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Environmental Management Model for Tanjung Benoa Tourism Attraction

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ABSTRAK

Objek Wisata Tanjung Benoa merupakan obyek wisata unggulan di Kabupaten Badung. Meningkatnya jumlah wisatawan dan penduduk menyebabkan tekanan terhadap kawasan perairan sehingga menyebabkan penurunan kualitas lingkungan. Dalam pengelolaan pariwisata berkelanjutan, perlu dirumuskan model pengelolaan lingkungan yang dikembangkan berdasarkan kearifan lokal. Metode penelitian menggunakan pendekatan sistem Interpretative Structural Modeling (ISM) untuk merumuskan model pengelolaan lingkungan objek wisata Tanjung Benoa melalui wawancara dan diskusi kelompok terfokus yang melibatkan tokoh masyarakat dan para ahli untuk merumuskan elemen dan sub elemen. Elemen yang dipilih adalah (1) kendala utama, (2) tujuan program, (3) sektor masyarakat yang terdampak, (4) perubahan yang diinginkan, dan (5) perlunya pelaksanaan program pengendalian pencemaran air. Hasil dan temuan penelitian menunjukkan bahwa: (1) kendala utama dalam pengelolaan objek wisata di Tanjung Benoa adalah keterbatasan sumber daya manusia dan lemahnya dukungan dana; (2) Sasaran utama program adalah meningkatkan kualitas lingkungan, menjaga daya dukung lingkungan, mengurangi alih fungsi lahan, mengubah perilaku dan kesadaran lingkungan, serta mewujudkan pariwisata berkelanjutan; (3) Pengaruh utama adalah pemerintah; (4) Perubahan utama yang diinginkan adalah kebersihan lingkungan, berkurangnya pelanggaran lingkungan, terbentuknya kemitraan lingkungan, pariwisata berkelanjutan dan pengelolaan lingkungan, serta meningkatnya kesadaran dunia usaha dan masyarakat; (5) Kebutuhan dalam pelaksanaan program utama adalah ketersediaan anggaran. Model pengelolaan lingkungan yang direkomendasikan adalah pengelolaan yang dilaksanakan secara komprehensif yang melibatkan para pemangku kepentingan secara partisipatif.

***Kata kunci*:** Model, pengelolaan, lingkungan, pariwisata

ABSTRACT

Tanjung Benoa Tourism Object is a leading tourism object in Badung Regency. The increasing number of tourists and residents has caused pressure on the water area, resulting in a decline in environmental quality. In sustainable tourism management, it is necessary to formulate an environmental management model developed based on local wisdom. The research method uses the Interpretative Structural Modeling (ISM) system approach to formulate an environmental management model for Tanjung Benoa tourism objects through interviews and focus group discussions involving community leaders and experts to formulate elements and sub-elements. The elements selected are (1) main constraints, (2) program objectives, (3) affected community sectors, (4) desired changes, and (5) the need for implementation of water pollution control programs. The results and findings of the study indicate that: (1) the main constraints in managing tourism objects in Tanjung Benoa are limited human resources and weak financial support; (2) The main targets of the program are to improve environmental quality, maintain environmental carrying capacity, reduce land conversion, change environmental behavior and awareness, and realize sustainable tourism; (3) The main influence is the government; (4) The main changes desired are environmental cleanliness, reduced environmental violations, the formation of environmental partnerships, sustainable tourism and environmental management, and increased awareness of the business world and the community; (5) The need for implementing the main program is budget availability. The recommended environmental management model is management that is implemented comprehensively and involves stakeholders in a participatory manner.

***Keywords*:** Model, management, environment, tourism

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1. INTRODUCTION

As a tourism object that continues to grow and the number of tourists increases, population growth and the rapid development of tourism facilities create pressure on the environment in the Tanjung Benoa area which requires finding alternative solutions. To represent these problems, it is necessary to build an environmental management model for the Tanjung Benoa tourist attraction that is appropriate to regional conditions by involving community leaders and

experts who have competence through interviews and focus group discussions to formulate the elements and sub-elements needed for environmental and tourism management. sustainability at the Tanjung Benoa tourist attraction to produce an environmental management model for the Tanjung Benoa tourist attraction. The benefits of this research will provide a hierarchical description of which sub-elements of each element are the main causes of the success of the environmental management program that will be implemented. Apart from that, this research will formulate how the resulting sub-elements are able to structurally provide direction in program implementation. The results of this research provide comprehensive information from each desired element regarding what must be done according to conditions in the area concerned through sub-elements to support the desired environmental management model.

Greetings in compiling a model for environmental management in Tajung Benoa is a representation of a tourist attraction in its true form or real situation which is determined consciously and planned through a participatory process. Environmental management is a process of creating environmental balance (Sudipa et al., 2020) which will be implemented in realizing sustainable tourism in the Tanjung Benoa area. In environmental management, society is obliged to maintain, protect, improve and utilize its potential wisely for the benefit of society without ignoring environmental aspects (Basna et al., 2012).

Preparing environmental management models can be done by identifying parameters that will be interconnected with the model structure, such as climate, geography, geomorphology, water, soil, vegetation and human influence. Environmental management requires active community participation in it because the community is the main determinant of the success of environmental planning and management (Samadikun et al., 2012). In environmental management, community involvement is very necessary from the beginning of planning to program implementation through community empowerment (Kahpi, 2015).

There are four dimensions to studying management models. First, the external environment, namely political and governmental conditions, social culture, technology, economic conditions, various interest groups and policies regarding natural resource management. Second, motivation is seen as a unit of learning that has its own soul. Third, management capacity, namely the ability of the management institution to achieve its goals. Fourth, the performance of the management institution, namely the effectiveness of the institution in achieving its goals, efficient use of resources, sustainability of the institution in interacting with community groups in a participatory manner (Vipriyanti, 2017).

The model creation process can be carried out by developing individual knowledge of a problem as a whole taken from the discussion or analysis process. The Implementation Model was formulated using the Interpretative Structural Modeling (ISM) approach. According to Attri et al (2013). The combination of knowledge of the problem being analyzed with understanding of the problem is important in decision making. This knowledge is needed to communicate so as to produce the desired decisions (López-Sanz et al., 2021).

