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APPLICATION OF ECONOMIC MODELS TO GREEN CIRCUMSTANCE FOR MANAGEMENT OF LITTORAL AREA: A SUSTAINABLE TOURISM ARRANGEMENT

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Abstract

It is necessary to take into account the tourism sector's long-term environmental effects on a certain site, even though the growth of the tourism industry can assist a region economically. The long-term effects of growing number of tourists on ecological condition must be taken into account by those assessing different development possibilities, especially when the tourism business depends on a particular ecological state. This study outlines one method for fixing pleasure tourist behaviour to an ecological model that predicts the environmental effects of increasing number of tourists. Variables, based on research information and data on the water quality, taken from Ministry of Tourism website, were

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used to run two simulations for the system. According to the findings, a tourist destination's long-term survival depends in part on how well it can adapt to the changes brought on by growing hospitality industry. Additional framework elements, such as the travel industry and the adoption of the developed method in other contexts, could all be the subject of future research.

Keywords: *Economic Model, Sustainability, Tourism, Ecology and Management*

JEL Code : *Z32, Q53 and Z39*

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1. Introduction

Combining the demands for economic development with the protection of the fundamental natural resource assets, is a major challenge for littoral sector administration. There is frequently a trade-off in decisions about growth and development at the national, regional, and local levels, between the direct financial advantages resulting from economic occurrence (such as government revenue as well as employment created) and environmental services benefits such as safe water for catching fish, having a drink, and swimming, and biodiversity for visualising **(Akron et al., 2020)**. In order to characterise the interactions between littoral financial performance and bionetwork services, models relating to changes in ecosystem function or ecological condition to facilitate economic activity, may be helpful **(Vinayagamoorthi et al., 2015).** A crucial benefit of such modelling is that it can help determine whether a coastal ecosystem is close to the point at which it switches into a different state, with a different set of ecosystems streams, to suit consumers. The purpose of this study was to present analytical foundations for analysing the statistically significant differences between types of financial engagement and tourist industry, on environmental performance measures, visitor behaviour in the future, and, consequently, pressure from tourism in the future **(Falk, 2016)**. This paper concentrates primarily on a single environmental status indicator (total bacterial concentration in the quality of water) and one environmental services advantage (in this example, seaside pleasure). The model's constituent parts are created, and then evaluated in a variety of conceivable circumstances.

Financial drivers can determine the direction of changes in the bunch of environment services, provided by a particular beach biodiversity. **The World Tourism Organization and United Nations Environment Programme** have defined sustainable tourism as 'travel that fully considers the economic, social, and environmental impacts it has now and in the future while also meeting the needs of travellers, businesses, the surroundings, as well as community partners'. For instance, building lodges or residential apartments can cause silt to wash off into neighbouring sea, in addition to littoral waterways. Further, the growth of these tourist attractions, in the absence of proper manure administration, might result in higher bacterial counts in the seas around. The deterioration of the tourism area could be stopped before the capacity restrictions are reached. According to the researchers, a location's tourism sector may be in one of several states (such as long-term growth or decrease) depending on the value of specific brand variables. Hence the need to develop a framework, which incorporated financial, environmental, and social elements to assess future ecological changes as they occur **(Vinayagamoorthi et al., 2012).** Although these approaches include advanced theory in examining the relationship between natural and physical capital, they do not include economic models that look at how climatic impacts affect visitor communities' behaviour.

2. Methodological Approaches

This study took a systems dynamics approach to analyse this issue because there are many interrelated factors that influence the correlation between visiting the attractions expansion and the availability of fresh water. The model's elements provide a structure, for the kinds of observations that might be useful to examine the state of the natural capital investment and the financial choices **(Kathiravan et al., 2021)**. As depicted in **Figure-1** with Littoral-1, a predicted probability of visiting Littoral 1 (Littoral L1) is altered by a pattern of tourist arrivals (Visitors Arrival) and tourist departures (Visitors Depart), depending on the proportional indirect efficiency (X) of Beach 1 vs. Littoral 2. For Seaside 2, a similar model (along with corresponding economic and ecological sub models) is available. The result in favour of the conservation entrance (green entrance) is served through the natural element, detailed in division 2.2, while X is provided by the economic component, discussed in subsection 2.1. The monthly counts of tourists (Monthly Tourists Littoral 1) as well as a yearly count of littoral days above the threshold (Littoral 1 Annual Days above Threshold) were used to determine whether or not a coastline is over the green target level. For this model, the baseline "Total Monthly Beach Going Population" was set at twelve thousand, with a one percent yearly rate of economic growth for industry (**Lingaraja et al., 2019)**. Naturally, according to the features of the beaches under consideration, this percentage could change. Applying projected probability, as outlined in the following sections, the entire monthly beach goer audience is distributed between the two beaches **(Cortes-Jimenez et al., 2011).**

