

Institutional Relationship Model to Realize a Sustainable Tourism Management in Pulau Merah Banyuwangi

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Abstract

Pulau Merah Beach must have sustainable tourism management that involves many institutions in the regional area as decision-makers and controls the regional plan. This research aims to analyze the institutional sector for tourism management on Pulau Merah Beach to support sustainability. Data were obtained through interviews with the Head of BAPPEDA, the Head of the Culture and Tourism Office, Spatial Planning Practitioners, Environmental Experts, and Local Communities. Data then analyzed with Interpretive Structural Modeling (ISM). There are four elements used to measure the institutional tourism management in Pulau Merah Beach, i.e. (1) elements of institutional (20 sub-elements); (2) elements of institutional problems (12 sub-elements); (3) elements of expected goals (11 sub-elements); (4) elements of the required program (11 sub-elements). The results of the analysis conducted show that DISBUDPAR is an institution with a role and authority in regulating tourism on Pulau Merah Beach, but it requires cooperation with other agencies to achieve sustainable management. The expected goals of tourism management in Pulau Merah Beach are sustainable, integrated, synergy, efficient, and sufficient, and firm law enforcement. However, there is no clear SOP between institutions. So, it can lead to a lack of integration between institutions and the emergence of unclear standards and measuring instruments. To achieve goals and resolve existing problems, designing several programs is required, such as forming a specific institution that handles the tourism management of Pulau Merah Beach, evaluating policies, and integrating tourism management's technical guidelines in the Pulau Merah Beach Area. If each key point can be optimized, it will be possible to realize sustainable tourism management on Pulau Merah Beach Banyuwangi.

Keywords: DISBUDPAR, institution, interpretive structural modelling, sustainable tourism.

INTRODUCTION

Tourism is one of the sectors that significantly influences the economy [1] and can continue developing [2]. The development of tourism can encourage a region's economy because it has a close relationship with economic growth, both economic growth due to the growth of tourism and vice versa. Thus, it is said that tourism is a bidirectional sector [3,4]. So, it is possible to have the tourism sector as the leading sector in a specific region.

Banyuwangi Regency has a dual role as a conservation and tourism area. It encourages local governments to create an integrated and comprehensive system between various sectors, institutions, and authorities to create a well formulate and manage Banyuwangi Regency. Based on Regulation Number 32 the Year 2009, environmental management includes structuring, utilization, development, maintenance and restoration, environmental supervision, and control. Pulau Merah is one of the tourism destinations listed on WPP III in Banyuwangi Regency. Pulau Merah tourism area is classified as marine tourism located in a coastal area.

Nevertheless, the problem then arises when a tourism destination has many visitors and causes ecosystem, social and economic problems. It may arise caused by the lack of regional planning, weak human resources, and small profits [5-8]. Local and regional institutions' role is necessary to overcome the existing and future problems in the tourism sector. The institution has a role in regulating policies and has better control in regional planning, significantly increasing tourism destinations innovation to become sustainable tourism [9].

The increase in the number of tourists heading to Pulau Merah causes an increase in the number of buildings, reduced land cover, increased waste generation, environmental pollution, traffic congestion, and reduced aesthetics due to the slum environment. If this condition is not handled, it will decline the image and competitiveness of Pulau Merah Beach as a mainstay tourism area in Banyuwangi Regency. Thus, there is a need for a form of synergy between existing institutions in the Banyuwangi Regency, both formal and informal, which are directly related to the development and management of tourism [10]. To show the hierarchy of inter-institutional relationships in order to achieve sustainable tourism management on Pulau Merah Beach, we used Interpretive Structural Modeling (ISM).

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Interpretive Structure Modelling (ISM) is a form of analysis that can identify structures and hierarchies between groups based on the relationships that occur in a complex system with the variables that can define the problems that occur [11,12]. A research showed that a study using ISM can compile a hierarchical structure of 16 support systems and shows that the scarcity of natural resources is the main key to realizing the tourist destination of Borobudur Temple as green tourism [13]. ISM is widely used primarily to identify driving and inhibiting factors in tourist destination management [14,15,16]. Therefore, the purpose of this study is to analyze the institutional sector for tourism management on Pulau Merah Beach to support sustainability. So, it is hoped that by using ISM, the hierarchical structure of the institutions related to tourism development and management in Banyuwangi Regency can be identified.