2. METHODS

2.1. Time of Research Location

The research was conducted at Tanjung Benoa tourist objects and attractions, South Kuta District, Badung Regency.

2.2. Data Analysis

This research uses a systems approach with the Interpretative Structural Modeling (ISM) method to formulate a model for environmental management of Tanjung Benoa tourist objects and attractions. This method can help to simplify a problem and can be used to identify contextual relationships between sub-elements. Several structural categories and idea categories that reflect contextual relationships between elements can be developed using ISM (Kanungo et al., 2009). In other words, ISM is a tool to help analyze complex decisions by grouping them and displaying them in a map. Interpretative Structural Modeling (ISM) is a mathematical model through comprehensive studies to describe complex system modeling techniques (Pridaswara, 2009).

In compiling the elements of the environmental management model for Tanjung Benoa tourist objects and attractions, this was done through discussions, interviews with figures, experts, actors and tourism activists in Tanjung Benoa. The sub-elements prepared by adoption were obtained through discussions, interviews with figures, experts, actors and tourism activists in Nusa Penida with the following steps:

1. Identify the elements of the environmental management system in Tanjung Benoa tourist objects and attractions. This activity can be carried out through research, brainstorming, interviews and focused discussions with key stakeholders. There are 3 elements out of 9 elements that will be selected, namely (1) needs, (2) constraints or problems, (3) possible changes, (4) goals, (5) benchmarks and indicators, (6) activities/activities carried out in the context of transformation, (7) actors or institutions involved, (8) segments of society affected; and (9) effectiveness of transformation.
2. Contextual relationships between elements. Contextual relationships between elements or sub-elements are determined according to the objectives of the model to be built. Sub elements come from input obtained through discussions and interviews with figures. experts, actors and tourism activists in Tanjung Benoa. The selected

sub-elements are relevant to existing conditions and in accordance with the model to be built.

3. Formation of the Structural Self Interaction Matrix (SSIM). This matrix uses four types of symbols to present the types of relationships that exist, namely:
   a. The V symbol indicates a contextual relationship between element Ei and element Ej or element 1 with element 2 and the next element but not vice versa.
   b. Symbol A to indicate the existence of a contextual relationship between element Ej and element Ei or element 2 with element 1, element 3 with element 1 and with the next element, but not vice versa.
   c. The symbol X indicates the existence of a reciprocal contextual relationship between element Ei and element Ej.
   d. The O symbol indicates that there is no contextual relationship between element Ei and element Ej.
4. Reachability Matrix (RM). This matrix is a binary matrix converted from SSIM.
5. Creating level partitioning.The elements are classified into different levels of the ISM structure to be formed.
6. Formation of a canonical matrix by grouping elements with the same level
7. Digraph through graphs that come from elements that are directly related to each other, and hierarchical levels.
8. Provide an explanation of the system elements and their relationship flow.
9. To test the results formulated in the model, the model formulation was tested by providing feedback to figures, experts, actors and tourism activists in Tanjung Benoa.

3. RESULTS AND DISCUSSION

The growing tourist attraction of Tanjung Benoa continues to experience pressure due to the massive growth in the development of tourism facilities and tourism supporting sectors. The environment is experiencing the impact of pressure caused by tourism development in Tanjung Benoa. To overcome the impacts that arise, it is necessary to formulate an environmental management model at the Tanjung Benoa Tourist Attraction. The elements chosen in analyzing the environmental management model at the Tanjung Benoa Tourist Attraction are the elements that play a dominant role in supporting the successful management of the Tanjung Benoa Tourist Attraction. Of the 9 elements in ISM, based on the results of discussions and interviews with figures, experts, actors and tourism activists in Tanjung Benoa, 5 elements were selected that had a dominant influence, namely (1) main obstacle elements, (2) elements program objectives, (3) affected community sectors, (4) desired changes and (5) elements of actors/institutions involved in the program to solve waste management problems (Mitchell, 2015). The development of this model will later be developed in the community for sustainable waste management (Septiawana et al., 2014).

3.1. Main Constraint Elements

From the results of discussions and interviews with figures, experts, actors and tourism activists in Tanjung Benoa regarding environmental management at the Tanjung Benoa Tourist Attraction, 9 sub-elements were obtained, namely:

B1. Public understanding of environmental management is still low.
B2. Awareness of entrepreneurs and the public is still low.
B3. Sanctions and enforcement are not yet firm.
B4. The implementation of the rules is still weak.
B5. Human resources are still limited both in quality and quantity.
B6. Coordination between institutions/agencies is still weak.
B7. The service system and prevention of environmental damage is still weak.
B8. Financial support is still weak.
B9. Mental attitude that is not yet optimal.

Expert assessment of the contextual relationship between the main constraint sub-elements using the V, A, still weak (8). This shows that the main obstacle in environmental management is encouraging the strengthening of human resources and providing financial support to create a system for preventing environmental damage and is supported by strengthening public understanding of environmental management, increasing awareness of entrepreneurs and the community which is still low, providing sanctions and taking firm action. , strengthening the application of regulations, strengthening coordination between institutions/agencies, and optimizing mental attitudes in environmental management.

No.	B1	B2	B3	B4	B5	B6	B7	B8	B9
B1		V	A	A	O	O	A	O	A
B2			V	V	A	O	A	O	X
B3				X	O	A	A	A	A
B4					A	X	A	A	O
B5						O	V	O	O
B6							A	O	A
B7								A	O
B8									O
B9									

Figure 1. Contextual Relationships Between Main Constraint Sub-Elements

Information of Figure 1:

1) The V symbol indicates that there is a contextual relationship between element B1 and element B2 and the next element B but not vice versa.
2) Symbol A to indicate the existence of a contextual relationship between element B2 and element B1, element B3 with element B1 and with the next element B, but not vice versa.

3) The symbol
4) The O symbol indicates that there is no contextual relationship between elements between element B1 and element B2 and the next element B.