2.1 Financial Elements

The results of changes in the amount of littoral days, that surpass a water quality criterion, were calculated by the monetary factor (**Figure-2**). Outdoor recreation littoral use was a suitable natural resource benefit to assess while the focal point of this representation was related to ecological deterioration, littoral visit confirmation, as well as upcoming hospitality **(Kachwalaet al., 2018).** Two highly researched non-market techniques, from the ecological field of economics, called trip cost - benefit analysis as well as expected utility theory modelling (UTM), were employed. The UTM can be displayed generally as follows:

$$Lri = \frac{exp\ (Xi)}{\Sigma\ exp\ (Xk)}$$

Where

Lri = chance of selecting site ***i*** out of the ***k*** possibilities;

Xi = selection of location has indirect benefits;

therefore ***Xk*** = indirect benefit from looking around other sites that are offered

Information can be recorded out of a research of leisure activity participants, and UTM is dependent on experimental activity decisions of persons **(Das et al., 2019).** The Investigator could study the choices of sunbathers, for particular characteristics like collection of littoral, with different "attractiveness", depending on their attributes (e.g., coastline size, waterfront distance, analysis of hydrology). The goal of this research was to examine the variety of behaviours, revealed by traveller littoral changes. A method of connecting the financing decisions with the by quality of water, is provided by the behavioural shift in response to this indication of environmental status **(Nayak et al., 2022).** The ratio of days of water quality 2 (TS2), which is represented as the change from immaculate (TS1) to less than pristine (TS2), water superiority, is the environmntal part of the model, which is covered in section 2.2, determines "Proportion TS2 Days". The characteristics used in the model's initial run were created through data collection in Split-Dalmatia County. (Notice division 2.3 in favour of further information). The Ministry of Environmental Protection employed a water quality matrix (**Figure-3**), to allocate colour designations to coastlines. While TS2 corresponds to any greenish, pale, or burgundy outcome into the vibrant representation, TS1 corresponds in the direction of sapphire colour in the structure diagram. The following formula was used to compute X, or intermediate value, for every period of time (assuming that all other beach characteristics are identical across the two coastlines):

$$X = \mathbf{TE} * \text{€}_{\mathbf{TE}} + \mathbf{LTS2} * \text{€}_{\mathbf{LTS2}}$$

Where

TE is the expense of travel and

LTS2 is the proportion of days with unsatisfactory water bodies.

Next, forecasted proportion is computed using the following equation:

$$\frac{exp\ (Xi)}{\psi exp\ (Xk)}$$

Where

Xk stands for the meandering efficacy noticed on the erstwhile coastal in the selection situate (in our model, just one additional beachfront),

Xi denotes the indirectly benefit on coastal.

The tourist visits stream was divided among the locations in accordance with the estimated parameters.

2.2 Environmental Elements

An environmental element is required to predict how an increase in tourism traffic causes conditions to change from pristine to less-than-pristine, while the economic component assesses the visitor behaviour in reaction to exceeding established water quality thresholds (the behavioural barrier proportion). In **Figure-4,** the links for this component are depicted. In this model, it is presumed that carrying capacity is a fundamental property of the littoral area being studied. Although saturation point can be accessed through sociological, commercial, as well as ecological viewpoints, the emphasis in this case is primarily on the density having reference to preservation of a perfect degree of water purity **(Nair, R., & Augustine, S. 2005)**. The saturation point of a specific tourist area is affected, as this straightforward model demonstrates, by the beach's proximity to a harbour, the region's annual wetness, as well as the quality of treating wastewater. These factors are significant in influencing the quantities of germs seen in coastline waterways, according to an earlier study. This yields a determined "Natural Criterion", which is subsequently incorporated into the modelling tool **(Figure-1),** to decide whether or not an incremental day of less-than-ideal quality of water should be recorded. Whenever the cut-off is reached, the totals are translated into a percentage of the total number of beach days in a year **(Cortes-Jimenez et al., 2011)**.

2.3 Description of the Model's Characteristics

From the financial period 2010-2011 to 2018-2019, studies looked at the connection between India's tourism industry and poverty. The additional source of information was the INVEST INDIA, the official website of National Investment & Promotion Agency. Additionally, the Slightest Quadrangle Approach (SQA) was used to determine the impact of the independent "tourist receipt" variable on the dependent "poverty" variable. Excel tables and graphs were also utilised, to explain trends across components **(Das et al., 2022)**. But there was no agreement on how tourism and economic growth were related. Based on relevant material, the study put forths the following hypotheses:

H1-Financial Development is Influenced by Tourism

Transport is very important to the tourism industry, which is also the fifth largest source of greenhouse gas emissions.