MATERIAL AND METHOD

Study Site

Pulau Merah Beach is located in Pancer, Banyuwangi Regency, approximately 67 km from downtown of Banyuwangi. It has a 3 km long coastline with white, red, and fine sand. Not far from the shore, there was a hill with a height of approximately 300 m, and it has become a characteristic and icon of Pulau Merah.



Figure 1. Pulau Merah Beach

Data Collection

Primary data in this study were obtained by exploring the opinions of respondents with structured interviews using questionnaires. Respondents in this study were selected based on their knowledge of tourism management and regional development in the Banyuwangi Regency. So the respondents of this research are the Head of Bappeda, the Head of the Culture and Tourism Office, Spatial Planning Practitioners, Environmental Experts, and Local Communities. In addition, secondary data used

comes from tourism planning documents owned by Banyuwangi Regency. The elements that interviewed to the respondents include: 1) elements of institutional (20 sub-elements); 2) elements of institutional constraints (12 sub-elements); 3) elements of expected goals (11 sub-elements); 4) elements of the required program (11 sub-elements).

Data Analysis

Interpretive Structural Modeling (ISM) is used to produce a model of institutional relations related to tourism in Pulau Merah Banyuwangi. ISM is an interactive method to identify and clarify the relationship between specific variables in an unclear or complicated to understand problem [10,19]. In this method, several elements that directly or indirectly related were arranged based on a systematic model in the form of images and sentences [21,22,23].

Brainstorming with experts is carried out first to determine the elements and sub-elements in managing tourism institutions. Then the ISM Stages will be divided into two parts, namely the arrangement of the hierarchy and classification of sub-elements [24]. The basic principle is identifying structures within a system that provide high-value benefits to formulate the system effectively and for better decision-making. Analysis using Interpretive Structural Models (ISM) has several stages [12,13,25], namely:

1. **Identification of elements;** Elements were obtained from in-depth interviews with several experts, including the Head of Bappeda, Head of the Culture and Tourism Office, Spatial Planning Practitioners, Environmental Experts, and Local Communities. The elements that are considered to play a role in the development of sustainable tourism management on Pulau Merah Beach are (1) elements of institutional consisting of 20 sub-elements, (2) elements of institutional problems, which consist of 12-sub elements, (3) elements of expected goal, which consists of 11 sub-elements, and (4) elements of the expected program, which consist of 11 sub-elements. Institutions, both formal and informal, have a crucial role in the development of sustainable tourism [10].
2. **Structure Self-Interaction Matrix (SSIM);** This matrix shows the relationship between the intermediaries in the system. This

matrix is commonly referred to as the VAXO matrix because of these symbols. V means that factor in row table will influence factor in column table, A means that factor in column table will influence factor in row table, X means that there is a bidirectional relationship, and O means that there is no relation between the factors.

3. **Reachability matrix;** This matrix was arranged by converted SSIM to a binary number (1 or 0) per transformation rules.
4. **Matrix of driver power-dependent;** In this matrix, the elements will be grouped into four categories based on its value of driving power and dependence. The value of driving power for each enabler is the total number of the enabler (including itself), which may help to attain it. Meanwhile, the value of dependence for each enabler is the total number of the enablers (including itself), which may help in attaining it. In the power level management diagram, there are four clusters [25,26], namely:
 - (a) **autonomous cluster**, factors that have weak driving power and dependence or do not depend on other factors
 - (b) **dependent cluster**, a factor that has a weak driving force with a strong dependence so that it cannot influence other factors but can be influenced by related factors
 - (c) **linkage cluster**, this factor has a strong driving force and dependence, so it is unstable and can have an impact on factors other
 - (d) **cluster driving factor**, a strong factor on the driving force with a weak dependence, thus it can affect other factors.
5. **Converting into an ISM diagram;** The structural model from the final reachability matrix can be generated through the vertices or nodes and lines of edges.

RESULT AND DISCUSSION

The institution is an essential element in sustainable tourism management, especially in Pulau Merah Beach. It plays a role in determining the direction, policies, strategies, and programs of tourism development that must be in harmony and synergy with national tourism development policies. Based on a previous study [16] and expert opinion, then four elements were selected to measure the institutional management of tourism in Pulau Merah Beach, i.e. (1) elements

of institutional (20 sub-elements); (2) elements of institutional constraints (12 sub-elements); (3) elements of expected goals (11 sub-elements); (4) elements of the required program (11 sub-elements).

Elements of Institutional in the management of Pulau Merah Beach Tourism

Identification of institutional showed that there are 20 sub-elements. The first step in ISM analysis is to arrange a structure self-interaction matrix (SSIM) from sub element in elements of institutional and are compared, then marked with four symbols (V, A, X, O), which can be seen in Table 1.

