



# Analysis Factors of Environmental Carrying Capabilities that Affect the Highness of Tourism Visits in the Form of Interest, Initiation, Loyalty with Structural Equation Modelling (SEM)

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**Abstract:** The environmental carrying capacity in coastal areas is interesting to develop and can be achieved through two approaches, namely the supply side approach and the demand side approach. From the supply side, this research aims to implement the Carrying Capacity of the Coastal Environment, this research seeks to understand the relationship between external factors in the form of Interest, Initiation, Loyalty, Content Validity has been used with the Content Validity Index (CVI) method, while Construction Validity has been used with the Confirmatory method Factor Analysis used Amos 23. The scale validation subjects involved 308 respondents. The research results show that 16 items measure Interest, Initiation, and Loyalty. The modification results show that the model fits with 16 statements containing the factors Interest, Initiation, and Loyalty, as indicated by the Chi-Square values which are not significant, GFI (0.99), CFI (0.91).

**Keywords:** Confirmatory Factor Analysis; Interest; Initiation; Loyalty; SEM (Structural Equation Modelling); Validation

## Introduction

The increasingly rapid growth of industrial competition in the Carrying Capacity of the Coastal Environment means that a destination must continue to improve various facilities to meet tourist needs, as well as find ways to promote tourist attractions (Science, 2018). Analyze and suggest that the value, perception, and uniqueness of historical heritage can be used as an object to attract tourists (Wall, 1997). Explained that competitiveness is the most important factor in developing the Coastal Environment Carrying Capacity industry to become a successful destination (Holden, 2013). To attract tourists, the Coastal Environmental Carrying Capacity industry must focus on the competitiveness of tourist destinations (destination competitiveness). Understanding competitive Coastal Environmental Carrying Capacity indicators can

influence a tourist's decision whether he or she will visit a destination or not (Kiper, 2013).

Defining the Carrying Capacity of the Coastal Environment as the ability to create value to improve local and national prosperity by managing assets better and integrating these relationships into economic and social models (Diamantis, 1999). They show that measuring destination competitiveness, environmental carrying capacity, and resources are the determining (main) factors in promoting Coastal Environmental Carrying Capacity. They found that destination image, which consists of natural resources and beauty, is the main factor in measuring destination competitiveness (Diamantis, 1999). Meanwhile (Kim & Park, 2017) state that the Carrying Capacity of the Coastal Environment can be increased by increasing the more positive the image of a destination, the greater the benefits that destination will obtain.

## How to Cite:

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The image of a destination is the most important factor because it influences the level of satisfaction and subsequent behavior, including word-of-mouth and subsequent visits. Thus, tourists' positive experiences of services, products, and other resources provided by tourist destinations are very important (Diamantis, 1999). Recommendations from tourists who have visited a destination can be used as the most reliable source of information for future potential tourists (Timothy, 2002). From the several research roadmaps above, it appears that there is quite a big opportunity to develop synergistic institutional involvement of all stakeholders involved in the management and use of tourism that contains environmental education.

**Method**

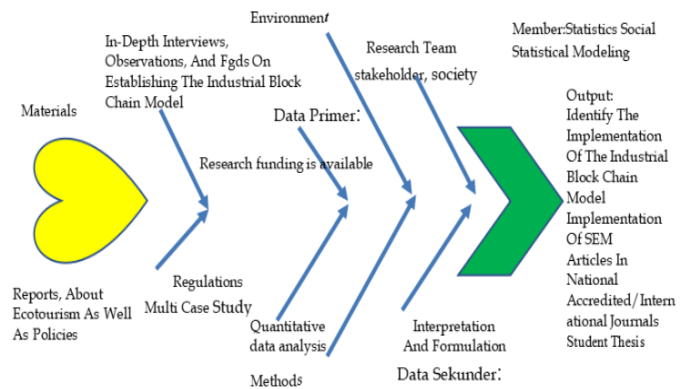
The environmental carrying capacity of the Coastal Environmental Carrying Capacity sector must be able to provide an increase in the equitable distribution of village community income and also encourage the emergence of creative economy industries, especially services. The concept of ecotourism, which consists of components of environmental preservation (nature and culture), increasing community participation, and increasing local economic growth, has been introduced and developed successfully in many developing countries.

