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PRIORITY ANALYSIS OF ROAD INFRASTRUCTURE DEVELOPMENT IN THE MANDALIKA SPECIAL ECONOMIC AREA: APPLICATION OF ANALYTIC NETWORK PROCESS (ANP) AND TOPSIS METHODS

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ABSTRACT
The Mandalika Special Economic Zone (KEK) is key to Indonesia's economic growth. Located in southern Lombok Island, it became a Tourism SEZ via Government Regulation Number 52 of 2014. However, infrastructure development in Mandalika SEZ faces challenges, notably low investment returns. Choosing the right roads is crucial, requiring effective decision-making to attract investors and promote regional development in Central Lombok. This research used literature review and data collection through interviews and questionnaires to assess road development criteria. The Analytic Network Process (ANP) and TOPSIS methods prioritized infrastructure development. Four key criteria were identified: Tourism Infrastructure, Costs, Investor Interest, and Average Daily Traffic. The study ranks road segments for Mandalika SEZ, with the Circuit's Southern Ring Road (P5 - I1) as the top priority. This MCDA-derived prioritization provides actionable insights for policymakers and investors, enhancing strategic infrastructure investments to boost economic impact and support sustainable tourism growth. The findings validate the integration of ANP and TOPSIS in regional development planning.

Keywords: mandalika, mandalika special economic zone, road infrastructure development

INTRODUCTION

The Mandalika Special Economic Zone (KEK) has been designated as a central focus for Indonesia's economic development (Azizurrohman et al., 2023; Putra & Wahidah, 2023; Yuli et al., 2023). Located in the southern region of Lombok Island, the Mandalika Special Economic Zone was officially established as a Tourism Special Economic Zone through Government Regulation Number 52 of 2014. Positioned adjacent to the Indian Ocean, the Mandalika SEZ spans an area of 1,035.67 hectares. According to the NTB RPJMD 2019-2023, the advancement of the Mandalika SEZ is anticipated to stimulate growth within the tourism sector of West Nusa Tenggara Province, a region characterized by significant untapped potential. The Mandalika Tourism SEZ is managed by PT Pengemban Pariwisata Indonesia (ITDC), a state-owned enterprise PT Aviasi Pariwisata Indonesia subsidiary, more commonly referred to as the InJourney Group (Ayu et al., 2023; Nursyam et al., 2023; Pratama et al., 2023; Zuhdiyah Matienatul Iemaaniah et al., 2023).

Nevertheless, infrastructure development within the Mandalika SEZ is confronted with considerable challenges. A prominent issue is the relatively low rate of return on investment, which extends over a prolonged period, thereby hindering the acquisition of financing from financial institutions or commercial banks (Ayu et al., 2023; Sayuti et al., 2023; Susanti et al., 2022). The uncertainty surrounding global economic conditions and elevated inflation rates further complicates the situation, resulting in widespread uncertainty within the tourism sector. In 2022, ITDC reported a net loss of IDR209.9 billion, primarily due to costs associated with the organization of the MotoGP event (Caraka et al., 2023).

A solution to enhance investment value must be created to overcome this situation and stimulate tourism development in the Mandalika Area. One potential approach involves optimizing the development of basic infrastructure, including regional roads and supporting facilities. Establishing the priority of road construction within the master plan is crucial and requires an effective decision-making method. Therefore, selecting the correct method is essential to attracting investor interest, which will aid in promoting positive regional development, especially in Central Lombok.

Multi-criteria decision analysis (MCDA) is a framework used to identify the optimal alternative from various options, considering multiple distinct criteria. Two MCDA methods that are widely employed are the analytic hierarchy process (AHP) and the analytic network process (ANP), which was developed by Saaty (Başkent & Balci, 2024; Elghazouly et al., 2024; Ferla et al., 2024; Kumar & Prasad, 2021). The selection of ANP in this research is attributed to its capacity to address multi-criteria issues characterized by interdependent relationships between criteria. A notable strength of ANP is its capacity to model systems with feedback, which is an absence in functionality in AHP. In addition to ANP, the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) method is also applied.