Besides that, the sub-element of human resources is still limited (5) and financial support is still weak (8) based on Driver Power and Dependence being in sector IV (Independent), which means that this sub-element also has strong leverage and driving force against constraint elements. main. The sub-element of the service system and prevention of environmental damage is still weak (7) and also has a strong driving force against the main constraint elements but is less strong than the sub-element, human resources are still limited (5) and financial support is still weak (8). Sub elements (1) public understanding of environmental management is still low, (2) awareness of entrepreneurs and the public is still low, (3) sanctions and enforcement are not yet firm, (4) implementation of regulations is still weak, (6) coordination between institutions/agencies still weak, and (9) mental attitudes that are not yet optimal based on Driver Power and Dependence are in sector III (Linkages) which means that this sub-element is a sensitive and unstable sub-element that needs to be careful in supporting the main constraint elements in developing a management model environment at the Tanjung Benoa Tourist Attraction. Commitment from the government and tourism actors is also very much needed in creating and mobilizing in a sustainable and integrated manner various activities oriented towards transformation, especially developing and strengthening human resources and providing financial support in environmental management at the Tanjung Benoa Tourist Attraction (Figure 2).

The hierarchical model structure of the main constraints of the environmental management model in the Tanjung Benoa Tourist Attraction based on grouping is shown in Figure 3. The sub-elements at the highest level have a strong influence on the levels below. In developing an environmental management model at the Tanjung Benoa Tourist Attraction, especially in analyzing the main obstacles to environmental management, the emphasis must be on improving the quality of human resources and providing funding support in environmental management programs.

Improving the quality of human resources and providing financial support must be placed as the main key to supporting successful implementation in environmental management (Armadi et al., 2020). The human resources referred to are resources that come from the community as a participatory environmental management model involving multi-sectors starting from the government, local communities, non-governmental organizations, entrepreneurs and the world of education supported by clear funding sources (Sudipa et al., 2021).

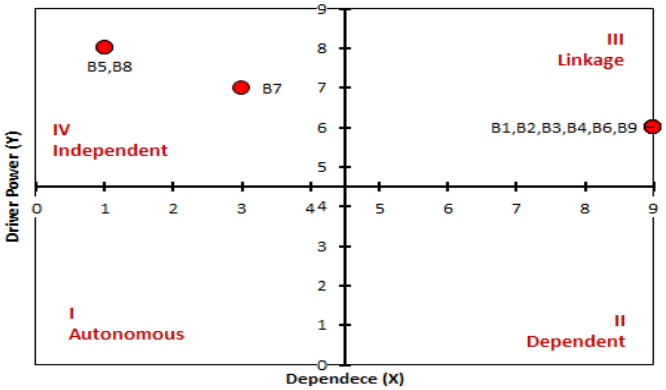

Figure 2. Quadrants of Contextual Relationships Between Main Constraint Sub-Elements

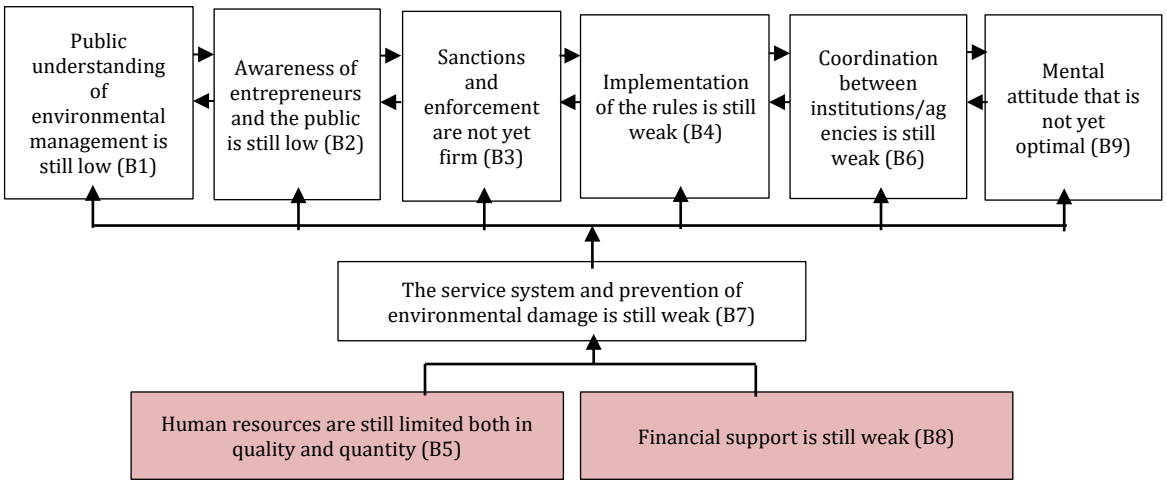

Figure 3. Structure of the Main Constraint Hierarchical Model

3.2. Elements of Program Objectives

From the results of discussions and interviews with figures, experts, actors and tourism activists in Tanjung Benoa regarding environmental management at the Tanjung Benoa Tourist Attraction, 9 sub-elements were obtained, namely:

G1. Increase investment enthusiasm.
G2. Improve the quality of the environment.
G3. Maintaining the carrying capacity of the environment.
G4. Reduce land conversion.
G5. Increase people's income.
G6. Reduce environmental management costs.
G7. Changing behavior and environmental awareness.
G8. Increase local revenue.
G9. Sustainable tourism.

Expert assessment of the contextual relationship between sub-elements of program objectives using the V, A, X and O approaches in Figure 4.4. The results of the analysis of the 9 sub-elements of program objectives show that the key sub-elements are improving the quality of the environment (2), maintaining the carrying capacity of the environment (3), reducing land conversion (4), changing behavior and environmental awareness (7), and sustainable tourism (9). Even though it is a key sub-element, this sub-element is based on Driver Power and Dependence in sector III (Linkage), which means that this sub-element is sensitive and unstable, so it needs to be careful in the application of developing an environmental management model at the Tanjung Benoa Tourist Attraction. The sub-elements of increasing investment enthusiasm (1), increasing community income (5), reducing environmental management costs (6), and increasing local original income (8) are non-independent sub-elements based on Driver Power and Dependence in sector II (Dependent), this element functions as a supporting element for the objectives of the environmental management program (Figure 5).