A deductive framework of thinking contains theories with major premises, namely: International politics, international cooperation, and foreign policy, and minor premises, namely: Diplomacy, Carrying Capacity of the National Coastal Environment, and Indonesian Ecotourism. Based on hypothesis testing, the author concludes that the economic considerations for foreign tourists visiting Indonesia are because Indonesia has very extensive natural tourist attractions, making it possible for foreign tourists to spend a little money to buy antiques or handicrafts from regional communities in Indonesia.

The Indonesian government through Presidential Instruction Number 6 of 2009 concerning Creative Economy Development has instructed relevant government officials to create and implement policies that support the development of the creative economy. In Presidential Instruction Number 6 of 2009, the government has also determined the types of economic activities included in the creative economy, namely: advertising; architecture; art and antique market; craft; design; fashion (fashion); film, video, and photography; interactive games; music; performing arts; publishing and printing; computer services and software; radio and television; research and development, the culinary sub-

sector only entered after Presidential Decree No. 72 of 2015.

The research method used was a mixed method, both qualitative and quantitative. With the Survey Method, sampling is selected in the Purposive Random Sampling categorization. After the sampling was taken, it was analyzed using Structural Equation Modeling (SEM) of all actors and stakeholders involved in developing the Tourism Destination Branding strategy, as shown in the Fish Bone diagram below.



**Figure 1.** Research Method Fishbone Diagram

As described in the description of this study, research data was collected through questionnaires which were distributed to local tourism agencies and tourists only in the Gili Labak subdistrict which has coastal tourism destinations. The statements in the questionnaire which are intended to find out the perception of iwi snus iwi snus iwisman are prepared in the form of closed statements with i5 ordinal scale iperception options. Choice i1 shows the most negative perception of the respondent and choice i5 shows the most positive perception of the respondent. The number of respondents in this research is 110 tourists, who meet the following criteria: Willing to participate voluntarily in this research; Be at least 18 years old when filling out the questionnaire; Have stayed in one of the tourist accommodations around the destination for at least 1 night. A structural model is designed in line with research objectives and analyzed with a variance-based structural equation model. The conceptual research is represented in Figure 2.

In the model that has been built, seven hypotheses have been tested, each hypothesis testing the significance of the coefficient of the path that connects the exogenous variable with the endogenous variable in the model. The hypotheses in this research are in full as follows: H1 Environmental Carrying Capacity on Natural Motivation Influence Destination on Gili Labak Beach Sumenep, H2 Environmental Carrying Capacity of Initiation influences the attraction of destination at

Gili Labak Beach, Sumenep H3 Environmental Carrying Capacity on Loyalty influences the attraction of destination in Sumenep Regency.

