Journal of Advances in Management, Engineering and Science (JAMES), 2026; 1(2): 30-40

Research Article

Identification of Community Behavior and Sustainable Rural Tourism Based on DWT-ANN Hybrid Model

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Received: 19th November 2025; Accepted: 12nd March 2026; Published: 30th April 2026

https://doi.org/10.65470/james.v1i02.21

Abstract - *Expanding the tourism infrastructure to rural areas has a positive effect on the local economies. Investment in new attractions and improved infrastructure is necessary to increase rural tourism. A country's economy can benefit from a rise in rural tourism. Tourists flock to these areas as new ideas and places are discovered there. Economic development uses a wide range of ideas and tools to boost growth throughout a country. With greenhouses and other modern takes on rural living, the countryside is once again becoming a tourist destination. Rural tourism growth is facilitated via the application of models and techniques. Three methods preprocessing, feature extraction, and model training form the basis of the suggested strategy. In order to make them comparable to one another, they employed the Zero-unitarization method during preprocessing to replace their unique ranges of variability with a single common range. PCA was utilized for feature extraction. Let's move on to training the models with DWT-ANN. The proposed method is clearly superior than the two most common alternatives, DWT and ANN. There was a 97.23 percent success rate with the recommended method.*

Keywords - *Discrete Wavelet Transform (DWT). Sustainable Rural Tourism. Artificial neural networks (ANN*

INTRODUCTION

Changes in the community's social life are another fallout of tourism expansion. Too much tourism can strain a city's social fabric, according to the literature. A person's standard of living can be significantly impacted by shifts in community identity and local solidarity. Some of the earliest insight into how rapid tourism development might eradicate a community's sense of its own identity and alter its traditional culture was supplied. The researchers observed that the progressive introduction of tourist culture into a rural destination affected social relationships and increased the perception of community cohesion among some people. Because they care so much about where they live, locals often strive to divert tourism development away from neighborhoods that could be negatively impacted. Concerns have been made that tourism attracts visitors rather than inhabitants, who may then have undue cultural, economic, or political influence over the local community. Authors argue that when local decision-making processes are unable to keep up with external pressures, the quality of life for inhabitants suffers. "How can sustainable tourism be understood

and addressed without appreciating the role of small enterprises?" This very important question raises two very important concerns. It has been shown, for example that owner-managers of small-scale tourism firms promote sustainable practices that are congruent with their values and lifestyle reasons. The literature on tourism entrepreneurship should be more extensive. Although there has been a proliferation of studies on tourism entrepreneurship, the vast majority of them are inductive and lack a solid theoretical basis. Theoretical progress beyond the canon of conventional entrepreneurship studies must be incorporated if the field is to advance. Several frameworks have been developed and applied to niche tourism businesses; these include the entrepreneurial orientation framework, the effectuation and causation framework, the opportunity-based perspective framework, and the risk perception framework. This study adds to the growing body of literature on tourism entrepreneurship by proposing a theoretical framework based on the concepts of entrepreneurial bricolage and spatial bricolage, respectively. Tourism in China's rural areas has exploded in recent years as the country recognizes its importance as a means to aid in the region's economic revival and aid in the rebuilding of the area's infrastructure. Growth in rural tourism has been linked to issues like water pollution, overcrowding, plant life loss, and trash accumulation. Growth in rural tourism, however, is dependent on protecting the natural ecology and its resources. The general public's lack of awareness and concern for environmental conservation has a negative impact on the attractiveness of tourist destinations. Improving and protecting the natural environment and ecosystem is helpful in preserving the competitiveness of rural tourism destinations and ensuring sustainable growth. To make this possible, participation from both locals and tourists will be required. Tourist and eco-friendly actions are rewarded. Tourists and eco-friendly activities. A rural destination's ecology is more vulnerable to the effects of human behavior, therefore residents play a critical role in its preservation. The natural system of any destination can be severely damaged by the environmentally unfriendly consumption patterns of tourists, who play a pivotal role in rural tourism. If the area's population density, land use (the preponderance of agriculture and forestry), and "traditional" social structures, community identity, and legacy all conform to the OECD's definition of "rurality", then it's likely to be a popular tourism destination for those seeking a more authentic rural experience. The author argues that rural tourism should be functionally rural (based on the rural environment's attributes of natural resources, traditional practices, and open space), rural (small in scale and traditional in character), organic in its growth, and governed by local people. This idea implicitly promotes sustainable tourism development by highlighting the significance of preserving and appreciating local cultural and biological resources while also benefiting host communities economically. Academics, politicians, and investors in Europe are paying more attention to rural tourism in part because the EU has invested heavily in economic activities that provide an alternative to declining agriculture. Multiple empirical research show that city inhabitants are interested in and even eager to travel to rural areas for a variety of reasons. The great majority of Indonesia is rural territory that can be developed into picturesque tourist spots; the country is primarily a farming nation. One potential site for a rural tourist hub is Panjalu in Indonesia's Ciamis Regency, which is part of West Java Province. The people of Pandalu, Indonesia, will have to wait for rural tourism to