No.	G1	G2	G3	G4	G5	G6	G7	G8	G9
G1		A	A	O	V	O	A	V	A
G2			V	A	V	V	A	V	A
G3				X	V	V	A	V	X
G4					O	O	X	O	V
G5						O	O	V	A
G6							A	O	O
G7								O	X
G8									A
G9									

Figure 4. Contextual Relationships Between Sub-Elements of Program Objectives

Information of Figure 4:

1) The V symbol indicates that there is a contextual relationship between the G1 element and the G2 element and the next G element but not vice versa.
2) Symbol A to indicate the existence of a contextual relationship between element G2 and element G1, element G3 with element G1 and with the next element G, but not vice versa.
3) The symbol
4) The symbol O indicates that there is no contextual relationship between elements, between element G1 and element G2 and with the next element G.

The hierarchical model structure of program objectives in developing an environmental management model at the Tanjung Benoa Tourist Attraction based on grouping is shown in Figure 6. The sub-elements at the highest level have a strong influence on the levels below. In developing an environmental management model at the Tanjung Benoa Tourist Attraction, especially in analyzing the objectives of the environmental management program, the emphasis must be on improving the quality of the environment, maintaining the carrying capacity of the environment, reducing land conversion, changing behavior and environmental awareness, and sustainable tourism.

Implementing program objectives should be done carefully, because this is related to government regulations. The rapid growth of tourism has led to a decrease in environmental carrying capacity, land conversion and social conflict in Tanjung Benoa. For example, the coastal border and state land along the coast has almost been completely developed by investors and the public, even though according to regulations it is not allowed. This condition clearly reduces environmental quality, reduces the environmental carrying capacity and causes land conversion.

Implementing policies related to management program objectives should be carried out by involving cross-sectors such as government, local communities, entrepreneurs, traditional institutions, non-governmental organizations and environmental observers. The goal of the program is to manage the environment at the Tanjung Benoa Tourist Attraction. The institution being built is an institution that accommodates all stakeholders which ultimately aims to build sustainable tourism in Tanjung Benoa. The most likely institutional model is a coordinating agency/team.

3.3. Elements of Community Sectors Affected

From the results of discussions and interviews with figures, experts, actors and tourism activists in Tanjung Benoa regarding environmental management at the Tanjung Benoa Tourist Attraction, 11 sub-elements were obtained, namely:

C1. Government.
C2. Businessman.
C3. Non-governmental organization.
C4. Public.
C5. Students/students.
C6. Traditional institutions.
C7. Formal figure.
C8. Traveler.
C9. Youth and teenagers.
C10. College

C11. Environmentalist/volunteer

Expert assessment of the contextual relationships between sub-elements of the community sectors affected by the V, A, X and O approaches in Figure 7.

Information of Figure 7:

1) The V symbol indicates that there is a contextual relationship between element C1 and element C2 and the next C element but not vice versa.
2) Symbol A to indicate the existence of a contextual relationship between element C2 and element C1, element C3 with element C1 and with the next element C, but not vice versa.
3) The symbol
4) The O symbol indicates that there is no contextual relationship between elements, between element C1 and element C2 and with the next element C.

No.	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11
C1		V	V	V	V	V	V	V	V	V	V
C2			O	V	O	V	V	V	O	O	O
C3				V	O	V	V	O	V	A	X
C4					A	X	X	V	X	A	A
C5						V	V	O	X	X	A
C6							X	V	V	A	A
C7								A	X	A	A
C8									A	A	A
C9										X	A
C10											X
C11											

Figure 7. Contextual Relationships Between Affected Sub-Elements of the Community

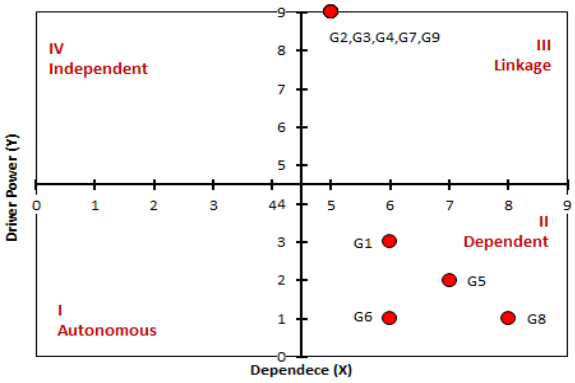

Figure 5. Quadrants of Contextual Relationships Between Sub-Elements of Program Objectives

