancara, seterusnya yang merupakan bagian dari kesahihah, legitimasi keilmuan maupun bidang kerja yang relevan dengan topik. Penggunaan kalimat "will" seakan mengindikasikan metode ini baru akan diimplementasikan dan belum digunakan untuk penelitian. Ketepatan dalam penggunaan kata kerja tampak perlu diperhatikan dan sekaligus diperjelas. Tabel 1 List of attributes and its levels tidak terjelaskan dengan baik dari mana asalnya. Apabila ini diusulkan sendiri oleh para penulis, tampaknya tetap perlu penjelasan rasionalitasnya apakah merupakan pemikiran deduktif dari teori tertentu (referensi dari mana?) atau dari pengamatan empirik.

Tampak dalam metode MAUT ini justru aspek "elicitation" inilah yang sangat penting untuk dibahas mendalam.

2. Written article "Identification and sampling were carried out using a questionnaire involving several experts in the environmental, residential and urban fields. The opinion of experts will provide an assessment of the effect of attributes based on ecosystem protection criteria, identify the best attributes, identify the effect of attribute category groups on the criterion value, and identify the best housing alternatives that match the criteria."

It appears that the methodological aspects of this study have not been fully explained. The expression "experts" does not explain how many people, who, what expertise, when to conduct interviews, and so on which are part of the validity, scientific legitimacy, or fields of work relevant to the topic. The use of the sentence "will" seems to indicate that this method has just been implemented and has not been used for research. The accuracy in the use of verbs seems to need attention and at the same time to be clarified. Table 1 The list of attributes and its levels is not well explained where it comes from. If this is proposed by the authors themselves, it seems that it still needs an explanation of whether it is deductive reasoning from a particular theory (reference from where?) or from empirical observation.

It appears that in the MAUT method, it is precisely this "elicitation" aspect that is very important to be discussed in depth.

3. Penjelasan terhadap para "experts" maupun hasil penilaian mereka tampaknya dicoba diungkap pada bagian 2. Mereka disebutkan "working in and experiencing the housing sector for approximately 5 years".

Namun demikian, penjelasan ini masih terlalu umum sehingga perlu lebih rinci, termasuk jumlahnya. Kompilasi kriteria yang berjumlah 5 (dari "harmony" sampai "preserving") perlu diperjelas bagaimana cara merumuskannya. Satu tambahan lagi, penyebutan skala "Likert" dengan Linkert perlu dikoreksi.

4. Kesimpulan tampak justru menampilkan banyak hal baru dan lebih menyerupai bagian diskusi terhadap temuan. Demikian pula adanya tambahan informasi berupa alternatif desain lebih tepat sebagai bagian dari diskusi terhadap temuan dan analisis menggunakan MAUT tersebut. Elaborasi dari Tabel 5 justru tidak tampak pada kesimpulan.

3. The explanation of the "experts", as well as the results of their assessments, seems to be presented in section 2. They are mentioned as "working in and experiencing the housing sector for approximately 5 years".

However, this explanation is still too general so it needs more detail, including the number. The compilation of 5 criteria (from "harmony" to "preserving") needs to be clarified how to formulate them. One more addition, the mention of the "Likert" scale with Linkert needs to be corrected.

4. Conclusions seem to show many new things and are more like the discussion section of the findings. Likewise, additional information in the form of alternative designs is more appropriate as part of the discussion of the findings and analysis using the MAUT. The elaboration of Table 5 does not appear in the conclusion.

T A T A
L O K A

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FORM MITRA BESTARI

Judul Artikel :
Kode Artikel :
Waktu Review : (Bulan/ tahun)

Panduan Review: Review dilakukan untuk menilai konten dan struktur artikel. Penilaian Konten/Substansi dilakukan untuk menilai Pendahuluan, Metode, Hasil dan Pembahasan, dan Kesimpulan. Penilaian Struktur dilakukan untuk menilai struktur artikel yang meliputi petunjuk penulisan, kesesuaian gambar, table dan referensi. Silakan untuk memberikan skor penilaian (Sesuai kriteria skor penilaian) terhadap kedua aspek tersebut pada table penilaian di bawah ini.

A. PENILAIAN KONTEN

Komponen yang Dinilai	Komentar dan Saran Perbaikan*
1. UMUM	
a. Kesesuaian substansi artikel dengan focus dan scope Jurnal Tataloka	Cukup Sesuai
2. JUDUL DAN ABSTRAK	
a. Judul singkat dan menjelaskan maksud da nisi artikel	Judul harus menyebutkan nama sungai di mana…karena ini bukan riset untuk menyimpulkan suatu hal yang bersifat GENERIK tetapi permasalahan di suatu KASUS
b. Abstrak menggambarkan ringkasan konten artikel, terdiri dari latar belakang penelitian, permasalahan, tujuan, metode, hasil penelitian, dan kesimpulan (150-250 kata)	Tidak ada kesimpulan yang disebutkan diakhir paragraf
c. Kata kunci dapat menggambarkan inti dari pembahasan (4-6 kata kunci)	Cukup memadai
3. PENDAHULUAN	
a. Pendahuluan dengan jelas mendefinisikan latar belakang, permasalahan, dan tujuan penelitian	
b. Pendahuluan menjelaskan state of the art penelitian dengan mengulas hasil penelitian-penelitian yang relevan dan sintesis capaian pengetahuan teoritis dan praktis yang dicapai saat ini	Kurang memadai salah satu nya tidak disebutkan secara tersurat dan jelas tujuan dari penelitian atau apa pertanyaan penelitian yang ingin dijawab melalui penelitian dan metode yang dipilih menggunakan MAUT
c. c. keaslian gagasan dan pernyataan yang menunjukkan knowledge gap yang dipenuhi	Sudah diusahakan untuk disebutkan akan tetapi karena tujuannya tidak diungkap secara tersurat