Table 1. Elements of institutional Structure self-interaction matrix (SSIM)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	X	X	X	X	X	X	X	X	X	X	X	X	V	X	X	X	X	X	X	X
2		X	X	X	X	X	X	X	X	X	X	X	A	A	X	A	X	X	X	X
3			X	X	A	X	X	X	X	V	V	V	V	V	X	X	X	V	X	X
4				X	A	A	X	X	X	V	V	V	X	X	X	X	X	X	X	X
5					X	X	O	X	X	O	O	X	O	X	X	X	X	X	X	X
6						X	V	V	V	V	V	X	X	V	X	V	V	X	X	X
7							O	X	X	X	X	X	X	V	X	X	X	X	X	X
8								X	X	X	A	X	X	X	V	A	X	X	X	X
9									X	X	X	A	X	X	X	X	X	X	X	X
10										X	X	X	X	A	X	X	X	X	X	X
11											X	X	X	X	V	A	V	X	X	X
12												X	X	X	V	X	X	X	X	X
13													X	X	X	X	X	X	X	X
14														X	X	X	X	X	X	X
15															X	X	X	X	X	X
16																V	V	X	O	
17																	X	X	V	
18																		A	V	
19																			O	
20																				X

Description:

- 1) Department of culture and tourism (DISBUDPAR)
- 2) Police
- 3) Department of Spatial Planning and Agrarian Affair
- 4) Department of Traffic and Transportation (DLAJ)
- 5) Department of Building and Settlement Planning
- 6) Department of Regional Planning and Development (BAPPEDA)
- 7) Integrated Licensing Office
- 8) District Government
- 9) East Java Provincial Government
- 10) Village government
- 11) Municipal Police (SATPOL PP)
- 12) Association of Indonesia Hotel and Restaurant (PHRI)
- 13) Non-Governmental Organizations (NGOs)
- 14) State Forest Enterprise (Perhutani)
- 15) Association of Indonesian travel agencies (ASITA)
- 16) Village Consultative Office (BPD)
- 17) Department of Environment
- 18) Cultural Community
- 19) Central Government
- 20) Bank

Based on Table 1, the majority of the sub-elements matrix consists of symbol X, which means that these sub-elements influence one another (bidirectional). Then, from the SSIM results, a reachability matrix was compiled, which can be seen in Table 2. After identifying the reachability matrix, each of these sub-elements of institutional is then arranged in a matrix of power and dependent drivers (Fig. 2).

Table 2. Reachability matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DP	RANK	
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20	1	
2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	1	1	1	1	17	4
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	2
4	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	17	4
5	1	1	1	1	1	1	1	0	1	1	1	0	0	1	0	1	1	1	1	1	1	16	5
6	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	19	2
7	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	18	3
8	1	1	1	1	1	0	0	1	1	1	1	0	1	1	1	1	1	0	1	1	1	15	6
9	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	19	2
10	1	1	1	1	1	1	0	1	1	0	1	0	0	1	1	1	0	1	1	1	1	15	6
11	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	17	4
12	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	5
13	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	5
14	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	2
15	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	5
16	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	15	6
17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	17	4
18	1	1	0	1	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	15	6
19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	2
20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	16	5
DEPT	19	20	14	18	16	10	17	16	19	20	17	16	16	18	18	15	17	19	18				
RANK	2	1	7	3	5	8	4	5	2	1	4	5	5	3	3	6	4	2	3	3			

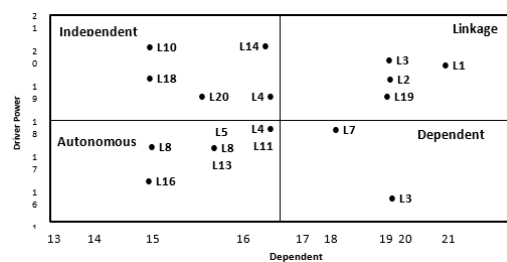


Figure 2. Matrix of Driver Power-Dependent (Elements of Institutions)

Description:

Autonomous sector (7 sub-elements)

- 1) Police (L2)
- 2) Department of Building and Settlement Planning (L5)
- 3) Municipal Police (SATPOL PP) (L11)
- 4) Association of Indonesia Hotel and Restaurant (PHRI) (L12)
- 5) Non-Governmental Organizations (NGOs) (L13)
- 6) Village Consultative Office (BPD) (L16)
- 7) Department of Environment (DLH) (L17)