TOPSIS effectively determines the priorities of alternatives based on their proximity to the ideal solution. The TOPSIS method is based on positive ideal solutions (best) and harmful ideal solutions (worst), allowing for precise and measurable rankings of alternatives. TOPSIS also excels in efficiently and quickly handling quantitative data, making it highly suitable for complex multi-criteria analysis (Gao et al., 2018; Utama et al., 2021). Recent studies have demonstrated the continuing utility of ANP and TOPSIS across various decision-making domains. For instance, Kenger et al. (2023) utilized ANP to determine the weights of criteria related to urban transportation, later using VIKOR to rank the solutions.

Additionally, Gao et al. (2018) employed a combined ANP-TOPSIS approach to evaluate the sustainability performance of airline companies. Furthermore, Roy et al. (2020) applied ANP-TOPSIS to optimize sustainable supply chain management in the textile industry. These studies underscore the adaptability and robustness of ANP and TOPSIS in addressing intricate decision-making problems involving multiple, often conflicting, criteria.

This research merges the ANP and TOPSIS methodologies to analyze regional development priorities within the Mandalika Special Economic Zone. This approach aims to significantly boost strategic development and effectively identify priority alternatives, fostering sustainable and competitive economic growth in the region. By integrating these two methods, we expect enhanced accuracy and reliability in the analysis results. ANP establishes criteria weights that consider interdependence and feedback, while TOPSIS ranks alternatives based on their proximity to the ideal solution.

This research aims to identify the key criteria and sub-criteria for prioritizing road infrastructure development in the Mandalika Special Economic Zone. Additionally, it analyzes and establishes the priority order for developing seven alternative road segments to enhance the Mandalika tourism area.

METHOD

The literature review and validation performed by experts identified four key criteria that influence the priorities for tourism area development, along with their corresponding weights: Tourism Infrastructure (0.38948), Costs (0.22725), Investor Interest (0.222748), and Average Daily Traffic (0.14059). Within the Tourism Infrastructure criterion are sub-criteria, specifically Accommodation Facility Infrastructure (0.69197) and Commercial Infrastructure (0.25235), further specifying factors that should be considered.

Based on the criteria and sub-criteria, the TOPSIS method elucidates the priorities for developing road infrastructure within the Mandalika Special Economic Zone. The highest priority (rank 1) is assigned to the Circuit's Southern Ring Road (P5 - I1), valued at 0.929230166. The second priority (rank 2) pertains to the Access Road KGH 1 - 2 - 3 (B4-B3), valued at 0.607161462, and the third priority (rank 3) involves the Access Golf Resort (Q3-Q5/Golf Resort), valued at 0.5965369. Subsequent priorities include the Access from Fisherman Village to Koeta Beach Park (B-B1-H1), which is ranked four and valued at 0.493004259, and the Access Road to the Jetty (B5-B2), which is ranked 5. These rankings provide a clear and actionable roadmap for infrastructure development within the Mandalika Special Economic Zone, which, if followed strategically, should bolster tourism and economic growth in the region.

The Analytic Network Process (ANP) was employed to model the interdependencies between the identified criteria and sub-criteria. During expert interviews, a pairwise comparison method was implemented to evaluate the significance of each indicator, utilizing an open questionnaire to ascertain weights from the informants. These pairwise comparisons were executed using Super Decisions Software version 2.10, a widely recognized application for ANP research, where a score of 1 denoted equal importance and a score of 3 signified moderate importance. The survey results were processed individually for each informant using the ANP Super Decisions software, and the values from ten informants were calculated for average and mode. These average and/or mode values were then utilized to establish the priority order. Complementing the ANP analysis, the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) method was applied to rank the alternative road segments based on their proximity to the ideal solution, considering the criteria weights derived from the ANP analysis. A TOPSIS questionnaire was distributed to respondents to assess the three alternatives, using a scale from 1 to 5. The data processing was facilitated by Microsoft Excel, with average scores from all respondents calculated to determine each alternative's value and performance level, which required the creation of a decision matrix.