improve its sustainable development before they can enjoy its benefits. Evidence suggests that combining ANP with MDS can improve a company's strategies and sustainability status. Using MDS, one may assess the sustainability of rural tourist development. A sustainability status and leverage analysis are both provided by the MDS. There are various methods to MCDM, and ANP is one of them. To choose the best course of action according to a set of specified criteria, one popular strategy analysis method is multiple-criteria decision-making (MCDM).

RELATED WORKS

With the advent of the service economy in the 1990s, companies have tried harder than ever to forge personal bonds with their clientele. The travel and hospitality business is no different [1]. Several researches [2] have demonstrated the ecotourism decision-making process. A lack of published research on the elements that influence the decisions of rural tourists is a problem. By using the TPB model to information on rural tourism, this study hopes to fill this informational void and better understand the factors at play during the decision-making process. The TPB model [3] has been widely used to evaluate decision making in a variety of fields, including tourism. This time, though, the shift in perspective may be directly attributed to developments in ICT. The entire tourism business has been changed by social media [4]. People can broaden their social circles, gain insight into new topics, and discuss issues that affect their lives and the world at large by using social networking services (SNS) and the exchange of relevant information (SNS). The tourism industry relies heavily on the sharing of information and the advertising capabilities of social media. Multiple studies [5] have demonstrated that SNS have a large impact on tourist behavior. However, there is a dearth of literature regarding the impact of SNS on eco-friendly vacationing. This study's overarching goal is to learn how tourists' usage of social media influences their actions, particularly with regards to ecotourism. Researchers have labelled the current status of China's tourism industry as a spatial heterogeneity scenario. This is a condition in which larger urban areas attract more tourists than smaller ones. The overpopulation and abuse of urban services and facilities are two negative outcomes of this situation. It was speculated that rural tourism could help remedy the problems that accompanied urban tourist [6]. It's a getaway that combines the best of farming with sightseeing and relaxation. The use of a combination of Grazing land and native livestock. Naturally, the target market for these souvenirs is city inhabitants[7].The concept of a customer a person's life experience might cover a lot of ground. Paraphraseity is a-dimensional in dimensionality is a multi-ity. Multi-ity is a multi-reassessment, wherein a wide range of first-hand evidence is compiled to form a more accurate overall picture [8]. That is to say, a destination's quality in the eyes of tourists may be simplified to a simple good/bad assessment. Attributes in the same way as the individual still perceives them, but in a different order overall quality perception reveals the qualities that make up a destination. The same tactic allowed us to use to a wide range of tourism research contexts [9]. Previous research reveals that being exposed to the Immersing yourself in a new culture can be accomplished in many ways, including but not limited to: cooking, attending cultural events, adopting a local way of life, and participating in outdoor activities best picks for rural tourists [10]. Improvement and learning are also mentioned as highlights of trips to rural areas. To