H2-CO_2 Emissions may be Impacted by Tourism

It is widely acknowledged that the tourist sector needs a lot of energy to produce the goods, services, and visitor experiences and this usage of energy pollutes the air. At the visited locations, energy was required to support amenities, technical support, including travel **(Holzner, M. 2011)**. There are no studies to examine the connection between tourism and power use.

H3 - Energy Use is Influenced by Tourism

Foreign direct investment is thought to be determined by the tourism industry (FDI). FDI actively contributes to the growth of the tourism sector **(Holzner, M. 2011)**. Hospitality, FDI, economic progress, as well as ecological damage are all linked together, under the concept of globalisation. The liberalisation initiative has increased the amount of FDI in the services sector (**Pal, D. 2021**). Trends indicate that the lowered environmental regulations brought about the rise in FDI-stimulated CO2 emissions in developing nations.

H4 - Investment Influences Tourism

Hospitality Industry deals with millions of visitors. Gross domestic product as well as net FDI streams were used to calculate capital investment amounts in constant US dollars, CO_2 emissions were used to calculate environmental pollution in tonnes per person, and kg of oil was used to calculate energy consumption per person **(Jamader et al., 2019)**. To address the proposed hypotheses, this study created five models, based on our claims.

$$GDPzy = \Sigma\ (Tourismzy,\ Capitalzy,\ Energyzy,\ Co2zy)$$
$$CO2zy = \Sigma\ (GDPzy,\ Tourismzy,\ Capitalzy,\ Energyzy)$$
$$Energyzy = \Sigma\ (Tourismzy,\ Capitalzy,\ Energyzy,\ Co2zy)$$
$$Capitalzy = \Sigma\ (GDPzy,\ Tourismzy,\ Co2zy,\ Energyzy)$$
$$Tourismzy = \Sigma\ (GDPzy,\ Co2zy,\ Capitalzy,\ Energyzy)$$

Where,

DP = Financial Development is assessed through the Gross Domestic Product (GDP),

DI = Capital Investment and Creation (net FDI flows),

CAR = Environmental Pollution and Degradation (CO2 emissions),

KPC = Energy Consumption (kg of oil used per capital) and

TA = Tourist Arrivals

3. Result of the Study

Table-1 provides the results of the descriptive statistics **(Mahmood & Ahmad, 2020)** to find out the statistical estimation of sample variables over the time series. Tourists' arrivals were measured instead of tourist receipts. In addition to tourism and CO2 emissions, the results of Spearman's ranked correlation indicated that all the sample variables were substantially and directly correlated with one another, as shown in **Table-2.** The indicators' positive relationship revealed that if one measure rises, most others rise in a similar manner. The results of the $\partial\varphi\delta$ and $\rho\rho$ unit root tests, which were used to determine if the variables were stationary, are displayed in **Table-3**. All the sample variables were found to be integrated with orders I (0), I (1), or both, which proved co-intgration **(Rajasekhar & Reddy, 2005)**. Littoral 1 ought to go beyond the traffic volume as well as environment related barrier, for any given number of monthly tourists, given that it is considered to be situated in a bay environment for this scenario. The pattern of monthly visitors to the two littorals, during the course of modelling framework, has been depicted. There is a unit root, according to the null hypothesis. The asterisks * and ** stand for "the null hypothesis being rejected at one percent as well as five percents, with I (0), only at threshold while I (1), at first variance. Littoral 1 received fewer monthly tourist visits than Littoral 2 did.

When the study looked more closely at the predicted value, it was observed that this fluctuation in littoral 1 visit could be explained by the exceeding of environmental thresholds, which caused adjustments in estimated probabilities of attendance. Every time when littoral 2's anticipated likelihood of visitation exceeded littoral 1's predicted probability of visitation, resulted in littoral 2 receiving a larger share of the visitor stream. Due to the littoral's 2's harbour positioning and consequently, lower carrying capacity, the environmental threshold was exceeded more frequently, with an increase in the number of visits per year when the criterion was exceeded **(David & Singh, 2016)**. The preference for the alternative beach location was based on the indirect utility of a site (all other factors being equivalent). Throughout this case, it was assumed that approximately twenty five percent of the tourist-use home stays as well as restaurants along the shore, were integrated into a treatment system for sewage, that eliminated potential bacteria growth **(Cortes-Jimenez et al., 2011)**. It is to be noted that adding dirt handling utensils in the direction of littoral 1, theoretically it would make both the littorals supplementary, in terms of exceeding thresholds. This would reduce the dissimilarity in periodical visitation stages between both the coastlines. Infrastructure spending effectively would neutralise the reduced volume brought on by a relatively poor harbour ecosystem. The extent of these changes, during the simulated twenty - year time frame, can be better understood by adding together the entire visitor numbers at each beach **(Cortes-Jimenez et al., 2011)**. The drainage infrastructural development led to the reconfiguration of roughly 140K visits from littoral-2 back to littoral-1.