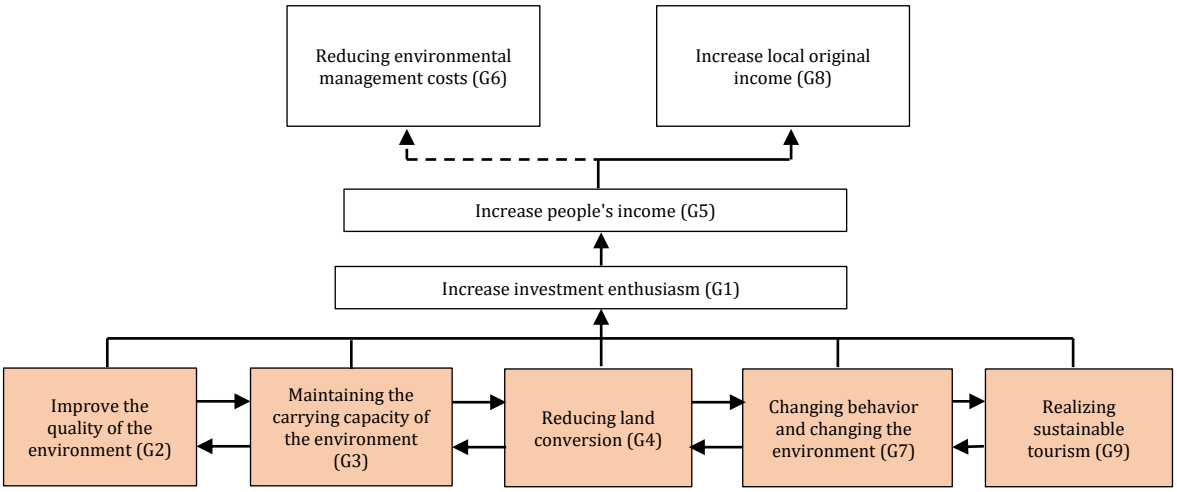

Figure 6. Structure of the Program Goal Hierarchy Model

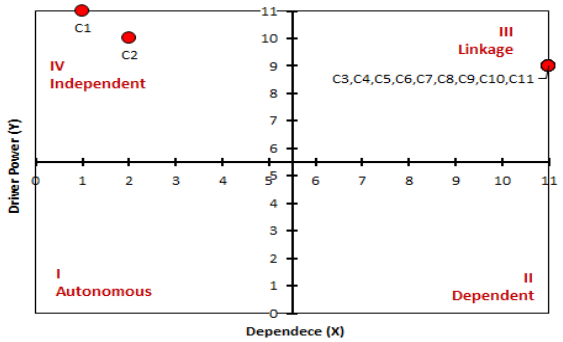

Figure 8. Quadrants of Contextual Relationships Between Sub-Elements of the Community

The results of the analysis of the 9 sub-elements of the community sector that are affected show that the key sub-element is the government (1) because based on Driver Power and Dependence it is in sector IV (Independent), which means that this sub-element also has strong leverage and driving power. towards the elements of the community sector that are affected. The entrepreneur sub-element (2) is also in sector IV (Independent), but the government sub-element is stronger (Figure 8).

Sub-elements of non-governmental organizations (3), community (4), students/students (5), traditional institutions (6), formal figures (7), tourists (8), youth and teenagers (9), tertiary institutions (10) , and environmental observers/volunteers (11) based on Driver Power and Dependence are in sector III (Linkage), which means that this sub-element is sensitive and unstable so care needs to be taken in the application of developing an environmental management model at the Tanjung Benoa Tourist Attraction.

The hierarchical model structure of the community sectors that are influenced in developing the environmental management model at the Tanjung Benoa Tourist Attraction based on grouping is shown in Figure 9. The sub-elements at the highest level have a strong influence on the levels below.

In developing an environmental management model at the Tanjung Benoa Tourist Attraction, especially in analyzing the sectors of society that are affected by environmental management, they are the government and entrepreneurs. However, the government's position is stronger and is the main driving force in developing an environmental management model at the Tanjung Benoa Tourist Attraction. The government in question is the Badung Regency Regional Government. The Badung Regency Regional Government must be the main motor and initiator in developing an environmental management model at the Tanjung Benoa Tourist Attraction, because the government holds regulations, policies, has human resources and has the authority to build institutions.

The environmental management model initiative began by taking formal and informal approaches with influential sectors of society and continued by establishing a formal institutional model as a form of commitment to managing the environment. The institutional model that will be built refers to government regulations that accommodate the participation of the government, community, non-governmental organizations, entrepreneurs, traditional institutions, etc.

3.4. Desired Change Elements

From the results of discussions and interviews with figures, experts, actors and tourism activists in Tanjung Benoa regarding environmental management at the Tanjung Benoa Tourist Attraction, 8 sub-elements were obtained, namely:

E1. Environmental cleanliness and health are maintained.
E2. Reduced environmental violations.
E3. Environmental partnerships are formed.
E4. Sustainable tourism and environmental management.
E5. Reduced environmental management operational costs.
E6. Increased awareness of entrepreneurs and society.
E7. Increasing investment.
E8. Increase in local revenue.

Expert assessment of the contextual relationship between sub-elements of desired change using the V, A, environmental violations (2), forming environmental partnerships (3), sustainable tourism and environmental management (4), increasing awareness of entrepreneurs and the community (6). Even though it is a key sub-element, this sub-element is based on Driver Power and Dependence in sector III (Linkage), which means that this sub-element is sensitive and unstable, so it needs to be careful in the application of developing an environmental management model at the Tanjung Benoa Tourist Attraction. Meanwhile, the sub-elements increasing investment enthusiasm, reducing operational costs for environmental management (5), increasing investment (7), and increasing local original income (8) are non-independent sub-elements based on Driver Power and Dependence in sector II (Dependent), this element functions as a supporting element for environmental management program objectives (Figure 11).

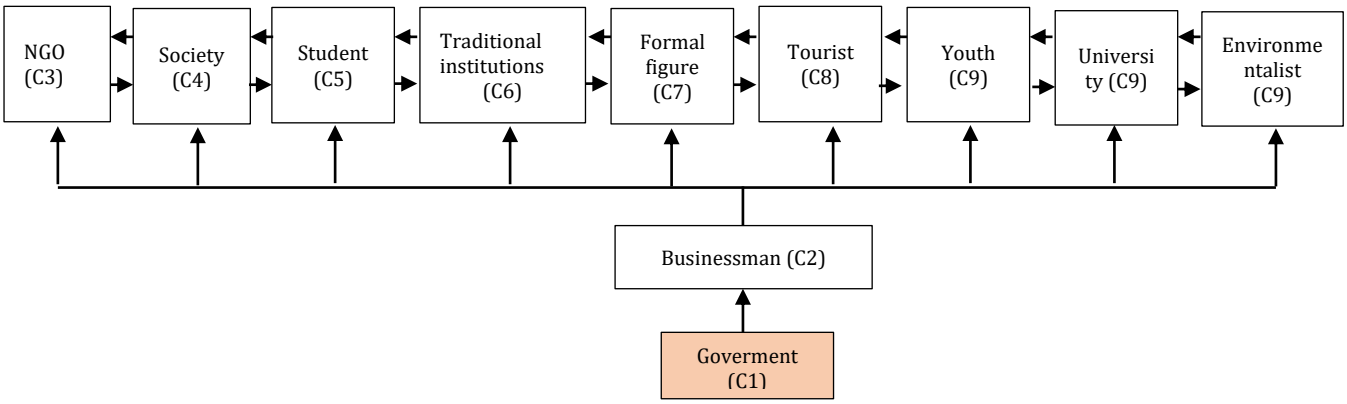

Figure 9. Hierarchical Model Structure of Affected Sectors of Society

No.	E1	E2	E3	E4	E5	E6	E7	E8
E1		X	A	X	O	A	V	V
E2			A	A	O	X	V	O
E3				A	O	A	V	O
E4					V	V	V	V
E5						O	O	O
E6							V	V
E7								V
E8								

Figure 10. Contextual Relationships Between Sub-Elements of Desired Change

Information of Figure 10:

1) The V symbol indicates that there is a contextual relationship between element E1 and element E2 and the next element E but not vice versa.
2) Symbol A to indicate the existence of a contextual relationship between element E2 and element E1, element E3 with element E1 and with the next element E, but not vice versa.
3) The symbol
4) The symbol O to indicate that there is no contextual relationship between elements between element E1 and element E2 and with the next element E.