improve connections between tourists and host communities is central to the mission of community-based tourism (CBT) [11]. Even if the term "community-based tourism" wasn't coined until much later, the idea behind it has been around for decades. This approach to tourism is based on the very first thoughts about going somewhere new. Travel is the temporary relocation of individuals from one location to another for the objectives of discovery, cultural exchange, and experience of other ways of life [12]. This notion has been hinted at [13] by the choices and acts of previous travelers. It used to be that tourists dealt with little businesses and inexpensive hotels run by environmentally conscious individuals rather than the giant, well-known hotel conglomerates of today. When sustainable development practices are incorporated into the tourism business, a new type of tourism known as "community-based tourism" (CBT) is born [14].Community-based sustainability initiatives are becoming important in the tourism industry. Paraphrase or CBT in short. Paraphrase or CBT in short. Sustainable tourism aims to find a middle ground between the tourism industry's bottom line, the needs of host communities, and the preservation of the natural environment. Furthermore, there is data that supports Visits to natural regions should be tranquil, calming experiences for tourists inspire tourists to take part in the area's natural activities while leaving as little of an impression as possible. [15]Many city governments have trouble tackling sustainability challenges due to a lack of knowledge about how to implement sustainability practices. Tourism in rural areas has increased as city dwellers look for new locations to escape [16]. Sustainable tourism may play a crucial role in helping rural communities overcome the various challenges they face. Sustainable rural tourism has been shown to revitalize rural communities by improving the quality of life for locals while also benefiting the culture, economy, and environment[17]. Increasing employment and salaries in rural areas is one economic benefit of tourism. Economic growth, environmental protection, cultural preservation, and the preservation of traditional ways of life are all aspects of a social perspective that may be found in a social perspective [18].As the economy improves, so does the general public's awareness of the importance of maintaining a healthy balance between growth and sustainability [19]. Increasing human consumption places a strain on the planet's limited resources and has deleterious ecological consequences. Therefore, we need to address issues including water and air pollution, climate change, biodiversity loss, and depletion of natural resources. Sustainability as it pertains to business expansion has been an area of intense theoretical and empirical study in the current environment. The tourism business cannot succeed unless the issue of sustainability is given serious attention. It is crucial to look after tourist destinations, conserve their natural resources, and keep their economies stable [20]. Thus, new academic fields and the gradual expansion of tourist hotspots emerged around the topics of protection of natural resources and sustainable tourism. Long-term performance and expansion in the tourism business depend on the sector maintaining a strong public image of sustainability [21]. When consumers perceive a company to be environmentally responsible, they are more likely to be loyal to that company and its brand. A significant portion of rural tourism's revenue comes from the selling of products and services made possible by natural capital. Consequently, managing tourism based on natural capital necessitates a sustainable tourism industry. Sustainable tourism

refers to the development and management of tourist destinations in a manner that does not jeopardize social, economic, or environmental norms, while also preserving cultural and natural heritage places [22]. Sustainable tourism development is only possible with well-thought-out plans for the distant future. Economic, social, resource, and environmental harmony, equitable development opportunities for all generations of visitors, and the preservation of natural and cultural heritage are the pillars of what is referred to as "sustainable tourism" [23]. One result of sustainable tourist development is the creation of jobs. Another is the preservation of local culture and the promotion of local products [24]. The achievement of sustainable tourist growth depends on a well-thought-out policy framework that is both comprehensive and appropriate, supported by all relevant parties, and that ensures a harmonious coexistence of social life and the environment. For tourist development to be effective, extensive research into systems is required [25]. Careful consideration of these systems' performance, financial constraints, and economic consequences is required, in addition to their effects on the local environment, cultural legacy, social acceptability, and blessings. Also, for the tourism industry to be around for the long haul, everyone involved in planning regional attractions needs to pull together and adopt a sustainable growth plan.

METHODOLOGY

The importance of responsible tourism to rural communities cannot be overstated. This proposed looks at two rural tourist zones, each with its own distinct cultural and environmental history, to determine how much of a chance ecotourism has to thrive there. This approach to central premise is that rural areas may greatly strengthen their tourism asset portfolio by emphasizing the "4As" (accessibility, attractions, ancillary services, and amenities).

A. Preprocessing

The values of the collected variables were standardized using the unitarization method, which replaced their individual ranges of variability with a single common range in order to facilitate comparisons between them. Zero unitarization is a method for normalizing diagnostic characteristics that makes use of the Quotient Transform formula. Here, that benchmark is the range of the standardized variable. Standardization is a method for analyzing complicated phenomena that requires transforming diagnostic variables into partial criteria. The diagnostic results are expressed using a wide variety of units of measurement and ranges of numbers [26]. Normative procedures are used to convert absolute values to relative ones, taking into account the need to eliminate measurements and standardize the numerical ranges of diagnostic variables. Normalization processes, which can be regarded of as a type of ratio transformation, lead to this modification of the diagnostic variable. There are no units of measurement or possible values for this variable. Complex events can be described in terms of a number of different variables; standardized features makes it simpler to compare and contrast these phenomena.

The unitarization approach necessitated two distinct formulas, one for the encouraging variables (D), and one for the discouraging variables (S), due to the differences between the S and D variables used in the analysis.

$$P_{rs} = \frac{q_{rs} - min_r\{q_{rs}\}}{max_r\{q_{rs}\} - min_r\{q_{rs}\}} \quad (1)$$

$$P_{rs} = \frac{max_r\{q_{rs}\} - q_{rs}}{max_r\{q_{rs}\} - min_r\{q_{rs}\}} \quad (2)$$

$min_r\{q_{rs}\}$ is the minimum value of the inconsistent diagnostic variable, and $max_r\{q_{rs}\}$is the maximum value of the inconsistent diagnostic variable. P_{rs} is the standardized diagnostic variable, and q_{rs} is the inconsistent diagnostic variable. If the stimulants J are on the rise, the number will rise, and if they are on the decline, the number will fall. If the value of negative incentives B is high, then the phenomenon's future is less likely to be favorable, while the opposite is true for positive incentives. Each object was given a single aggregated note, or synthetic quality index (SQI), calculated by adding the standard variables P_{rs}.