4. Discussion

The framework, designed in this study, offers a single possible approach for combining specific economic behaviour with ecological factors and to assess how the local economy has been transformed over time **(Phillips & House, 2009)**. This approach aims to conceptualise, using current sustainability planning of international visitors desirability. The impact of "desirability" on the growth of tourism attractions has been studied in the past. The model's tests revealed that when carrying capacity thresholds are exceeded, there can be changes in the beaches under study. The carrying capacity thresholds depend on the unique properties of the littoral under consideration **(Christopher, J. 2013)**.

According to the theory presented in this study, having just the littoral in a sea spot reduces the area's potential carrying capacity and has an ongoing effect on the area's appeal as a vacation spot. Various location-based features will determine the degree to which the bay location will affect the carrying capacity **(Cortes-Jimenez et al., 2011)**. In favour of the urban or the area where the littoral is situated, this could have significant economic ramifications. Fewer visitors would mean lesser money from tourists, which would slow down economic progress **(Rajagopalan & Noyaline, 2012)**. Tourists would only take into account data from the previous year on water quality and they would have to choose between the two littorals. According to the final model-generated assumption, investments in water facilities may be able to reduce prospective economic impacts as well as declines in ecotourism. Seventy thousand additional people visit Littoral 1 because infrastructure improvements had mitigated the impact of tourism numbers on the bay ecosystem. Nevertheless, it is vital to keep in mind that this approach just offers two littorals and mandates that each visitor chooses one of the two littorals **(Cortes-Jimenez et al., 2011)**. Because the littorals are guaranteed a certain volume of overall traffic, this may understate the effect of exceeding water quality standards on total visitation levels. The only issue with the approach is how visitors choose one beach over another, would affect allocation. Adverse effects may follow if the tourist were to choose a completely another location. More specifically, in Scenario 2, both beaches have yearly threshold of five days per year, after twenty years. If, however, another beach with similar appeal in terms of desirable qualities, with environmental threshold exposures four times per year, travellers may choose that location **(Cortes-Jimenez et al., 2011)**. The methodology provides a structure for the data, necessary to understand the relationship between the growth of the tourism industry and the value of the environmental resource. Observation of this information would make it possible to create statistical association, particular to each site, that would help with power and resources calculations at coastal areas. In the everyday world, it might also be advantageous to gather more data on coastal attributes, to account for such features as well as separate the influence of the hydrologic factor on visitor behaviour **(Ghosh et al., 2017)**.

It may be possible to determine the voyage thresholds to integrate idea of tourists' manners with models of changes, during environmental circumstance **(Holzner, M. 2011)**. These thresholds are viewed from the viewpoint of the travellers, who use the data at hand, to decide on the current condition of a certain environment. A tourist's behavioural boundary for acceptance of less than ideal water superiority is related to the environment's haulage ability in favour of leisure consumer, which causes a decline in water bodies **(Cortes-Jimenez et al., 2011)**. Metrics of overcrowding, ease of access of coastal region to neighbouring people, "crowding out" of funds changes in community members' well-being, demonstrated by modifications in mortgage rates, as well as financial factors, must be taken into account **(Faber & Gaubert, 2019)**.

All these variables would have had distinct effects, which are interconnected. Judgments are also uninformed about other ecological barriers that might be affected by the growth in tourism development by the bacterial-based recreational visitation threshold **(Ghosh et al., 2017)**. By way of nutrient enrichment as well as enhanced turbidity in coastal waters, amplified nutrient levels or discharge of remains might adversely affect marine organisms. These parameters can be incorporated into this model by creating extra components **(Holzner, M. 2011)**.

There are a few drawbacks in the current dynamic model. There is need for a wider operationalization of eco-financial framework during the circumstance of safe ecotourism. Currently, the importance of tourism (such as hotels as well as commercial shops) is not included in this model (only tourists are modelled here) **(Holzner, M. 2011)**. This sector should be included in order to better understand how changes in the tourism business would affect the general economy, directly as well as indirectly.

By presenting the business case for enhanced water quality, such tourism sector modelling could help investments in infrastructure in vulnerable coastal areas. Changes in the number of tourists visiting a particular location, would cause ebbs and flows in asset enterprises, which could affect the health of the reliant community. The effects of these modifications must be taken into account since they may cause modifications in local wellness and well-being variables, that are more challenging to monetize, which would reduce the GDP gains from tourist expenditures **(Faber & Gaubert, 2019)**.