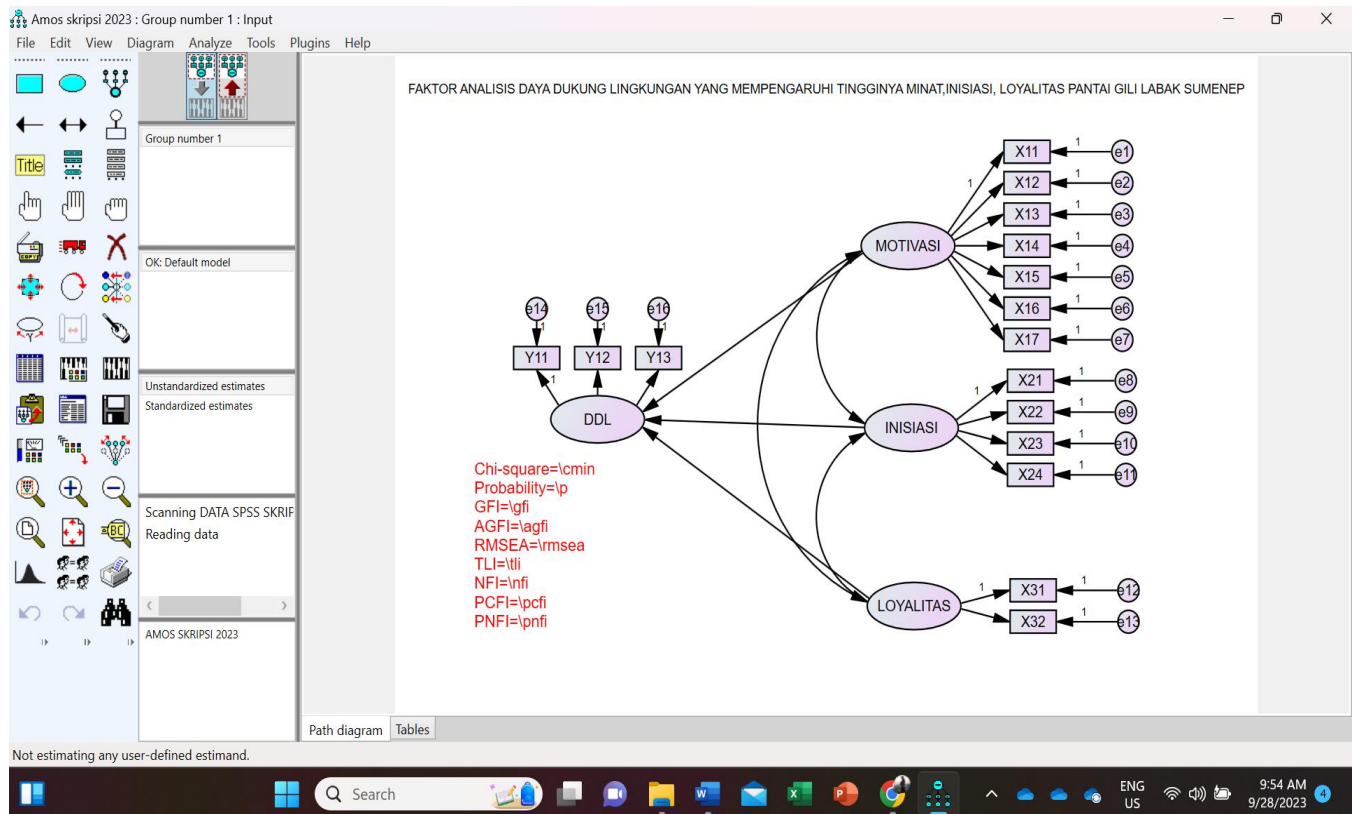


Figure 2. Planned Modeling Chart of Factors that Influence Environmental Carrying Capacity Analysis Factors that Influence the High Interest, Initiation, and Loyalty of Gili Labak Beach, Sumenep).

The i-measurement model (measurement model) is a sub-model of the structural equation model that describes the relationship between a latent variable and the indicators used as measuring items considering that latent variables cannot be measured directly. Measurement of reflective indicators  $x_i$  - indicators reflected by latent variables  $\xi_j$  - can be expressed through the equation

$$x_i = \gamma_{0j} + \gamma_{1j} \xi_j + \delta_i; i = 1, p; j = 1, q \quad (1)$$

In Eq p represents the number of indicators in the jth latent and q = the number of latent variables in the structural equation model. At the analysis stage, xi and

$\xi_j$  are expressed in standardized form so that the  $\gamma_{0j}$  term is eliminated from equation (1). In the structural equation model, before the hypothesis in Figure 1 is tested, each block that represents the causal relationship between a latent variable and its reflective indicators must be validated by checking composite reliability (CR), convergent validity (CV), and discriminant validity (DV). Table 1: displays CR values which describe the internal consistency of latent variables with their reflective indicators, and average variance extracted (AVE) which shows the CV of latent variables. To establish internal consistency,  $CR \geq 0.708$ ; and for convergent validity of the latent variable to occur, the AVE value is  $\geq 0.50$ .