Dependent sector (2 sub-elements)

- 1) Department of Spatial Planning and Agrarian Affair (DTRP) (L3)
- 2) Integrated Licensing Office (BPT) (L7)

Linkage sector (4 sub-elements)

- 1) Department of Culture and Tourism (DISBUDPAR) (L1)
- 2) Police (L2)
- 3) East Java Provincial Government (L9)
- 4) Central Government (L19)

Independent sector (7 sub-elements)

- 1) Department of Traffic and Transportation (DLLAJ) (L4)
- 2) Department of Regional Planning and Development (BAPPEDA) (L6)
- 3) Village Government (L10)
- 4) State Forest Enterprise (Perhutani) (L14)
- 5) Association of Indonesian travel agencies (ASITA) (L15)
- 6) Cultural Community (L18)
- 7) Bank (L20)

The autonomous sector has a low driving force and a low level of dependence, so they do not depend on other sub-elements. The dependent sector has a low thrust and very dependent on other institutions. It also can not encourage other institutions (their position is weak in tourism management in the Pulau Merah Beach).

The linkage of the institutions' sector has excellent potential if appropriately managed

because they have a strong thrust but still have a high level of dependence on institutions. Institutions in the independent sector do not have a robust hierarchical relationship but have a high thrust in the tourism management system. The results of previous research [24] showed that the government usually operates independently. However, it strengthens, empowers, and benefiting each other if there are common goals and interests.

The power-dependent driver matrix results compiled into an ISM model with a hierarchical structure from institution sub-elements of tourism management in Pulau Merah Beach. There are six hierarchical levels (Fig. 3).

The first level is the Department of Culture and Tourism (DISBUDPAR), which is a key sector for tourism management institutions. DISBUDPAR's role in managing regional tourism is the result of decentralization, in which local governments have the authority to manage their regions [27]. However, DISBUDPAR cannot work independently in managing the regional tourism sector. It requires cooperation with other institutions. It is confirmed by previous researches that DISBUDPAR has not been able to carry out optimal planning, maintenance, and supervision of tourist destinations in the area [28,29]. At the second level, there is the Department of Spatial Planning and Agrarian Affair, BAPPEDA, East Java Provincial Government, State Forest Enterprise (Perhutani), and the Central Government. They are expected to provide support and advice for the planning and management process of sustainable tourism.

At the third level, it consists of the Integrated Licensing Office, which can grant licenses in Banyuwangi Regency, especially in Pulau Merah Beach. Based on the Regulation of the Ministry of Tourism No. 18 of 2016 about Tourism Business Registration, to register a tourism business, technical licensing is required following applicable regulations. So, it has a vital role in preventing illegal tourism businesses and damage tourist destinations.

The performance of institutions in level three is beneficial for the successful implementation of the duties and functions of institutions at the next level (level four), namely the Police, Department of Traffic and Transportation (DLLAJ), Department of Building and Settlement Planning, Municipal Police (SATPOL PP) and Department of Environment. Each of these agencies performs its respective duties and functions.

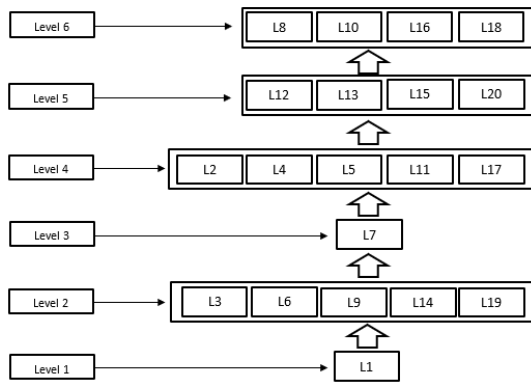


Figure 3. Hierarchy structure of tourism management institutions

Description:

Level 1

L1 = Department of Culture and Tourism (DISBUDPAR)

Level 2

L3 = Department of Spatial Planning and Agrarian Affair (DTRP)

L6 = Department of Regional Planning and Development (BAPPEDA)

L9 = East Java Provincial Government

L14 = State Forest Enterprise (Perhutani)

L19 = Central Government

Level 3

L7 = Integrated Licensing Office (BPT)

Level 4

L2 = Police

L4 = Department of Traffic and Transportation (DLAJ)

L5 = Department of Building and Settlement Planning

L11 = Municipal Police (SATPOL PP)

L17 = Department of Environment (DLH)

Level 5

L12 = Association of Indonesia Hotel and Restaurant (PHRI)

L13 = Non-Governmental Organizations (NGOs)