The aforementioned parameterization of water quality is predicated on an implicit supposition regarding the association between pathogenic concentrations in waters and financial behavioural reaction **(Ghosh eta al., 2017)**. The water quality assigned by the government to a specific littoral area (**Figure 3**) and anticipated tourist traffic to that site, were used in the equation. This environmental quality allocation has limitations based on measurements of pathogenic concentrations. Earlier work had emphasised the difficulty of using the waterway performance measure to forecast behaviours of recreational travel and as a potential indication of ecosystem service. Recreationists' assessment of bacterially contaminated water may be dependent on previously received knowledge or self-reported observations of the water's clarity. As a result, the risk may not be immediately apparent. People may express a desire for healthier water sources whenever specifically questioned about it in a confirmatory factor study, although this does not automatically imply that they received and process accurate data about the cleanliness of the water supply **(Holzner, M. 2011)**.

A limited amount of environmental and economic data about coastlines was parameterized into two fictitious beaches for the developed framework. If the broad representations, contained in the framework, hold true across a variety of geographical contexts, it would require supplementary assessment of facts required for the representation. In order to establish uncertainty bounds for subsequent attempts of this system, this broader assessment would fix the probable ranges in favour of the planned domain. Further, sophisticated research methodology, to identify the correlation between sites of germ polluting sources and transportation as well as dissemination towards territorial waters, will be beneficial to the approach **(Ghosh et al., 2017)**. It is critical to take into account both the spatial characteristics of sites and the interactions between various variables, while evaluating site differences **(Jamader et al., 2021)**. Since proximity between downstream end and recreational use points (littorals) has not been brought into account in the framework, this data would assist in determining the optimum level for the model's implementation **(Faber & Gaubert, 2019).**

By compiling these geographic measurements into a data repository, researchers were able to learn more about the additional factors, such as present stream, which may affect the relationship between tourist numbers and littoral bacterial inputs **(Goodwin, H. 2008).** The distributional effects of the suggested model scenarios could be brought to light by integrating the proposed linked model with planet visualisation tools **(Pattnaik et al., 2022).**

4.1 Testing of H1 to H4

H1 - Financial development is influenced by tourism and it is supported by the relation where DP is absolutely subjected to TA.

H2 - CO2 emissions may be impacted by tourism and it is supported by the relation where TA is absolutely subjected to CAR.

H3 - Energy use is influenced by tourism and it is supported by the relation where KPC is absolutely subjected to TA.

H4 - Investment influences tourism and it is supported by the relation where DI is absolutely subjected to TA.

The experimental study suggested that adverse ecological impact resulted in reduced adventure tourism and it concurred with hypothesis H1 through H4. One may claim that heavy pollution causes the natural and historic environment to lose its natural ambience, which would result in a sharp decline in visitor numbers. By adhering to the fundamental tenet of tourism development, such harmful ecological impact must be reduced. A sustainable tourism plan should be adopted by policymakers, to reverse such adverse environmental effects.

5. Conclusion

The framework presented in this research was intended to act as tentative statements, which may acquire more clarity by creating concepts of the expansion of the travel sector and their correlation to coastline quality of water as well as consumption levels of coastline vacation spots. Authorities, who are thinking on coastline investment and growth decisions, might benefit from continued improvement of such models. Tracking activities for the parameters in this approach would result in a substantial repository of connections among indicators of ecological health and behaviour. The framework proposed here concentrates on a specific form of environment that benefits vacationers who visit beaches, although their usage of a commodity may clash with several other potential uses of coastlines. Investigations into the interactions among visitors and the coastal environment, as well as the long-term effects of such interactions, is essential, given that many nations place a high priority on ecotourism as a driver of economic growth. Additional evaluation of the approach, under various control situations, would enhance comprehension of the economic and environmental knowledge.

6. Scope for Further Research

A basic understanding of the directional impact of the converging ecological sector, constitutes a crucial first step for community efforts. Local stakeholders can build upon this model by proposing additional pertinent modules. Current data limitations prevent systematic estimate of the connections between variables involved.

The model needs to undergo more testing, in various management contexts, to better understand the types of ecological and economic data that are accessible, any changes that need to be made to the proposed framework, and the applicability of the anticipated threshold-response connections to coastal environments.

7. References

Akron, S., Demir, E., Díez-Esteban, J. M., & García-Gómez, C. D. (2020). Economic policy uncertainty and corporate investment: Evidence from the US hospitality industry. *Tourism Management*, *77*, 104019.

Christopher, J. (2013). Prominent factors of customer satisfaction on domestic airline carriers in India. *SMART Journal of Business Management Studies*, *9*(2), 11-20.

Cortes-Jimenez, I., Nowak, J. J., & Sahli, M. (2011). Mass beach tourism and economic growth: Lessons from Tunisia. *Tourism Economics*, *17*(3), 531-547.

Dhanalakshmi, R. (2008). Factors predicting stress of employees in a public transport corporation. *SMART Journal of Business Management Studies*, *4*(1), 59-62.

Das, P., Jamader, A. R., Acharya, B. R., & Das, H. (2019, May). HMF Based QoS aware Recommended Resource Allocation System in Mobile Edge Computing for IoT. In *2019 International Conference on Intelligent Computing and Control Systems (ICCS)* (pp. 444-449). IEEE.