Table 1. Results of Measurement Sub-Model Analysis

Lat variable	CR	AVE	Code	Statement	Factor Loading	p- Value
Motivation	0.867	0.621	X21	Beautiful natural panorama	0.82	0.00
			X22	The weather and climate are comfortable for tourism	0.78	0.00
			X23	There are natural forests and mangroves	0.82	0.00

Lat variable	CR	AVE	Code	Statement	Factor Loading	p- Value
Initiation	0.928	0.591	X24	There is interesting flora and fauna	0.71	0.00
			X25	There are additional recreational facilities	0.61	0.00
			X41	Quality and variety of accommodation services	0.82	0.00
			X42	Quality of travel agency services	0.76	0.00
			X43	Quality and variety of culinary establishments	0.81	0.00
			X44	Quality and variety of sport tourism	0.79	0.00
			X45	Availability of campground services	0.68	0.00
			X51	Availability of supporting capacity for children's tourism environment	0.69	0.00
			X52	Availability of supporting capacity for the adult tourism environment	0.78	0.00
			X53	Availability and variety of Ac Guest House ACGuest Hous	0.75	0.00
			X54	Availability and variety of Guest House AC 1 PK	0.79	0.00
			X55	Availability and variety of souvenir shops	0.78	0.00
			X31	Availability of tourist information services	0.72	0.00
			X32	Availability and communication services	0.74	0.00
Loyalty	0.900	0.565	X33	The quality of road infrastructure is good	0.81	0.00
			X34	There are rarely traffic jams	0.62	0.00
			X35	Quality of service for pedestrians	0.75	0.00
			Y21	Level of satisfaction after visiting	0.82	0.00
			Y22	The experience exceeded visit expectations	0.88	0.00
Environmental Carrying Capacity	0.918	0.692	Y23	The destination is worth visiting	0.88	0.00
			Y24	The cleanliness of the destination is well-maintained	0.80	0.00
			Y25	Sumenep tourist destination is superior	0.75	0.00
			Y11	Choosing Sumenep as your favorite destination	0.87	0.00
			Y21	Choose Sumenep when returning to Madura	0.86	0.00
			Y31	Recommend Sumenep tourist destination	0.86	0.00
			Y41	Inform Sumenep tourist destinations	0.86	0.00
Y51	Posting tourist trips while at Gili Labak Beach, Sumenep	0.86	0.00			

Source: primary data (2021)

Looking at the CR and AVE values in Table 1 which exceed the required threshold values of 0.70 and 0.50, the 5 latent variables with reflective indicators in the structural model have adequate internal consistency between indicators and have good convergent validity. This is confirmed by the factor loading value of each indicator which is significant at the  $\alpha = 1$  percent test level. The structural model (structural or inner model) is a sub-model that shows the causal relationship between

latent variables. In this research, the significance for each path coefficient of each causal relationship was obtained using a bootstrap technique whose configuration was set at the number of sub-samples = 500, number of iterations = 200 for each sub-sample, and no sign change in each iteration.

Figure 5: Path coefficient values for each direct effect of exogenous latent on endogenous latent in the model are shown.

Looking at the p-values in Figure 4 which are placed in pairs of brackets, the 5 hypotheses designed in this study were accepted at a test level ( $\alpha$ ) of 1 percent. The only hypothesis that cannot be accepted is IH5 which states that the attractiveness of the destination influences the level of satisfaction of tourists visiting Sumenep. Although the quality of the environmental carrying capacity of a destination (attraction) is theoretically considered to influence the level of

satisfaction of visiting tourists, apart from tourist accommodation (accommodation), other services (ancillaries services), and accessibility (accessibility) in this study only tourist facilities and Accessibility has been proven to significantly influence the level of satisfaction of domestic and foreign tourists visiting Sumenep Regency, with an influence of 0.48 and 0.33 respectively.