Komponen yang Dinilai	Komentar dan Saran Perbaikan*
oleh penelitian atau kebaruan penelitian (novelty)	maka gab nya tidak jelas (kabur)
4. METODE	
a. menjelaskan teknik pengumpulan data (survei/observasi/wawancara/kuesioner yang menunjukkan operasionalisasi metode terpilih, berikut kriteria dan sasaran sampling, responden, dan informan kunci)	Perlu dikaitkan lagi tetapi tentu dengan objektif yang harus dinyatakan secara tersurat terlebh dahulu.
b. Penjelasan mengenai operasional teknik analisis data yang dilakukan (jika penulis menggunakan perhitungan statistic, perhitungan statistic valid dan diterapkan dengan benar)	Idem
5. HASIL DAN PEMBAHASAN	
a. Kedalaman sintesis, kaitan antara judul artikel dengan abstrak serta temuan dalam penelitian	Permasalahn penelitian ini apakah mengangkat issue terkait Metode di dalam Decision Making atau Permasalahan Riverfront Housing? Ini tidak jelas/tegas
b. Hasil ditafsirkan dengan baik dan terkait dengan pengetahuan yang ada tentang topik tersebut	idem
c. Hasil dan pembahasan menjelaskan tentang kebaruan dari penelitian ini (bagaimana interpretasi hasil analisis, alur diskusi, dan elaborasi dengan mempertimbangkan umpan-balik terhadap konsep dan metode yang digunakan), menjelaskan perbedaan hasil atau temuan dengan penelitian sebelumnya)	idem
6. KESIMPULAN	
a. Kesimpulan menjawab tujuan yang telah dirumuskan, termasuk proposisi atau hipotesis yang diajukan	Karena tujuannya belum disebutkan secara tersurat maka tidak bisa dipahami dengan jelas
b. Semua elemen pembahasan berhubungan secara logis dengan tujuan penelitian (kemungkinan pendekatan ilmiah lanjutan maupun prediksi terhadap implikasi praktis dapat ditampilkan di sini).	idem
c. Kesimpulan menjelaskan bagaimana penelitian ini memajukan bidang dari keilmuan, baik secara pengembangan teori, metodologi, maupun implikasi kebijakan.	idem
TOTAL	

- *Apabila terlampir dalam bentuk comment di artikel, maka silakan tulis "terlampir"*

B. PENILAIAN STRUKTUR

Komponen yang Dinilai	Komentar (Jika Diperlukan)*
a. Artikel disusun dengan baik dan sesuai dengan "author guidelines"	
b. Gambar dan table sesuai dengan pernyataan dalam teks. Tabel dan gambar disusun berurutan dan dirujuk dalam teks/paragraf	
c. Referensi yang digunakan sesuai dengan topik artikel minimal 20 referensi (80% referensi berasal dari jurnal ilmiah) dan menggunakan sumber referensi yang terbaru (10 tahun terakhir)	
d. Pengutipan refensi menggunakan standar referensi yang dirujuk oleh jurnal (APA 6th Edition)	
e. Artikel ditulis dengan Bahasa standar (Indonesia atau inggris/American English style) yang mudah dipahami (readability)	
TOTAL	

**apabila terlampir dalam bentuk comment di artikel, maka silakan tulis "terlampir"*

C. REKOMENDASI MITRA BESTARI (Checklist pada Kolom Rekomendasi)

Keterangan	Rekomendasi
Diterima	
Direvisi dengan revisi minor (rekomendasi editor)	
Direvisi untuk ditelaah kembali/revisi mayor (perbaikan seperti yang direkomendasikan oleh mitra bestari dan editor)	Perlu ditelaah kembali
Tidak diterima untuk publikasi, artikel harus diubah secara menyeluruh, penulis disarankan mengirimkan artikel kembali (resubmit)	
Ditolak/dikembalikan	

KOMENTAR DAN SARAN

Setelah memberikan poin pada 3 hal tersebut, Bapak/Ibu dimohon untuk memberikan komentar pada artikel ini tentang gaya penulisan dan kemudahan untuk dipahami

Judul harus menyebutkan nama sungai yang menjadi subjek penelitian di mana…karena ini bukan riset untuk menyimpulkan suatu hal yang bersifat GENERIK tetapi permasalahan di suatu KASUS Perlu disebutkan secara tersurat dan jelas tujuan dari penelitian ini atau apa pertanyaan penelitian yang ingin dijawab melalui penelitian ini.