David, R., & Singh, S. (2016). Correlation between locus of control and happiness among postgraduate students in India. *SMART Journal of Business Management Studies*, *12*(2), 40-46.

Das, P., Martin Sagayam, K., Rahaman Jamader, A., & Acharya, B. (2022). Remote Sensing in Public Health Environment: A Review. *Internet of Things Based Smart Healthcare*, 379-397.

Faber, B., & Gaubert, C. (2019). Tourism and economic development: Evidence from Mexico's coastline. *American Economic Review*, *109*(6), 2245-93.

Falk, M. (2016). A gravity model of foreign direct investment in the hospitality industry. *Tourism Management*, *55*, 225-237.

Goodwin, H. (2008). Tourism, local economic development, and poverty reduction. *Applied Research in Economic Development*, *5*(3), 55-64.

Ghosh, R. N., & Siddique, M. A. B. (Eds.). (2017). *Tourism and economic development: Case studies from the Indian ocean region*. Routledge.

Holzner, M. (2011). Tourism and economic development: The beach disease?. *Tourism Management*, *32*(4), 922-933.

Jamader, A. R., Das, P., & Acharya, B. R. (2019, May). BcIoT: blockchain based DDoS prevention architecture for IoT. In *2019 International Conference on Intelligent Computing and Control Systems (ICCS)* (pp. 377-382). IEEE.

Jamader, A. R., Das, P., Acharya, B., & Hu, Y. C. (2021). Overview of Security and Protection Techniques for Microgrids. In *Microgrids* (pp. 231-253). CRC Press.

Kathiravan, C., Selvam, M., Maniam, B., Venkateswar, S., & Sigo, M. O. (2021). Does temperature influence the carbon index? Evidences from India. *Journal of Public Affairs*, *21*(1), e2117.

Kathiravan, C., Selvam, M., Gayathri, J., Raja, M., & Sigo, M. O. (2019). Air pollution and stock returns: Evidence from NSE and BSE of India. *International Journal of Recent Technology and Engineering*, *8*(3), 2569-2573.

Kathiravan, C., Selvam, M., Maniam, B., & Dharani, M. (2021). Effect of weather on stock market: A literature review and research agenda. *Cogent Economics & Finance*, *9*(1), 1971353.

Kachwala, T., Bhadra, A., Bali, A., & Dasgupta, C. (2018). Measuring customer satisfaction and service quality in tourism industry. *SMART Journal of Business Management Studies*, *14*(1), 42-48.

Lingaraja, K., Paul, J., & Selvam, M. (2019). Indian culture, lunar phases and stock market returns. *International Journal of Indian Culture and Business Management*, *19*(4), 394-417.

Mahmood, A., & Ahmad, M. U. (2020). A study on behavioural traits of risk averse investors: Evidences from India. *SMART Journal of Business Management Studies*, *16*(2), 115-123.

Nair, R., & Augustine, S. (2005). Tourism Brand Promotion. *SMART Journal of Business Management Studies*, *1*(2), 77-80.

Nayak, D. K., Mishra, P., Das, P., Jamader, A. R., & Acharya, B. (2022). Application of Deep Learning in Biomedical Informatics and Healthcare. In *Smart Healthcare Analytics: State of the Art* (pp. 113-132). Springer, Singapore.

Phillips, M. R., & House, C. (2009). An evaluation of priorities for beach tourism: Case studies from South Wales, UK. *Tourism Management*, *30*(2), 176-183.

Pattnaik, P. K., Vaidya, A., Mohanty, S., Mohanty, S., & Hol, A. (Eds.). (2022). *Smart Healthcare Analytics: State of the Art*. Springer.

Pal, D. (2021). Socially responsible investment, ethical rating, and separating contracts: A theoretical exploration in hospitality industry. *International Journal of Hospitality Management*, *93*, 102771.

Roozitalab, A. (2022). Employing strategic management to study the effect of brand awareness on customer's loyalty: Exploring the mediation effect of perceived brand quality and brand communication: A study of Samsung electronics company in Tehran branch. *SMART Journal of Business Management Studies*, *18*(1), 38-46.

Rajasekhar, M., & Reddy, S. V. (2005). Consumer behavior towards meat and meat products. *SMART Journal of Business Management Studies*, *1*(2), 53-57.

Rajagopalan, V., & Noyaline, A. (2012). Stress Management-An empirical analysis. *SMART Journal of Business Management Studies*, *8*(2), 36-45.

Vasani, S. A., Selvam, M., & Selvam, M. (2019). Relationship between real exchange rate and economic growth in India. *ZENITH International Journal of Business Economics & Management Research*, *9*(3), 19-35.