B. Feature Extraction

1. PCA

Principal components analysis (PCA) is a sort of factorial and multivariate analysis that aims to simplify the study of a large dataset by integrating a set of independent variables into a smaller set of dummy variables. Here, the combination that explains the most variation (the first principal component) is followed by those that explain somewhat less (the second principal component), and so on. Since the components are classified according to the amount of original variation they offer, the dimensionality of the data set may be synthesized with relative ease using this method. Then, various representative results are obtained; initially, they are closer to 1 the more communities there are that show the explanatory factor for each variable. This is true of all the critical factors included in the investigation. In addition, PCA may be used to extract latent magnitudes of a set of variables and reduce the vector space generated by a large set of original variables to a small number of components that are independent of each other and ranked by explanatory power [27]. In order to account for most of the variance, it is necessary to reduce z variables to a smaller set of components. Therefore, they can learn the underlying factors by establishing a relationship between the variables and then computing the sum of those relationships with weights. Here, r is equivalent to 3:

$$E_r = Y_{r1\times1} + Y_{r2}Q_2 + \cdots + Y_{rz}Q_z \quad (3)$$

This method is particularly useful for studies of complex structures in the social and human sciences, as it may reduce a large amount of data without compromising accuracy. Several writers establish that data reduction methods are used to know which variables are crucial to carry out the research, as the results of a preliminary analysis disclose which factors influence the phenomena and supply limited information. Principal components analysis (PCA) was used as a statistical tool to identify the most significant economic, demographic, tourist, and patrimonial variables and the factors best explaining them across the many tourist destinations in the northern province of Extremadura. There were more than 40 independent factors considered here. As a result, PCA requires objective and neutral variables to eliminate collinearities or repetitions, hence variables with a coefficient of less than 0.4 were left out. They conclude that the last group of PCA variables provides the highest levels of significance and explanation. Fifteen different factors were used in this study.

2. Pearson's Bivariate Correlation

The Pearson product-moment correlation coefficient, also known as Pearson's bivariate correlation, was used to compute the bivariate correlations and, consequently, the degree of connection. In bivariate correlations, linear association is the building block. This implies that as one variable increases, the other variable's value may rise or fall proportionally. Also, make note of the degree to which any two of the variables you studied are quantitatively related to each other and how reliant they are on each other. By gauging the degree of correlation between a number of linearly related variables, the index also discovers values in the range of -1 to +1. To calculate it, use this formula: (4):

$$i_{qw} = \frac{\sum p_q p_w}{H} \quad (4)$$

The coefficient produces a numerical number that indicates the strength of the relationship between the variables; these values can be anywhere from -1 to 1, with the possible outcomes being -1 or +1. The sign of the coefficient reflects the direction of the relationship when its value is positive (+1), but when its value is negative (−1), it is either directly negative or completely negative. Accordingly, a drop in W is associated with an increase in Q, and a rise in Q is associated with a decrease in W. An example of a fully positive correlation would be this. Since the absolute value shows the intensity of the dependence link, the highest values indicate a stronger relationship between the two variables. Nevertheless, when it's zero, it denotes independence; otherwise, it indicates that Q and W are unrelated.

C. Model Training

1. DWT

The "discrete wavelet transform" (DWT) is a linear transformation where the input data vector has a length that is an integer power of two and the output data vector has a different set of integers but the same length. Data is broken down into several frequency bands with this fantastic tool, allowing individual modules to be examined one by one with granularity proportional to their size. For the purposes of this study, DWT was used to produce the data sets required for fault frequency categorization. Synchronous generators' current signals, both at startup and during fault transients, are split into high- and low-frequency components. In low-scaled decomposition, the high-frequency component of the signal is represented by the detailed coefficients, while the low-frequency component is represented by the approximation coefficients. The complexity of the signals brought on by their present magnitudes can be reduced by normalizing them. The current in the stator windings is scaled to its theoretical maximum value at steady state in a synchronous generator. The success of normalizing in comparing faults of different assessed values in synchronous generators is the defining characteristic of normalizations plus factor.

$$Q_{A_z}^{dwt}\left[Q_{A_z}(l)\right] = \int Q_{A_z}(l)\mu(g,h)dt \quad (5)$$

In (5) above, discrete wavelet transforms are used to describe the current signals from the stator windings of the synchronous generator. In this case, $Q_{az}(l)$ represents the normalized current signal throughout all three phases, and $\mu(g,h)$is the stated fundamental analysis function. For the definition of the mother wavelet, see here.