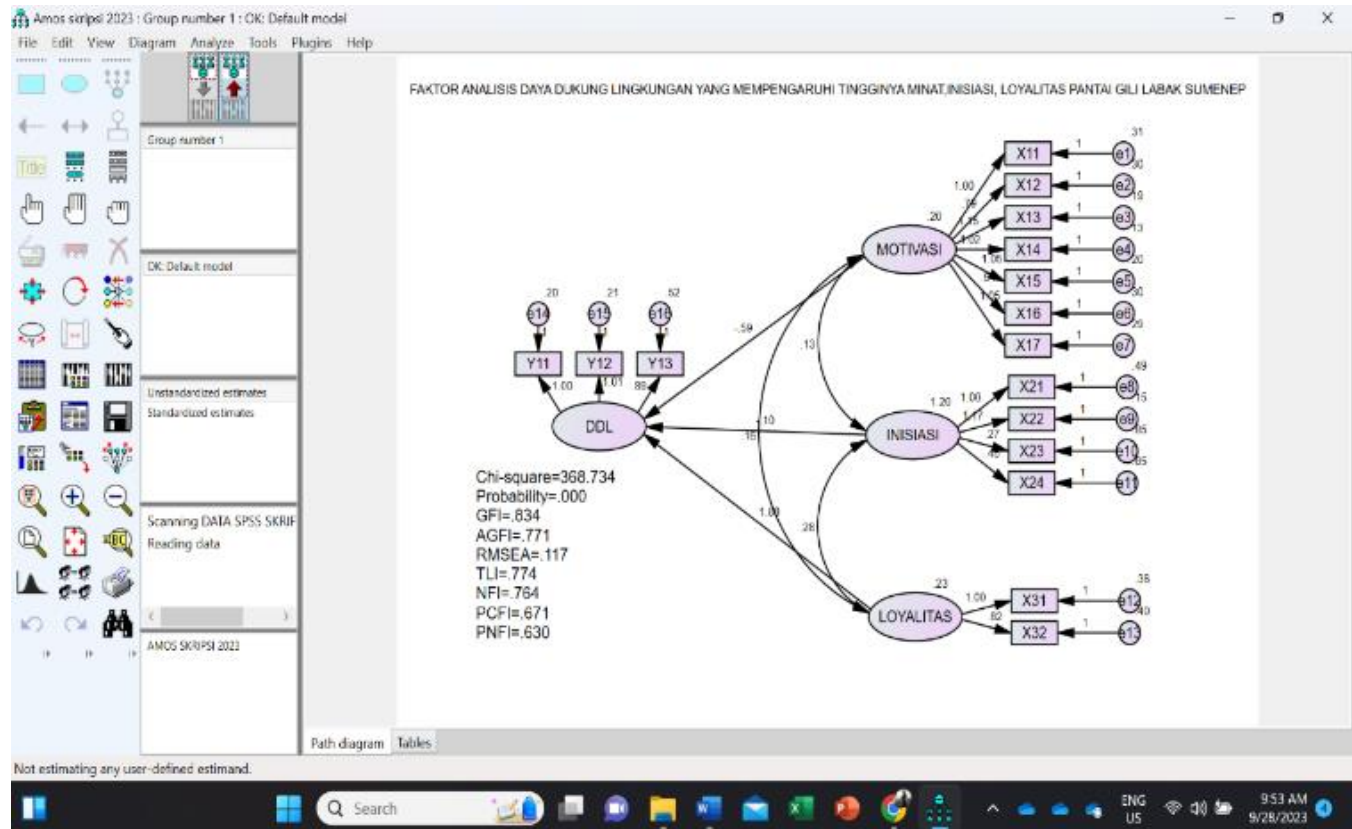


Figure 3. Final Chart of Simulation Modeling Factor Analysis of Environmental Carrying Capacity That Influences the High Interest, Initiation, and Loyalty of Gili Labak Beach, Sumenep.