Vinayagamoorthi, V., Selvam, M., Lingaraja, K., & Mahalingam, G. (2012). Environmental management accounting–A decision making tools. *Environmental Management Accounting–A Decision Making Tools (December 12, 2012). International Journal of Management*, *3*(3), 144-151.

Vinayagamoorthi, V., Selvam, M., Lingaraja, K., & Miencha, I. (2015). Testing environmental Kuznets curve hypothesis at firm level in India. *Journal of Sustainable Development*, *8*(8).

Zielinski, S., & Botero, C. M. (2020). Beach tourism in times of COVID-19 pandemic: critical issues, knowledge gaps and research opportunities. *International Journal of Environmental Research and Public Health*, *17*(19), 7288.

Table-1: The Results of descriptive Statistics showing Statistical Estimation for Time Series (The Tourism in Tourists' arrivals are measured instead of tourist receipts)

	DI	CAR	KPC	DP	TA
Highest	22.41	11.94	6.21	26.19	13.98
Mean	19.89	11.23	5.99	25.24	12.99
Smallest	15.89	10.02	5.6	24.18	11.39
Std. Dev.	1.65	0.64	0.22	0.56	0.46

Source: The sample of the present study covers annual time series and the data were collected from INVEST INDIA, National Investment & Promotion Agency (www.investindia.gov.in), Government of India.

Table-2: The Results of Ranked Correlations by Spearman (The Factors are Positively Correlated)

	DI	**CAR**	**KPC**	**DP**	**TA**
∂ φ δ	**1(0)** / **1(1)**	**1(0)** / **1(1)**	**1(0)** / **1(1)**	**1(0)** / **1(1)**	**1(0)** / **1(1)**
DI	I				
CAR	0.92(0.00)	I			
KPC	0.89(0.00)	0.91(0.00)	I		
DP	0.94(0.00)	0.98(0.00)	0.90(0.00)	I	
TA	0.86(0.00)	0.88(0.00)	0.88(0.00)	0.87(0.00)	I

Source: The sample of the present study covers annual time series and the data were collected from INVEST INDIA, National Investment & Promotion Agency (www.investindia.gov.in), Government of India.

Table-3: The Results of Tests of Root (the Unit Root Exists)

	DI	**CAR**	**KPC**	**DP**	**TA**
∂ φ δ	**1(0)** / **1(1)**	**1(0)** / **1(1)**	**1(0)** / **1(1)**	**1(0)** / **1(1)**	**1(0)** / **1(1)**
1(0)	-1.99	**-3.55****	**-3.51****	-1.99	**-3.21****
1(1)	**-5.67***	**-8.58***	**-7.52***	**-3.99***	**-9.02***
ρρ					
1(0)	-1.99	**-3.55****	**-3.51****	-2.29	**-3.33***
1(1)	**-5.67***	**-5.78***	**-37.99***	**-4.03***	**-10.43***

Source: The sample of the present study covers annual time series and the data were collected from INVEST INDIA, National Investment & Promotion Agency (www.investindia.gov.in), Government of India.

Note: The asterisks * in addition to ** signify "the denial of the null hypothesis next to 1% as well as 5%; I (0) specify by the side of the stage along with I (1) on initial regard.