RESULTS AND DISCUSSION

Analysis of Criteria and Sub-Criteria Weights

Data Collection Process

Data collection occurred through interviews supported by questionnaires. During expert interviews, a pairwise comparison method will be employed to assess the weight of each indicator. This weight is determined by distributing an open questionnaire to the informant. The Super Decisions software version 2.10, a widely used application in ANP research, facilitates the pairwise comparison. Selecting number 1 represents equal importance, indicating that the two compared items hold the same significance. Number 3 signifies moderate importance, meaning one item is slightly more significant than the other. This logic applies to the subsequent numbers as well.

Data Processing with the Analytic Network Process (ANP)

The data processing involves several stages: preparing a network model, assigning weights, and comparing results across criteria and between criteria and alternatives.

The survey results will be processed individually for each informant using the ANP Super Decisions software. For each respondent, three matrices will be generated that display the priority order of the most significant aspects, including criteria and alternative strategies. To derive these results, the values from ten (10) informants in a single group are calculated for average and mode. This average and/or mode value is then utilized to establish the priority order. Alongside determining the priority order for each group, the overall priority order is also computed by averaging or finding the mode of all respondents' inputs. In alignment with the problem framework of this research, which aims to identify priority alternative road infrastructure within the Mandalika Special Economic Zone (KEK) in West Nusa Tenggara, Figures 4.2 and 4.3 illustrate the decision-making hierarchy model and the ANP model being developed in the Super Decisions software application.

Pairwise Comparison Results

Once the ANP model is established, the following step involves assigning weights based on the results from the paired comparison questionnaire. This questionnaire is an enhanced version of the two-sided questionnaire found in the Super Decisions 2.10 application and has been completed by expert respondents. To ensure the integrity of paired comparisons, consistency in the respondents' answers is essential, allowing for a maximum inconsistency value of 0.1 (Saaty, 2001).

Criteria Aspects

The criteria being compared include cost, average daily traffic, land status, and land use. The processed data results for these criteria are illustrated in Figure 1 below.

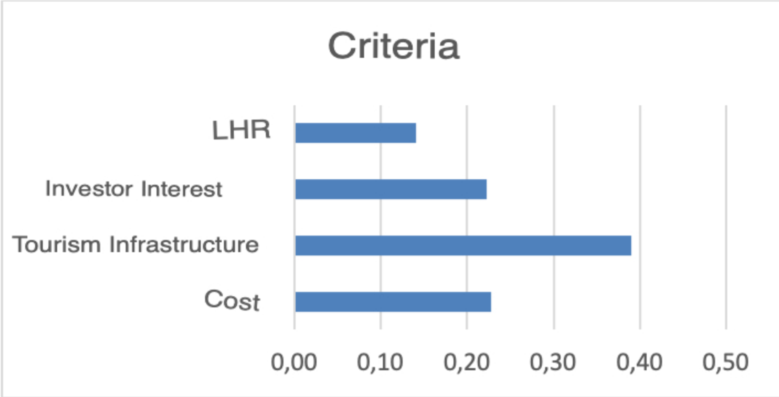

Figure 1. Results of Data Processing of Criteria Aspects

Tourism infrastructure is the key indicator that prioritizes new road development in the Mandalika area, with an average score of 0.3898. The most important criterion is Cost, which holds a value of 0.22725, followed by Investor Interest at 0.22275. Average daily traffic ranks fourth, with a score of 0.14059. To assess the suitability of the responses from respondents or experts, we conducted a rater agreement measurement using Kendall's Coefficient of Concordance (W; $0 < W \leq 1$). A W value 1 ($W = 1$) suggests that respondents' assessments or opinions agree perfectly. Conversely, a W value approaching 0 indicates significant response discrepancies (Ascarya, 2011). The agreement score for the criteria is 0.6360 (w=0.6360), reflecting a relatively high level of consistency among the respondents' answers. Experts concur that the primary indicators influencing additional road infrastructure development prioritization are Cost, Investor Interest, Tourism Infrastructure, and Average Daily Traffic.