L15 = Association of Indonesian travel agencies (ASITA)

L20 = Bank

Level 6

L8 = District Government

L10 = Village Government

L16 = Village Consultative Office (BPD)

L18 = Cultural Community

Level five consists of the Indonesian Hotel and Restaurant Association (PHRI), Non-Governmental Organizations (NGOs), the Association of Indonesian Travel Agencies (ASITA), and banks. The role of PHRI is significant for other agencies in managing tourism in Pulau Merah Beach. Cooperation between NGOs must also continue to provide much input for planning the Pulau Merah tourism. ASITA's role is to conveying aspirations for the improvement and development of regional tourism. Banks play an active role in financing tourism management on Pulau Merah Beach.

It consists of the district government, village government, the Village Consultative Office (BPD), and the Cultural Community at level six. The Village Government plays an active role in

dealing with the people's socio-cultural and economic problems in Pulau Merah Beach. The village and district governments also motivate the cultural community to continuously preserve the culture and develop the cultural show as tourist attractions. The Village Consultative Office (BPD) role is to listen to the community's aspirations and provide policy support in village and district governments. So, the policies are in favor of the community, and environmental sustainability can be created.

The role of the Institution at level one is to assist the Institution at subsequent levels. So that synergy can be created between institutions. DISBUDPAR cannot carry out tourism planning and management tasks without support from other agencies. The role of DISBUDPAR is to develop tourist areas by building infrastructure, providing supporting facilities and infrastructure, coordinating between related agencies and the private sector, and promoting both inside and outside the country [18]. In line with this, DISBUDPAR can increase tourists' numbers by conducting promotions both at home and abroad and guiding tourism awareness groups [30].

Elements of Institutional Problem in the management of Pulau Merah Beach Tourism

The elements of institutional problems consist of 12 sub-elements. The first step in ISM analysis is to arrange a structure self-interaction matrix (SSIM) from sub-element in elements of the institutional problem and compare them, then marked with four symbols V A X O (Table 3).

Table 3. Elements of institutional problem Structure Self-Interaction Matrix

	1	2	3	4	5	6	7	8	9	10	11	12
1		X	X	X	X	X	X	X	X	A	X	X
2			X	A	X	X	X	X	X	A	X	X
3				X	A	X	X	X	V	X	A	A
4					X	X	X	X	X	X	X	V
5						V	X	A	A	A	A	V
6							X	X	X	X	X	X
7								X	X	X	X	X
8									X	X	X	X
9										A	X	A
10											X	A
11												A
12												

Description:

- 1) Overlapping authority between vertical and horizontal department
- 2) Limited funding
- 3) Poor data collection and reporting systems
- 4) Low quality of human resources
- 5) Poor application of penalty and rewards
- 6) Low involvement of institutions outside the government
- 7) Poor standard operating procedures for institutions
- 8) Absence of integrated management in tourism management
- 9) Low support for facilities and infrastructure
- 10) There is no agreed performance target in each institution
- 11) Incorrect work plans and programs
- 12) Weak evaluation and control activities

Based on Table 3, the majority of the sub-element matrix of institutional problems consists of a symbol (X), which means that these sub-elements affect each other (bidirectional), and also symbol (A), which means that the sub-elements in the column affect the sub-elements on the row. Then from the SSIM results, a reachability matrix was compiled, which can be seen in Table 4. After identifying the reachability matrix, each of these sub-elements of the institutional problem is then arranged in a matrix of power and dependent drivers (Fig. 4).

Table 4. Reachability matrix

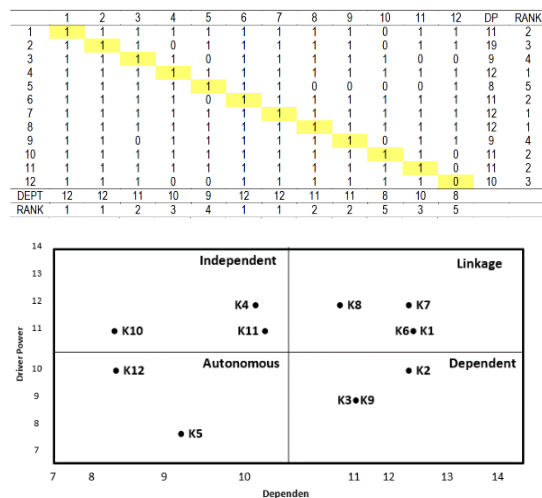


Figure 4. Matrix of Driver Power-Dependent (Elements of Institutional Problem)