$$\mu(g,h) = \left(\frac{1}{\sqrt{c_0^g}}\mu\left(\frac{l - hc_0^g d_0}{c_0^g}\right)\right) \quad (6)$$

Where g and h are positive integers and the scaling (dilation) and translation (shift) parameters,$c = c_0^g$ and $d = hc_0^g d_0$, respectively, are real numbers. After sampling, the DWT algorithm sends the normalized stator winding current signals via low-pass and high-pass filters, yielding two signals: the approximation coefficients, $Q_z^{c,DWT}$, and the detail coefficients,$Q_z^{b,DWT}$. In both the typical and incorrect circumstances, DWT is used to collect data at low and high frequencies, such as those created by signals. When a fault is detected by the synchronous generator, the current wavelet coefficients are sent to the fault classification algorithm. The following equations characterize the output of the DWT method, which contains both the low- and high-frequency current datasets.

$$BJ_{dwt} = \begin{bmatrix} TE^1 \\ TE^2 \\ \vdots \\ TE^h \end{bmatrix}^{a,u} \begin{bmatrix} NE^1 \\ NE^2 \\ \vdots \\ NE^h \end{bmatrix}^{a,u} \quad (7)$$

Where $TE_h^{a,u}$ and $NE_h^{a,u}$ represent the low and high frequency current signals, respectively. These datasets are then used to train the ANN. In the sections that follow, they will examine the inner workings of the ANN in greater detail.

2. ANN

The use of ANNs has proven to be an effective strategy for developing mathematical models that can be taught. Its ability to draw

conclusions from murky or otherwise challenging data is a major selling point. Therefore, this can be used to help identify patterns and uncover trends that would be difficult to observe using only conventional methods. The BP method is predicated on the gradient descent algorithm. The concept is to use an error function as a starting point, and then use hill climbing or descent to find the weights. This works perfectly for what we need it for [28]. Research has revealed that back propagation can get stuck at a local optimum and/or take a very long time to converge. Therefore, researchers sought out new approaches to overcome the ANN training problem. Another strategy for optimizing the weights of ANNs is the use of genetic algorithms (GA). GA uses hypothetical living organisms to keep track of the ANN weights as candidate solutions in their DNA. At the start of each generation, only the organisms with the best chromosomes are allowed to reproduce. The end result can be influenced by adjusting the crossover and mutation frequencies. This continues for a set number of generations, or until the problem is solved as efficiently as possible. Because of its parallel search technique and global optimization capabilities, GA outperforms BP in terms of both the prediction accuracy and pace of convergence of the ANN. However, processing needs increase exponentially due to the complexity of genetic operators like crossover and mutation. Even though GA's convergence rate is higher than BP's, it is still somewhat slow and can stall when the solution approaches the ideal. In this research, GSA is used to teach an ANN how to detect and classify issues with synchronous generators. Here, they verify the reliability of the information by contrasting it with standard norms and outliers. The ANN is fed by the current flowing through the stator windings. The output vector is the end result of building and training an artificial neural network. Once trained, the ANN uses its hidden layers to establish a link between all inputs.

The standard architecture of an ANN consists of three layers: the Hidden Layer, the Input Layer, and the Output Layer.

RESULT AND DISCUSSION

As the urban economy grows rapidly, more and more people are crammed into smaller and smaller places, reducing the amount of green space and recreational areas available to them. As the city expands industrially, pollution rises and more people look to escape to the country, where air quality is better.

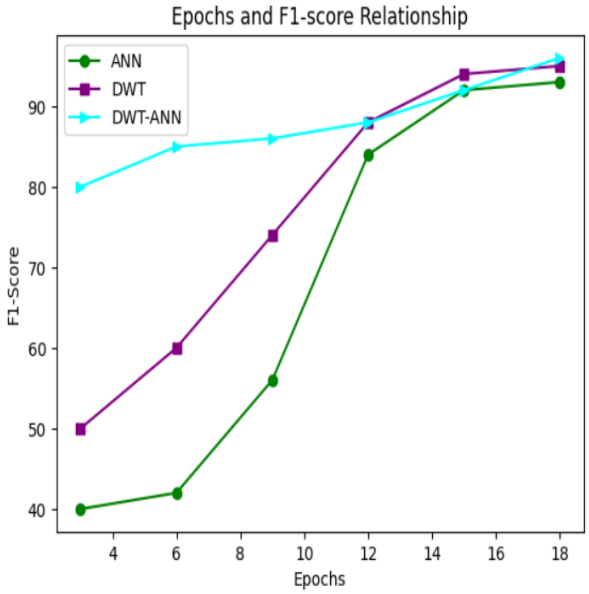

Fig 1 F1-Score and Epochs

The first twelve Epoch and F1 rounds are compared and contrasted across all three models in this proposed approach shown in figure 1. The F1 score of the ANN is shown in Figure 1 to be increasing gradually from a lower starting point, while the F1 score of the DWT can be maintained at a higher level and needs less iteration to reach the optimal F1 score. Furthermore, DWT-ANN has the highest F1 score of all the models we tested.