Tourism Infrastructure Sub-Criteria Cluster

This Tourism Infrastructure criterion includes several sub-criteria, specifically Accommodation Infrastructure and Commercial Infrastructure. The data processing results for these sub-criteria are illustrated in Figure 2. Below are the results of data processing for the corresponding sub-criteria within the tourism infrastructure criteria:

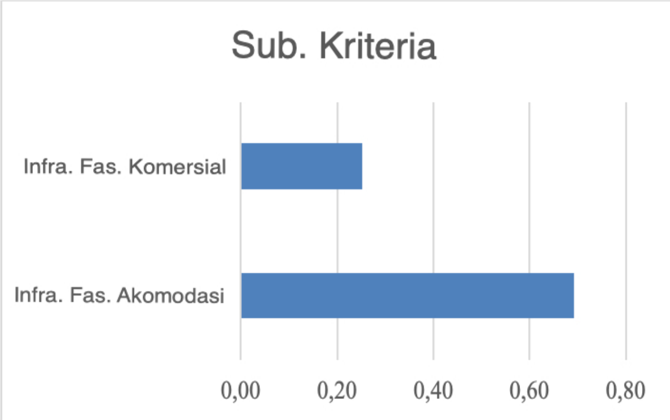

Figure 2. Data Processing Results for Sub-criteria on Tourism Infrastructure

According to the diagram above, the Accommodation Infrastructure sub-criteria holds a weight of 0.69197, while the Commercial Infrastructure sub-criteria weights 0.25235. The rater agreement value stands at 0.64 (w = 0.64), suggesting a high level of suitability in the respondents' answers. Experts concur that the Commercial Infrastructure exerts a more significant influence than the Accommodation Infrastructure sub-criteria when selecting Priority Regional Roads for development.

Alternative Priority Calculation Using TOPSIS Method

Calculation of Positive and Negative Ideal Solutions

Once the weights for each criterion and sub-criterion are established, the next step involves ranking each alternative using the TOPSIS method. Microsoft Excel facilitates this data processing. Initially, a TOPSIS questionnaire is distributed to respondents or experts to assess the three alternatives under consideration. This assessment employs a scale of 1 to 5 (1 = Very Bad, 2 = Bad, 3 = Very Good, 4 = Good, 5 = Very Good). After completing the questionnaires, the average scores from all respondents are calculated to determine each supplier's value and performance level, which requires the creation of a decision matrix first. Table 1 below presents the decision matrix for prioritizing Regional Road Development.

Table 1. Decision matrix for selecting regional road priorities

Alternatives/Criteria	Cost	Investor	LHR	Ifr. Akom	Ifr. Kom
Ruas (B-B1-H1)	3,9	4,4	5	4	3
Ruas (B4-B3)	3,1	3	3	3	3,8
Ruas (B5-B2)	4,3	4	4,3	4,8	4
Ruas (P5 – I1)	2,8	5	5	4	5
Ruas (Q3-Q5)	3,1	3,1	3	3	3,1
Ruas (R2-R1)	4	3,4	4	3	4
Ruas (TTA5, TTA6&TTA8)	5	4,1	5	5	4,9

Source: Author, 2025

After calculating the decision matrix, the next step is to normalize the existing one. The overall decision matrix normalization results are shown in Table 2—normalization of the decision matrix for selecting the priority of the Regional Road.