Figure-1: Littorals General Ecological and Economic Framework

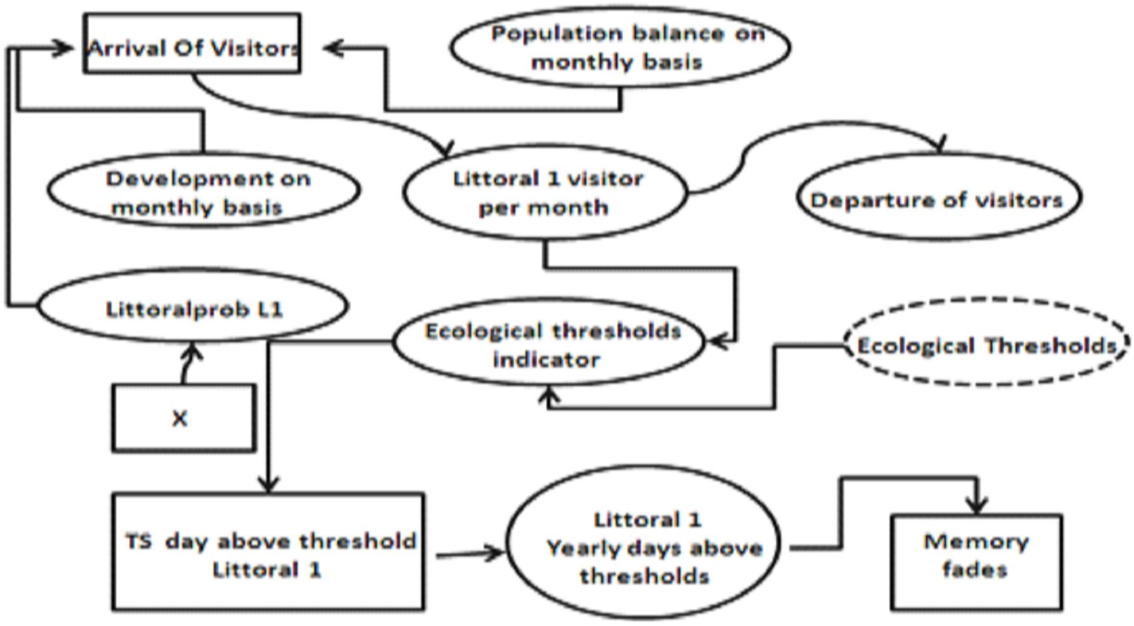

Figure-2: Financial Elements of the Proposed Model

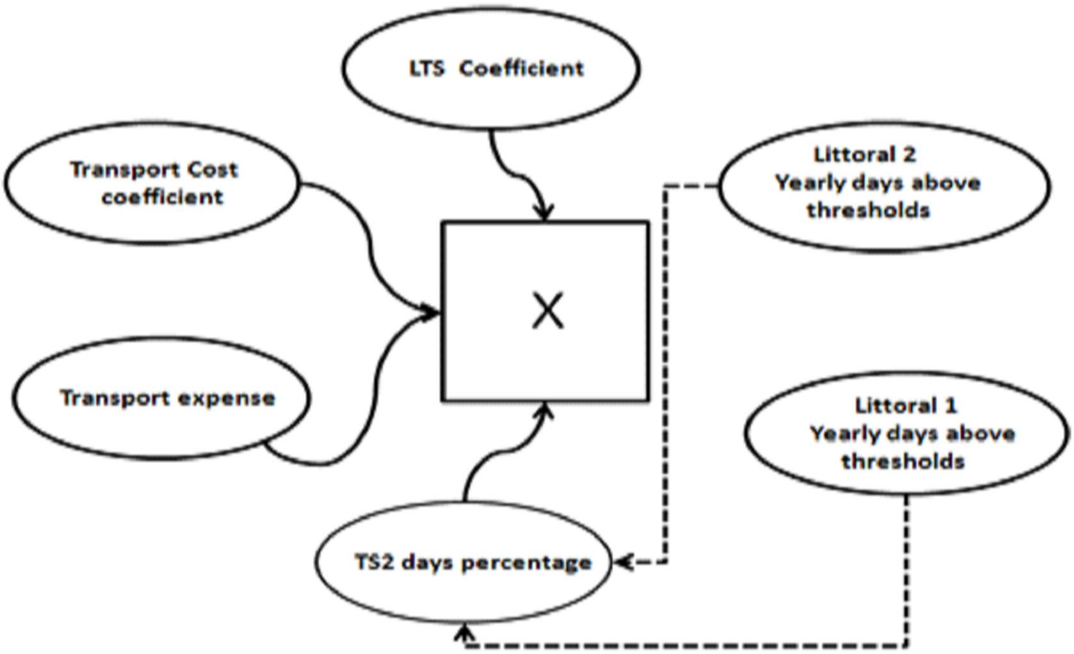

Figure-3: Demonstration of Anthropogenic and Organic Activities where a Variety of Sources are Eroding the Quality.

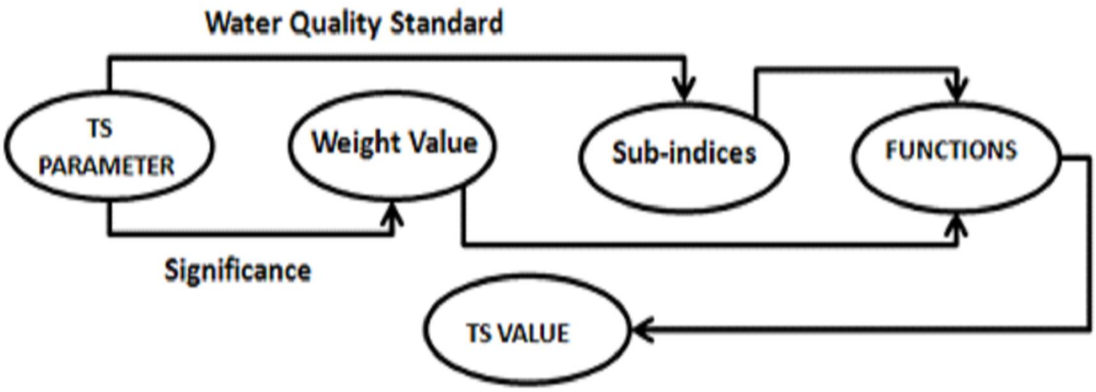

Figure-4: Environmental Thresholds for a Specific Coastal Area, as Proposed by the Model's Ecological Element