Despite the insignificant influence of destination attractiveness, this research proves that the attractiveness of the cultural environment's carrying capacity still dominates the influence of the attractiveness of the natural environment's carrying capacity and the artificial environment's carrying capacity in shaping the attractiveness of tourist destinations in Sumenep Regency, indicated by the respective path coefficients. of 0.49, 0.36, and 0.26. These three values are significant at the 1 percent test level. Observing the dominant influence of cultural attractions compared to the influence of the other two attractions, to date the foundation of tourism which makes culture the soul of the Carrying Capacity of the Coastal Environment is still stable and has not been shifted.

The findings of this research also confirm the opinion which states that tourists who are satisfied after

their visit tend to visit again, at least to visit the destination (intention to revisit) that has satisfied them. The decision to visit and visit is a very complex process. Referring to Kotler, there are several stages that a person considers when purchasing products and services which include need recognition, information search, evaluation of alternatives, choice of alternatives, and post-purchase evaluation. In this research, the level of satisfaction that tourists perceive after visiting a destination is the fifth stage that will determine their decision to visit again. In the final stage, the researcher tested the measuring instrument. At this stage, the scale of the environmental carrying capacity of coastal areas is ready to be instilled in students.

This process is carried out to test the validity of the measuring instrument based on evidence from the test content and evidence based on internal structure.

Validity in this research is called construct validity, namely a type of validity that aims to test theoretical constructs with field data. This validity requires statistical analysis techniques (Azwar, 2012). This research uses confirmatory factor analysis (CFA) to test the validity of the entrepreneurial intention construct. This CFA analysis uses the help of Amos 23 software. CFA analysis is used to test whether these indicators are valid as measures of latent constructs (Azwar, 2012). CFA analysis is also used to see the suitability of the model in measuring environmental carrying capacity. The criteria for determining model fit are shown in Table 2.

**Result and Discussion**

Testing of the environmental carrying capacity measuring instrument begins with testing the content validity of the measuring instrument. The content validity test involved 4 (four) expert judgments. Content validity is used to select good and bad items. If assessed by 4 (four) experts or less, the I-CVI score must be 1.00. If there are six or more experts, the standard bias is more lenient, but the I-CVI score is no lower than 0.78 (Polit & Beck, 2006). Items that have very low I-CVI should be removed. In this research, according to Azwar (2010), for items in a scale, 7 scales are tested using CVI with the following formula:

$$V = s / (n * (c-1)) \tag{1}$$

- V = Aiken Item content validity coefficient
- S = Results of decreasing panelist assessment scores with the lowest validity score (rl-o)
- N = Number of panelists
- r = Image provided by panelists

**Table 3.** Environmental Carrying Capacity Scale for Coastal Areas (Indonesian Version).

Conformity Index	Early Models	Modified	Conformity Requirements	Information
Chi-Square	368.74, DF -119, obtained 145.461 greater than 128.201	111,748 Df = 104 obtained 128.80 greater than 111.74	Little value. Not important =p> 0.05	The Right Model
Possibility	0.266	0.28		
GFI	0.83	0.95	0.90	Fit
CFI	0.77	0.91	0.90	Fit
TLI	0.77	0.90	0.90	Fit
RMSE	0.11	0,01	to 08	Fit

Validity testing using confirmatory factor analysis (CFA) shows that this scale has high item validity and reliability values. The results of the analysis show that the environmental carrying capacity construct model for coastal areas is fit.