Table 2. Normalization of the decision matrix for selecting the priority of the Regional Road

Alternative/Criteria	Coast	Investor	LHR	Ifr. Akom	Ifr. Kom
Section (B-B1-H1)	0,386612648	0,424689849	0,442824809	0,386622337	0,280901832
Section (B4-B3)	0,307307489	0,289561261	0,265694885	0,289966752	0,355808987
Section (B5-B2)	0,426265227	0,386081681	0,380829336	0,463946804	0,374535776
Section (P5 – I1)	0,277568055	0,482602102	0,442824809	0,386622337	0,468169719
Section (Q3-Q5)	0,307307489	0,299213303	0,265694885	0,289966752	0,290265226
Segment (R2-R1)	0,396525793	0,328169429	0,354259847	0,289966752	0,374535776
Section (TTA5, TTA6&TTA8)	0,495657241	0,395733723	0,442824809	0,483277921	0,458806325

Source: Author, 2025

Once the normalized matrix value is determined, the subsequent step involves calculating the weighted normalized matrix. This is done by multiplying the normalized matrix by the weight of each criterion and sub-criterion, resulting in the outcomes displayed in Table 4, six Weighted Normalized Matrix.

Table 3. Weighted Normalized Matrix

Alternative/ Criteria	Coast	Investor	LHR	Ifr. Akom	Ifr. Kom
Section (B-B1-H1)	0,087858118	0,094599012	0,062256913	0,267532989	0,07088623
Section (B4-B3)	0,06983594	0,064499326	0,037354148	0,200649741	0,089789225
Section (B5-B2)	0,096869207	0,085999102	0,053540945	0,321039586	0,094514973
Section (P5 – I1)	0,063077623	0,107498877	0,062256913	0,267532989	0,118143717
Section (Q3-Q5)	0,06983594	0,066649304	0,037354148	0,200649741	0,073249104
Segment (R2-R1)	0,09011089	0,073099237	0,049805531	0,200649741	0,094514973
Section (TTA5, TTA6&TTA8)	0,112638613	0,088149079	0,062256913	0,334416236	0,115780842

Source: Author, 2025

Once the weighted normalized matrix is obtained, the next step involves calculating the positive and negative ideal solutions. The positive ideal solution represents the highest value in the weighted normalized decision matrix, while the negative ideal solution denotes the lowest value. The calculations for these solutions are presented in Table 4, titled Positive Ideal Solution and Negative Ideal Solution.

Table 4. Positive Ideal Solution and Negative Ideal Solution

Criteria	Max (Positive Ideal)	Min (Negative Ideal)
Cost	0,06307762	0,11263861
Investor Interest	0,10749888	0,06449933
LHR	0,06225691	0,03735415
Tourism Infrastructure		
Accommodation Infrastructure	0,33441624	0,20064974

Commercial Infrastructure 0.11814372 0.07088623

Source: Author, 2025

Alternative Priority Order

The next step involves calculating the separation. Two distances are measured: the distance of the i-th alternative from the positive ideal solution (D+) and the distance from the negative ideal solution (D-). The results of these separation calculations are presented in Table 4.7, which shows the distance to both the positive and negative ideal solutions. Finally, the relative proximity to the positive ideal solution must be calculated to establish a ranking for each tourism area. The results of this calculation are detailed in Table 5, which displays the calculation of relative proximity.

Table 5. Distance to the positive ideal solution and distance to the negative ideal solution

Alternative	D+	D-
Section (B-B1-H1)	0,03165354	0,030780002
Section (B4-B3)	0,027924878	0,043159996
Section (B5-B2)	0,035067045	0,031545691
Section (P5 – I1)	0,004473369	0,058736738
Section (Q3-Q5)	0,028956153	0,042812878
Segment (R2-R1)	0,046823432	0,023315035
Section (TTA5, TTA6&TTA8)	0,049940988	0,02108846

Source: Author, 2025

Table 6. Results of relative proximity calculations

Alternative	Preference (V)	Rangking
Section (B-B1-H1)	0,493004259	4
Section (B4-B3)	0,607161462	2
Section (B5-B2)	0,473568465	5
Section (P5 – I1)	0,929230166	1
Section (Q3-Q5)	0,596536938	3
Segment (R2-R1)	0,332414385	6
Section (TTA5, TTA6&TTA8)	0,296897421	7

Source: Author, 2025

CONCLUSION

Experts' literature review and validation identified four criteria that influence the priorities for tourism area development and their corresponding weights: Tourism Infrastructure (0.38948), Costs (0.22725), Investor Interest (0.222748), and Average Daily Traffic (0.14059). Under the Tourism Infrastructure criterion, there are sub-criteria, specifically Accommodation Facility Infrastructure (0.69197) and Accommodation Facility Infrastructure (0.25235).