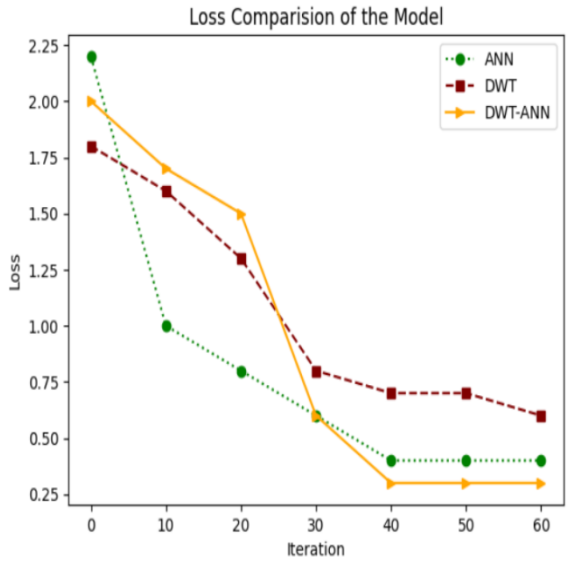

Fig 2 Loss Comparison of DWT-ANN

Figure 2 depicts the loss function's fluctuation graph. They found that the loss value for the traditional ANN model was lower than the stability values for the loss function iterations in the DWT and DWT-ANN models, but the DWT-ANN model was quicker. There was a drastic drop in both, and convergence was achieved.

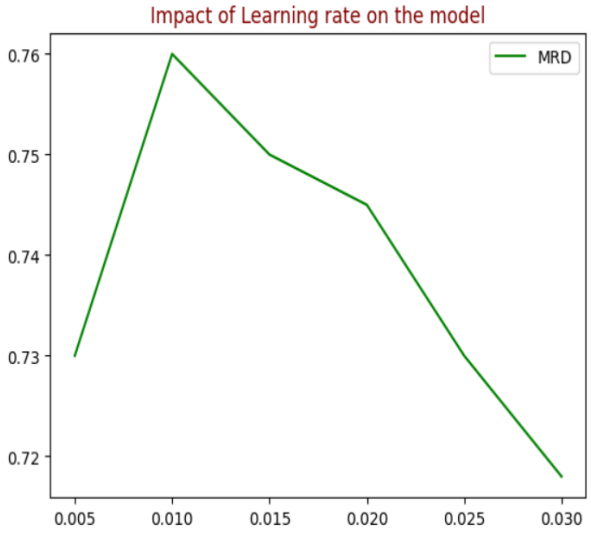

Fig 3 The Impact of Learning rate on the Model

Figure 3 depicts the effect of different learning rates on DWT-ANN's performance on the MRD dataset. If the initial value of the learning rate setting is too little, the gradient descent method may hit a local minimum in the number of iterations.

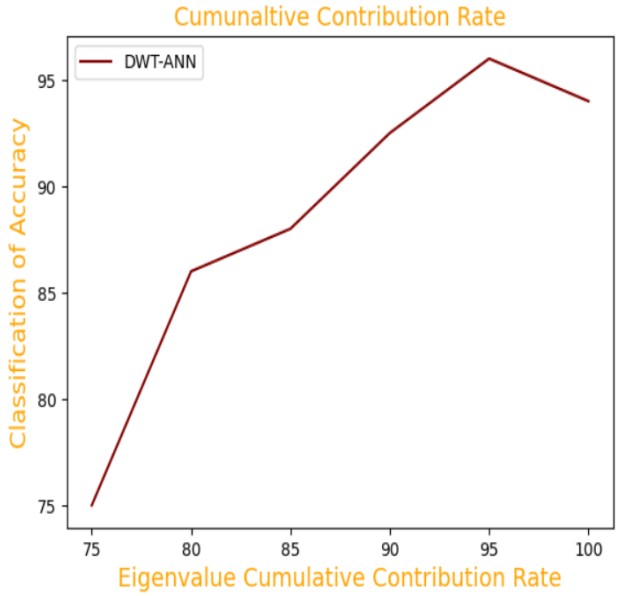

Fig 4 Cumulative Contribution rate of the Model

To examine the effect of this parameter, this research compares the classification accuracy of the DWT-ANN model under an MRD dataset for different cumulative contribution rates of main component eigenvalues. Figure 4 shows how the rate at which eigenvalues contribute cumulatively relates to categorization accuracy.