The hierarchical model structure of the community sectors that are influenced in developing the environmental management model at the Tanjung Benoa Tourist Attraction based on grouping is shown in Figure 12. The sub-elements at the highest level have a strong influence on the levels below.

In preparing the environmental management model at the Tanjung Benoa Tourist Attraction, especially in analyzing the desired changes, environmental management focuses on environmental cleanliness and health, reducing environmental violations, forming environmental partnerships, sustainable tourism and environmental management, increasing awareness of entrepreneurs and the community, but in Its application is carried out carefully because this sub-element is sensitive and unstable.

The main activities carried out are creating changes and increasing collective awareness of a clean and healthy environment, reducing the environment, establishing partnerships between stakeholders and managing the environment sustainably. The key sub-elements of the desired elements of change are maintaining environmental cleanliness and health (1), reducing environmental violations (2), forming environmental partnerships (3), sustainable tourism and environmental management (4), increasing awareness of entrepreneurs and the public (6), can be used as a mission in establishing environmental management institutions at the Tanjung Benoa Tourist Attraction. These sub-elements need to be discussed further with cross-sectors to reach mutual agreement.

3.5. Elements of the Need for Implementing a Water Pollution Control Program

From the results of discussions and interviews with figures, experts, actors and activists of non-governmental organizations in Tanjung Benoa regarding the elements needed to implement a water pollution control program in Tanjung Benoa waters, 4 sub-elements were obtained, namely:

N1 Repair of sanitation facilities and IPAL
N2 Budget Availability
N3 Community Participation
N4 Coordination between related technical agencies

Assessment of figures, experts, actors and activists of non-governmental organizations in Tanjung Benoa regarding the contextual relationship between sub-elements of the community sector affected by V, A, shows that the key sub element is Budget Availability (N2). This shows that the need to implement a water pollution control program in Tanjung Benoa Waters must be supported by the availability of a budget to manage the impact of water pollution in Tanjung Benoa Waters. Budget availability is needed to prepare a blueprint/master plan for controlling pollution in Tanjung Benoa waters, create a set of regulations which can be in the form of regional regulations or regent regulations in the law enforcement process (reward and punishment), improve governance for handling household waste, business waste and handling of waste. environmentally friendly agriculture.

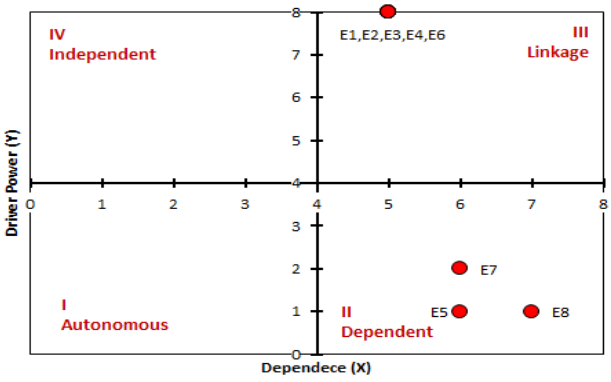

Figure 11. Quadrant of Contextual Relationships Between Sub Elements of the Desired Change

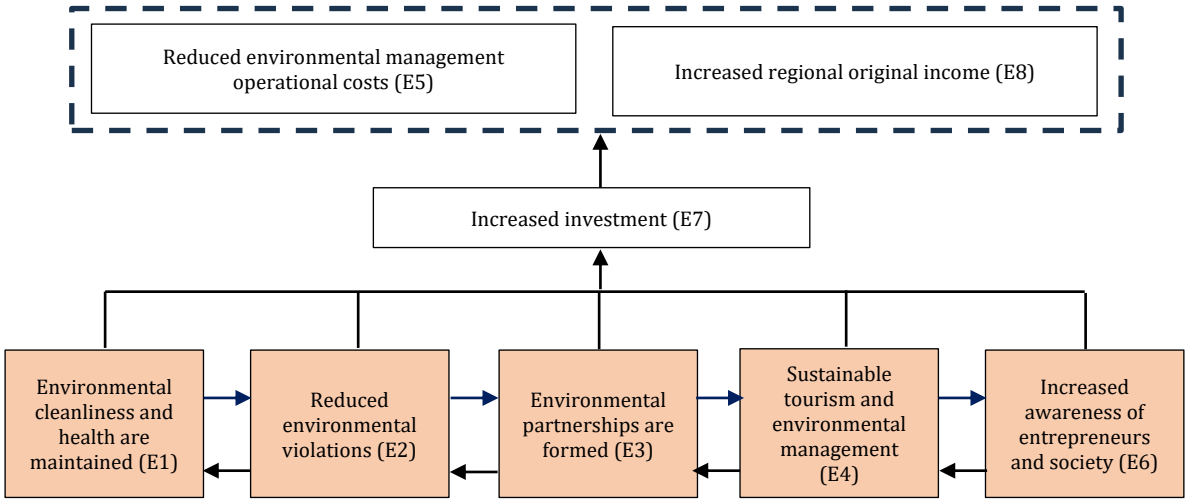

Figure 12. Structure of the Desired Change Hierarchy Model

No.	N1	N2	N3	N4
N1		A	V	V
N2			O	V
N3				V
N4				

Figure 13. Contextual Relationships Between Sub-Elements of Program Implementation Requirements

Information of Figure 13:

1) The V symbol indicates that there is a contextual relationship between element N1 and element N2 and the next N element but not vice versa.
2) Symbol A to indicate the existence of a contextual relationship between element N2 and element N1, element N3 with element N1 and with the next N element, but not vice versa.
3) The symbol
4) The symbol O indicates that there is no contextual relationship between elements between element N1 and element N2 and with the next N element.