The TOPSIS method prioritizes road infrastructure development within the Mandalika Special Economic Zone based on these criteria and sub-criteria. The highest priority (rank 1) is assigned to the Circuit's Southern Ring Road (P5 - I1), valued at 0.929230166. The second priority (rank 2) pertains to the Access Road KGH 1 - 2 - 3 (B4-B3), valued at 0.607161462, and the third priority (rank 3) involves the Access Golf Resort (Q3-Q5/Golf Resort), valued at 0.5965369. Subsequent priorities include the Access from Fisherman Village to Koeta Beach Park (B-B1-H1) at rank 4, valued at 0.493004259, and the Access Road to Jetty (B5-B2) at rank 5.

The findings have significant policy implications for the Indonesian government regarding the Mandalika Special Economic Zone. Prioritizing the Circuit's Southern Ring Road indicates that investments here will likely yield high tourism and economic growth returns. Policymakers should focus resources on this road's development and encourage investment in tourism infrastructure, including accommodation and commercial facilities, to maximize infrastructure benefits. The government should create incentives for private sector investments, such as tax breaks or streamlined permitting, and conduct thorough cost-benefit analyses for each road segment, considering impacts on tourism and traffic. Lastly, a transparent decision-making process should involve all stakeholders, including local communities, in planning and developing infrastructure projects in the Mandalika SEZ.

REFERENCES

Ayu, C., Wuryantoro, W., Wahoni, N., Ibrahim, I., & Nurminda Dewi Mandalika, E. (2023). Analisis Daya Dukung Lahan Pertanian di Desa Penyangga Kawasan Ekonomi Khusus Mandalika - Kabupaten Lombok Tengah. *JURNAL SOSIAL EKONOMI DAN HUMANIORA*, *9*(1). https://doi.org/10.29303/jseh.v9i1.314

Azizurrohman, M., Martayadi, U., Najmudin, M., Fathurrahim, F., & Bratayasa, I. W. (2023). Tourism Industry and Community Readiness: A Case Study of the Mandalika Special Economic Zone (KEK). *Journal of Economics Research and Social Sciences*, *7*(1). https://doi.org/10.18196/jerss.v7i1.13652

Başkent, E. Z., & Balci, H. (2024). A priory allocation of ecosystem services to forest stands in a forest management context considering scientific suitability, stakeholder engagement and sustainability concept with multi-criteria decision analysis (MCDA) technique: A case study in Turkey. *Journal of Environmental Management*, *369*. https://doi.org/10.1016/j.jenvman.2024.122230

Caraka, R. E., Wardhana, I. W., Kim, Y., Sakti, A. D., Gio, P. U., Noh, M., & Pardamean, B. (2023). Connectivity, sport events, and tourism development of Mandalika's special economic zone: A perspective from big data cognitive analytics. *Cogent Business and Management*, *10*(1). https://doi.org/10.1080/23311975.2023.2183565

Elghazouly, H. G., Elnaggar, A. M., Ayaad, S. M., & Nassar, E. T. (2024). Framework for integrating multi-criteria decision analysis and geographic information system (MCDA-GIS) for improving slums interventions policies in Cairo, Egypt. *Alexandria Engineering Journal*, *86*, 277–288. https://doi.org/10.1016/j.aej.2023.11.059

Ferla, G., Mura, B., Falasco, S., Caputo, P., & Matarazzo, A. (2024). Multi-Criteria Decision Analysis (MCDA) for sustainability assessment in food sector. A systematic literature review on methods, indicators and tools. *Science of the Total Environment*, *946*. https://doi.org/10.1016/j.scitotenv.2024.174235