CONCLUSION

Spending by tourists has become an increasingly important barometer of the tourism sector's health, making this a fascinating area for investigation. The expansion of a country's economy can be sped up with the help of the profits made by tourism, which can be raised with some certainty. In order to predict future revenues, it is important to examine the link between tourism spending and area growth. While co-integration analysis is commonly used to describe the causal relationship between tourism income and local economic development, this method falls short of providing a precise explanation of the relationship. We used the Zero-unitarization technique in preprocessing to normalize their ranges of variability to one another for easier comparison. PCA was utilized for feature extraction. The next step is to begin DWT-ANN model training. Common alternatives to the proposed approach are reviewed and contrasted with, including the DWT and the ANN. The proposed approach outperforms the two

referenced methods by a small margin (around 97.23 percent).

Acknowledgement

The author would like to appreciate the effort of the editors and reviewers.

Author Contributions

All authors are equally contributed.

Conflict of Interests

The authors declare that they have no conflicts of interest.

Ethics Approval

There are no human subjects in this article and informed consent is not applicable.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not- for-profit sectors.

References

[1] E. Pantano, C. V. Priporas, N. Stylos, and C. Dennis, "Facilitating tourists' decision making through open data analyses: A novel recommender system," Tour. Manag. Perspect., vol. 31, no. April, pp. 323–331, 2019, doi: 10.1016/j.tmp.2019.06.003.

[2] K. Smallman, C., & Moore, "PROCESS STUDIES OF TOURISTS'DECISION-MAKING," Ann. Tour. Res., vol. 37, no. 2, pp. 397–422, 2010.

[3] N. W. Kuo and Y. Y. Dai, "Applying the theory of planned behavior to predict low-carbon tourism behavior: A modifed model from Taiwan," Int. J. Technol. Hum. Interact., vol. 8, no. 4, pp. 45–62, 2012, doi: 10.4018/jthi.2012100103.

[4] S. Abd Hamid, M., & Mohd Isa, "The theory of planned behaviour on sustainable tourism," J. Biol. Environ. Sci., vol. 6, no. 5, pp. 84–88, 2015, doi: 10.1201/9780203494172.ch92.

[5] J. Pesonen, "Tourism marketing in facebook: Comparing rural tourism SME's and larger tourism companies in Finland," Inf. Commun. Technol. Tour. 2011, pp. 537–546, 2011.

[6] S. M. C. Loureiro and F. J. M. Gonzalez, "The importance of quality, satisfaction, trust, and image in relation to rural tourist loyalty," J. Travel Tour. Mark., vol. 25, no. 2, pp. 117–136, 2008, doi: 10.1080/10548400802402321.

[7] Y. Zhou, "Study on the Promotion of Rural Tourism in China's Ethnic Minority Areas," vol. 286, no. Seiem 2018, pp. 142–144, 2019, doi: 10.2991/seiem-18.2019.36.

[8] T. Fernandes and M. Cruz, "Dimensions and outcomes of experience quality in tourism: The case of Port wine cellars," J. Retail. Consum. Serv., vol. 31, pp. 371–379, 2016, doi: 10.1016/j.jretconser.2016.05.002.

[9] J. H. Kim, "The antecedents of memorable tourism experiences: The development of a scale to measure the destination attributes associated with memorable experiences," Tour. Manag., vol. 44, pp. 34–45, 2014, doi: 10.1016/j.tourman.2014.02.007.

[10] D. C. Funk and T. J. Bruun, "The role of socio-psychological and culture-education motives in marketing international sport tourism: A cross-cultural perspective," Tour. Manag., vol. 28, no. 3, pp. 806–819, 2007, doi: 10.1016/j.tourman.2006.05.011.

[11] M. Mayaka, W. G. Croy, and J. Wolfram Cox, "A dimensional approach to community-based tourism: Recognising and differentiating form and context," Ann. Tour. Res., vol. 74, no. November 2018, pp. 177–190, 2019, doi: 10.1016/j.annals.2018.12.002.

[12] A. Manaf, N. Purbasari, M. Damayanti, N. Aprilia, and W. Astuti, "Community-based rural tourism in inter-organizational collaboration: How does it work sustainably? Lessons learned from Nglanggeran Tourism Village, Gunungkidul Regency, Yogyakarta, Indonesia," Sustain., vol. 10, no. 7, 2018, doi: 10.3390/su10072142.