Apart from that, the Budget Availability (N2) sub-element, based on Driver Power and Dependence, is in sector IV (Independent), which means that this sub-element also has strong leverage and driving power towards the elements that require the implementation of the water pollution control program in Tanjung Waters. Benoa. The Budget Availability (N2) sub-element has a very important role in controlling water pollution in Tanjung Benoa Waters. The sub-element of improving sanitation facilities and WWTPs (N1) has a fairly strong driving force towards the element of the need for implementing the water pollution control program in Tanjung Benoa Waters, but is less strong than the sub-element Budget Availability (N2), because the sub-element of repairing sanitation facilities and WWTPs (N1) based on Driver Power and Dependence is in sector III (Linkages) which means that this sub-element is a sensitive and unstable sub-element that needs to be careful in supporting the necessary elements for implementing the water pollution control program in Tanjung Benoa Waters in developing a pollution control model in the waters of Tanjung Benoa. The Community Participation sub-element (N3) and the Coordination sub-element between related technical agencies (N4) because based on Driver Power and Dependence are in sector II (Dependent) are sub-elements that are not independent and have little influence on the elements required for implementing the water pollution control program in Tanjung Benoa Waters (Figure 14).

The hierarchical model structure of the needs for implementing the water pollution control program in Tanjung Benoa Waters in developing a pollution control model for Tanjung Benoa Waters based on the groupings is shown in Figure 15. The sub-elements at the highest level have a strong influence on the levels below. Hierarchically, the sub-element Budget Availability is the strongest driving force in controlling pollution in Tanjung Benoa Waters, then next the sub-element Improvement of sanitation facilities and WWTPs has quite a strong driving force (third level), then the sub-element Community Participation and Coordination between related technical agencies is at the second and first levels, which means that this sub-element is hierarchically the one that has the smallest influence on controlling water pollution in Tanjung Benoa Waters.

The hierarchy of sub-elements of the need for implementing a water pollution control program in Tanjung Benoa Waters can be used as a basis for preparing plans for controlling water pollution in Tanjung Benoa Waters.

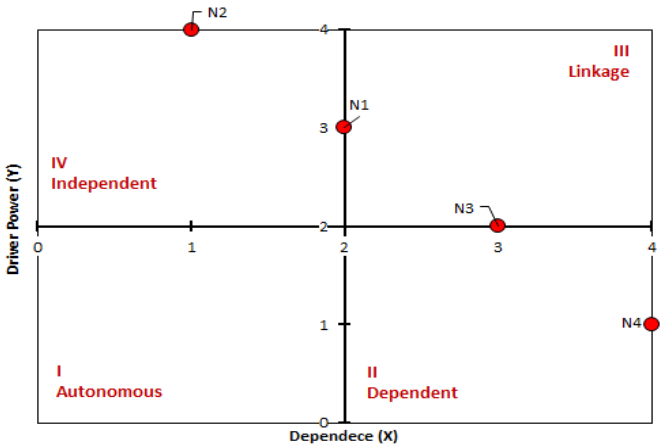

Figure 14. Contextual Relationships Between Sub-Elements of Program Implementation Requirements

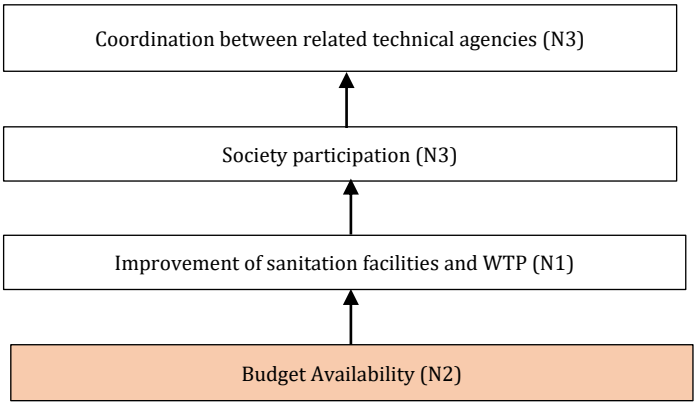

Figure 15. Structure of the Hierarchical Model for Sub-Elements of Program Implementation Needs