Gao, X., Xianzang, Y., You, X., Dang, Y., Chen, G., & Wang, X. (2018). Reachability for airline networks: fast algorithm for shortest path problem with time windows. *Theoretical Computer Science*, *749*. https://doi.org/10.1016/j.tcs.2018.01.016

Kenger, Z. D., Kenger, Ö. N., & Özceylan, E. (2023). Analytic hierarchy process for urban transportation: a bibliometric and social network analysis. *Central European Journal of Operations Research*. https://doi.org/10.1007/s10100-023-00869-x

Kumar, P. B., & Prasad, T. K. (2021). Application of Multi-Criteria Decision Analysis (MCDA) to apiculture potential assessment: A case study of Thiruvananthapuram Corporation, Kerala, India. *Transactions of the Institute of Indian Geographers*, *43*(2). https://doi.org/10.53989/bu.ge.v7i2.7

Nursyam, A. S., Budastra, K., & Sukardi, L. (2023). Analysis of Tourism Carrying Capacity as a Basis for Development of the Tanjung Tampa Nature Tourism Park, Central Lombok Regency. *Prisma Sains : Jurnal Pengkajian Ilmu Dan Pembelajaran Matematika Dan IPA IKIP Mataram*, *11*(4). https://doi.org/10.33394/j-ps.v11i4.10307

Pratama, A. A., Alpiansah, R., Yuliana, I., & Hermanto, A. (2023). Potret Pengelolaan Berkelanjutan Taman Wisata Alam Gunung Tunak Kabupaten Lombok Tengah. *Target: Jurnal Manajemen Dan Bisnis*, *5*(1). https://doi.org/10.30812/target.v5i1.2881

Putra, A. D., & Wahidah, B. Y. K. (2023). PERAN BIPA SEBAGAI MEDIA PROMOSI DAERAH (KEK MANDALIKA). *NUSRA: Jurnal Penelitian Dan Ilmu Pendidikan*, *4*(4). https://doi.org/10.55681/nusra.v4i4.1850

Roy, M., Sen, P., & Pal, P. (2020). An integrated green management model to improve environmental performance of textile industry towards sustainability. *Journal of Cleaner Production*, *271*. https://doi.org/10.1016/j.jclepro.2020.122656

Sayuti, R. H., Taqiuddin, M., Hayati, Evendi, A., Hidayati, S. A., Asri, K. H., & Sopian, E. (2023). Socio-economic mapping for community empowerment in Mandalika special economic zone, Lombok, Indonesia. *IOP Conference Series: Earth and Environmental Science*, *1253*(1). https://doi.org/10.1088/1755-1315/1253/1/012067

Susanti, B. E., Ngudiyono, N., & Muhajirah, M. (2022). Analysis of Development Planning for Infrastructure with Land Consolidation Concept in the Mandalika Special Economic Zone (SEZ). *Civilla : Jurnal Teknik Sipil Universitas Islam Lamongan*, *7*(1). https://doi.org/10.30736/cvl.v7i1.774

Utama, D. M., Maharani, B., & Amallynda, I. (2021). Integration Dematel and ANP for The Supplier Selection in The Textile Industry: A Case Study. *Jurnal Ilmiah Teknik Industri*, *20*(1). https://doi.org/10.23917/jiti.v20i1.13806

Yuli, S. B. C., Fathurrahim, Adha, M. A., Azizurrohman, M., & Purna, F. P. (2023). Increasing Community Participation Through Tourism Social Responsibility: Tourism Special Economic Zone in Mandalika. *Quality - Access to Success*, *24*(196). https://doi.org/10.47750/QAS/24.196.11

Zuhdiyah Matienatul Iemaaniah, Nur Asri Shakila, Mukminah, & Abdul Majid Azzuandi. (2023). Identifikasi Penggunaan Lahan Menggunakan Citra Resolusi Tinggi di Titik Nol Kawasan Ekonomi Khusus Mandalika. *JPIG (Jurnal Pendidikan Dan Ilmu Geografi)*, *8*(2). https://doi.org/10.21067/jpig.v8i2.8984

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