[13] Q. Jin, H. Hu, and P. Kavan, "Factors influencing perceived crowding of tourists and sustainable tourism destination management," Sustain., vol. 8, no. 10, pp. 1–17, 2016, doi: 10.3390/su8100976.

[14] P. D. Pramanik, R. Ingkadijaya, and M. Achmadi, "The Role of Social Capital in Community Based Tourism," J. Indones. Tour. Dev. Stud., vol. 7, no. 2, pp. 62–73, 2019, doi: 10.21776/ub.jitode.2019.07.02.02.

[15] I. Paunović and V. Jovanović, "Implementation of sustainable tourism in the German Alps: A case study," Sustain., vol. 9, no. 2, 2017, doi: 10.3390/su9020226.

[16] C. M. Schmidt, I. D. Cielo, K. R. Wenningkamp, and M. Tomio, "Collective Actions in Sustainable Rural Tourism: A Case Study of the Western Region of Paraná," Syst. Res. Behav. Sci., vol. 33, no. 2, pp. 249–258, 2016, doi: 10.1002/sres.2380.

[17] A. M. Campón-Cerro, J. M. Hernández-Mogollón, and H. Alves, "Sustainable improvement of competitiveness in rural tourism destinations: The quest for tourist loyalty in Spain," J. Destin. Mark. Manag., vol. 6, no. 3, pp. 252–266, 2017, doi: 10.1016/j.jdmm.2016.04.005.

[18] R. Mcareavey and J. Mcdonagh, "Sustainable Rural Tourism: Lessons for Rural Development," Sociol. Ruralis, vol. 51, no. 2, pp. 175–194, 2011, doi: 10.1111/j.1467-9523.2010.00529.x.

[19] A. Niñerola, M. V. Sánchez-Rebull, and A. B. Hernández-Lara, "Tourism research on sustainability: A bibliometric analysis," Sustain., vol. 11, no. 5, pp. 1–17, 2019, doi: 10.3390/su11051377.

[20] S. P. Cottrell, J. J. Vaske, and J. M. Roemer, "Resident satisfaction with sustainable tourism: The case of Frankenwald Nature Park, Germany," Tour. Manag. Perspect., vol. 8, pp. 42–48, 2013, doi: 10.1016/j.tmp.2013.05.005.

[21] C. L. Qiu, H., Fan, D. X., Lyu, J., Lin, P. M., & Jenkins, "Analyzing the Economic Sustainability of Tourism Development: Evidence from Hong Kong," J. Hosp. Tour. Res., vol. 43, no. 2, pp. 226–248, 2019.

[22] F. A. Lisi and F. Esposito, "An AI application to integrated tourism planning," Lect. Notes Comput. Sci. (including Subser. Lect. Notes Artif. Intell. Lect. Notes Bioinformatics), vol. 9336 LNCS, no. September, pp. 246–259, 2015, doi: 10.1007/978-3-319-24309-2_19.

[23] P. J. Holladay, "Destination resilience and sustainable tourism development," Tour. Rev. Int., vol. 22, no. 3, pp. 251–261, 2018, doi: 10.3727/154427218X15369305779029.

[24] M. Ma and R. Hassink, "An evolutionary perspective on tourism area development," Ann. Tour. Res., vol. 41, no. April 2013, pp. 89–109, 2013, doi: 10.1016/j.annals.2012.12.004.

[25] Z. Asadpourian, M. Rahimian, and S. Gholamrezai, "SWOT-AHP-TOWS Analysis for Sustainable Ecotourism Development in the Best Area in Lorestan Province, Iran," Soc. Indic. Res., vol. 152, no. 1, pp. 289–315, 2020, doi: 10.1007/s11205-020-02438-0.

[26] K. Król, "Forgotten agritourism: abandoned websites in the promotion of rural tourism in Poland," J. Hosp. Tour. Technol., vol. 10, no. 3, pp. 461–472, 2019, doi: 10.1108/JHTT-09-2018-0092.

[27] M. Rashidi, M. Mohammadi, S. S. Kivi, M. M. Abdolvand, L. Truong-Hong, and B. Samali, "A decade of modern bridge monitoring using terrestrial laser scanning: Review and future directions," Remote Sens., vol. 12, no. 22, pp. 1–34, 2020, doi: 10.3390/rs12223796.

[28] B. Vidyasagar and S. T. R. Sankara, "DWT with enhanced ANN technique for detecting and classifying the faults of synchronous generator," Int. J. Intell. Eng. Syst., vol. 9, no. 4, pp. 41–50, 2016, doi: 10.22266/ijies2016.1231.05.