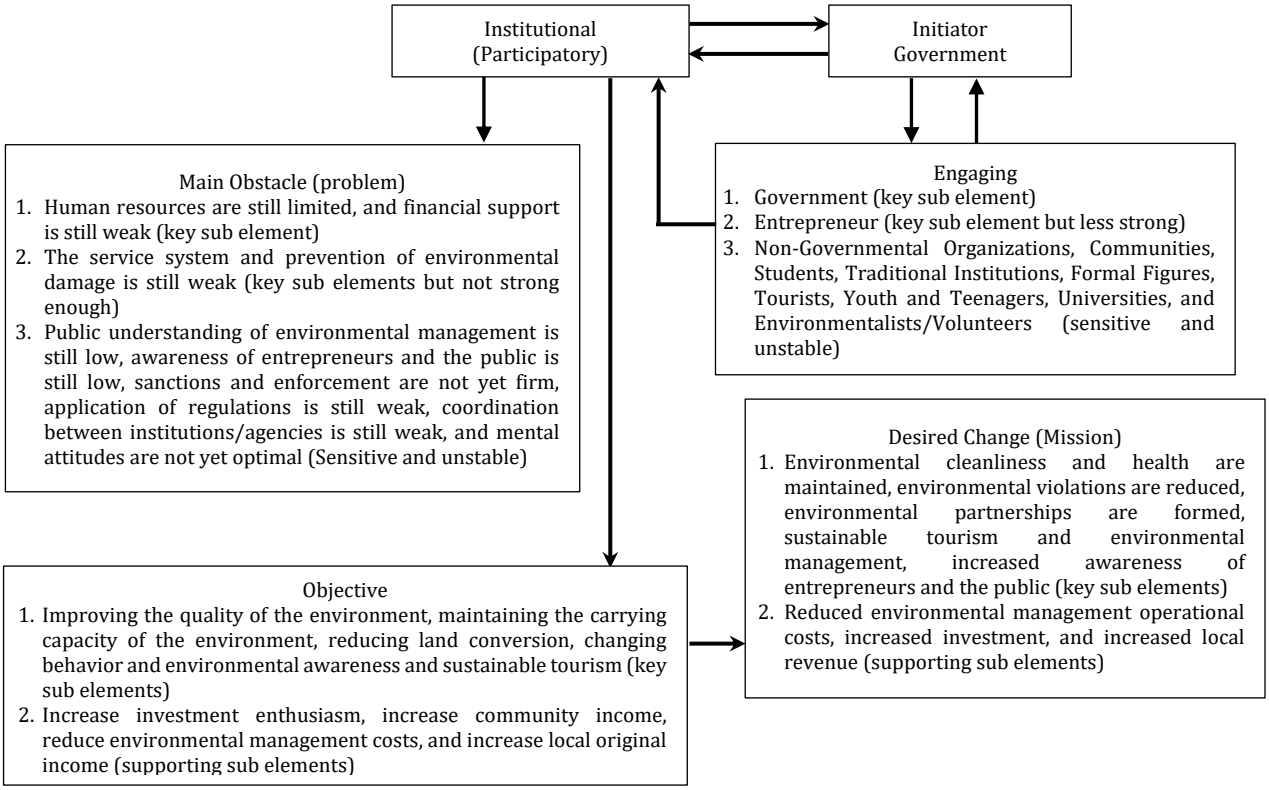

Figure 16. Environmental Management Model at Tanjung Benoa Tourist Attraction

Based on the key elements and sub-elements, a description of the environmental management model at Tanjung Benoa Tourist attraction can be formulated as shown in Figure 16. The environmental

management model at Tanjung Benoa Tourist attraction was formed based on the government's initiative by involving all stakeholders as representatives of the Tanjung Benoa community and involving elements others such as non-governmental organizations and universities. In environmental management, institutions must be formed that specifically handle the environment and tourism in Tanjung Benoa with the government as the initiator and formed in a participatory manner to reduce environmental damage (Agustiningsih et al., 2012).

The Tanjung Benoa tourist attraction management model from the results of the analysis above is recommended using an institution or team that allows for cross-sector involvement, namely the Tanjung Benoa Tourist Attraction Management Coordination Team with sections formed as operations in the field with innovations that can increase capacity. tourism (Rosadi et al., 2016). The reason the Tanjung Benoa Tourist Attraction Management Coordination Team was chosen as the institution for managing tourism and the environment in the Tourism Area by the stakeholders, is because the Tanjung Benoa Tourist Attraction Management Coordination Team is flexible and can be managed professionally using the Tanjung Benoa community who are experts in their fields who can sit in as chairman or other section (Dawud et al., 2016). The Tanjung Benoa Tourism Attraction Management Coordination Team can also manage finances directly and can obtain funding from the APBD, APBN as well as funding from collaboration with domestic and foreign institutions. Only part of the funds obtained from tourism and environmental management in Tanjung Benoa are deposited and the rest can be managed independently for the purposes of developing the Tanjung Benoa Tourist Attraction in accordance with applicable laws and regulations (Yohanes et al., 2019).

In carrying out environmental and tourism management functions, institutions that are built must recognize the main obstacles or problems faced as follows:

1. Human resources are still limited and financial support is still weak (key sub element).
2. The service system and prevention of environmental damage is still weak (key sub elements but not strong enough).
3. Public understanding of environmental management is still low, awareness of entrepreneurs and the public is still low, sanctions and law enforcement are not yet firm, implementation of regulations is still weak, coordination between agencies/institutions is still weak, and mental attitudes are not good. not optimal (sensitive and unstable).

This main obstacle or problem must be overcome by strengthening institutions, strengthening human resources and sources of financial support from the Badung Regency Regional Government or institutions that are formed independently to fund themselves with funding sources from the results of tourism management to increase local revenue (Arnop et al. ., 2019). Strengthening community understanding by conducting outreach training, coaching and mentoring, increasing coordination between regional organizations in enforcing regulations and taking action against environmental violations (Laapo et al., 2017). The objectives of establishing an environmental and tourism management institution are:

1. Improving the quality of the environment, maintaining the carrying capacity of the environment, reducing land conversion, changing behavior and environmental awareness and sustainable tourism (sub key elements).
2. Increase enthusiasm for investment, increase community income, reduce environmental management costs, and increase local original income (supporting sub-elements).

The main obstacles or problems faced, and these objectives become the basis for formulating programs or activities to answer the problems faced in the field. In its implementation, it involves cross-sectors in a participatory manner (Safrina, 2015) resulting in the following changes:

1. Environmental cleanliness and health are maintained, environmental violations are reduced, environmental partnerships, tourism and environmental management are sustainable, increased awareness of entrepreneurs and the community (key sub elements)
2. Reduce operational costs for environmental management, increase investment, and increase local revenue (supporting sub-elements).

4. CONCLUSION

The research results show that: (1) the main obstacles in managing tourist attractions in Tanjung Benoa are limited human resources and weak financial support; (2) The main objective of the program is to improve the quality of the environment, maintain the carrying capacity of the environment, reduce land conversion, change behavior and environmental awareness, and realize sustainable tourism; (3) The main influence in managing the Tanjung Benoa tourist attraction is the government; (4) The main changes desired are environmental cleanliness, reduced environmental violations, the formation of environmental partnerships, sustainable tourism and environmental management, and increased awareness of entrepreneurs and the public; (5) The need for implementing the main program is budget availability. The environmental management model recommended in Tanjung Benoa is implemented comprehensively, resulting in integrated management involving communities affected by the environment, management and tourism. The representation of environmental management at the Tanjung Benoa tourist attraction is to form an institution that specifically handles the environment and tourism of Tanjung Benoa with the government as the initiator and is formed in a

participatory manner in managing the environment at Tanjung Benoa tourist objects and attractions.

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