- c = highest validity score (4)
- lo = lowest validity value (1)

**Table 2.** Standard Compliance

Goodness of Fit Size	Cut value
Absolute fit index	
Chi-Square	<1301.395 (expected to be small)
GFI	> = 0.90 RMR
RMSE	<.08
Incremental Fit Index	
AGFI	> = .90
NFI	> = .90
CFI	> = .95
TLI	> = .95
Parsimony Conformity Index	
PNFI	.60 - .09
PGFI	0.50 - 1.00

Source: Hair et al., 2010; Ferdinand, 2014; Ghozali, 2014

The results of the analysis of the environmental carrying capacity scale for coastal areas are shown in Table 3. Table 3 shows that all items have an I-CVI value of 1.00 in all assessment aspects: hard work (Mujahadatu fil 'amal), competition (Fastabiquil khairot), transparency (As- sidqu wal-amanah) and responsible behavior (Al-itqonu fil' amal). Thus, it can be said that no items were eliminated in this content validity test.

*Confirmation Factor Analysis Results*

Next, all validated items were tested for construct validity using confirmatory factor analysis (CFA). CFA was used to carry out construction validation (Ghozali, 2014). The environmental carrying capacity scale for coastal areas is a one-dimensional measurement model with 17 items which are explained in Table 3.

*Analysis of Explanatory Factors on Environmental Carrying Capacity*

The environmental carrying capacity of coastal areas is described with a strong basis for forming indicators, a hypothetical model for this construct using

total item scores. Exploratory factor analysis was chosen as an additional analysis to explain a more specific picture of environmental carrying capacity. Exploratory factor analysis is used to determine a data structure that can explain the relationship between items that measure environmental carrying capacity.

Field (2010) suggests that if the extraction of components with an eigenvalue of more than 1 cannot reach 60%, then the next component with a minimum contribution of 5% can be included to achieve a total cumulative variance value of at least 60%. Then the extraction will be 4 components, where the fourth component contributes 12.421%, so the total cumulative variance is 62.582%. In the first component, based on factor loading, 3 items have a coefficient of more than 0.50, namely ability (0.706), creativity (0.684), and comfort (0.635), and are given the names of creative work factors. In the second component, based on factor loading, 2 items have a coefficient of more than 0.50, namely organization (0.8455) and dedication (0.674) given the name dedicated to the organization. In the third component, based on factor loading, 2 items have a coefficient of more than 0.50, namely life (0.697) and time (0.692) which are called the time management factor. In the fourth component, based on factor loadings, there is 1 item that has a coefficient of more than 0.50, namely destiny (0.846) which is called the destiny factor.

*Results of the Relationship Model of Interest, Initiation, Loyalty Towards Environmental Carrying Capacity*

All Components Of Interest, Initiation, And Loyalty have a significant positive effect on Environmental Carrying Capacity.

## Conclusion

The results of the adaptation of the environmental carrying capacity scale measuring instrument for coastal areas can be concluded to have a fairly good level of validity in terms of content validity and construct validity. The results of content validity using the CVI method show a high level of similarity. Meanwhile, the construct validity using the CFA method shows the results of the fit modification. The modification results show that the measure of the environmental carrying capacity of coastal areas consists of 16 valid items, namely. Apart from that, the reliability of the environmental carrying capacity of coastal areas is also quite good, so the results of repeated measurements will be relatively consistent. Then, from the correlation between the environmental carrying capacity of coastal areas and the Environmental Carrying Capacity of the 5 dimensions, overall the influence of all components of the environmental carrying capacity of coastal areas

(EKI) is in a positive direction on the Environmental Carrying Capacity (DDL) it can be concluded that it is higher. Then Motivation, Initiation, and loyalty will be higher.

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## Author Contributions

Conceptualization, A. W. P., A. G. R. D.; methodology, A. W. P.; validation, A. G. R. D. and A. W. P.; formal analysis, A. G. R. D.; investigation, A. W. P. and A. G. R. D.; resources, A. W. P. and A. G. R. D.; data curation, A. W. P.; writing—original draft preparation, A. G. R. D and A. W. P.; writing—review and editing, A. G. R. D.; visualization, and A. W. P. and A. G. R. D. All authors have read and agreed to the published version of the manuscript.

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## Conflicts of Interest

The authors declare no conflict of interest.

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