Description:

Autonomous sector (2 sub-elements)

- 1) poor application of penalty and rewards (K5)
- 2) weak evaluation and control activities (K12)

Dependent sector (3 sub-elements)

- 3) limited funding (K2)
- 4) Poor data collection and reporting systems (K3)
- 5) Low support for facilities and infrastructure (K9)

Linkage sector (4 sub-elements)

- 1) Overlapping authority between vertical and horizontal department (K1)
- 2) Low involvement of institutions outside the government (K6)
- 3) Poor standard operating procedures for institutions (K7)
- 4) The absence of integrated management in tourism management (K8)

Independent sector (3 sub-elements)

- 1) Low quality of human resources (K4)
- 2) There is no agreed performance target in each institution (K10)
- 3) The preparation of programs and work plans that are not right on target (K11)

The three sub-elements in the dependent sector have inadequate carrying capacity with a high dependence level, so they are not prioritized in resolving institutional constraints in the Pulau Merah Beach tourism area. The four sub-elements of the linkage sector have high carrying

capacity and dependence so that the problem cannot be solved independently but requires cooperation with other institutions.

The sub-elements included in the independent sector's problems must efficiently handle because they have a dominant influence on the system and have a large driving force. A previous study [31] explained that a country's tourism industry could optimally run because it gets support from the human aspects around it. So, if the human resource aspect can be developed and improved, tourism development can occur optimally [32]. This power-dependent driver matrix results can be compiled into an ISM model with a hierarchical structure of the institution problem sub-elements in the Pulau Merah Beach, as shown in Figure 5.

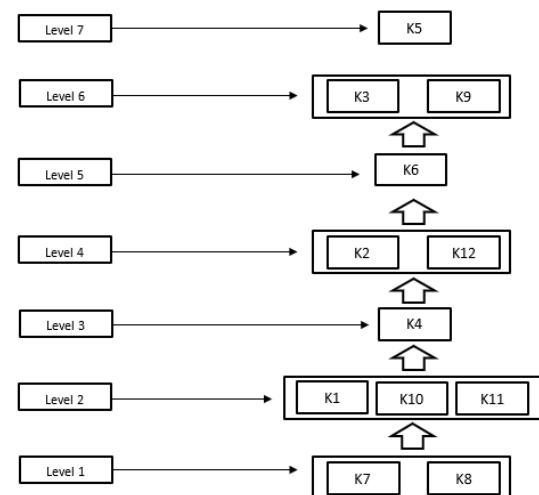


Figure 5. Hierarchy structure of institutions problem

Description:

Level 1

- K7 = poor standard operating procedures for institutions
- K8 = the absence of integrated management in tourism Management

Level 2

- K1 = overlapping authority between vertical and horizontal department
- K10 = there is no agreed performance target in each institution
- K11 = the preparation of programs and work plans that are not right on target

Level 3

- K4 = low quality of human resources

Level 4

- K2 = limited funding
- K12 = weak evaluation and control activities

Level 5

- K6 = low involvement of institutions outside the Government

Level 6

- K3 = poor data collection and reporting systems
- K9 = low support for facilities and infrastructure

Level 7

- K5 = poor application of penalty and rewards

Figure 5 shows seven elements of an institutional problem, where sub-elements of poor standard operating procedures for institutions (K7) and the absence of integrated management in tourism management (K8) are vital points that must resolve first. If these two problems are resolved, it will be able to encourage the resolution of the institutional problem at the second level, such as overlapping authority between vertical and horizontal department (K1), there is no agreed performance target in each institution (K10), and the preparation of programs and work plans that are not right on target (K 11). When cooperation between institutions has been established, overlapping authority does not occur again. Furthermore, improvements of performance at the second level, especially improvements in program formulation and work plans, will also improve the third level, namely the constraints on the low quality of human resources (K4) and further support at the fourth level, namely constraints of limited funding (K2) and low evaluation activities, and control (K12).

If these two problems can be handled, the next stage will be able to solve the fifth stage problems, namely the low level of involvement of non-government institutions, such as ASITA, PHRI, NGOs, and so on (K6) of tourism management in Pulau Merah Beach area can be resolved. At the sixth level, it consists of the poor data collection and reporting system in the tourism sector (K3) and the lack of support for institutional facilities and infrastructure in tourism management in the Pulau Merah Beach Area (K9). In the final stage, if the two problems have been overcome, then the sixth level will be able to encourage the seventh level, namely the poor of penalty and rewards in the field of tourism management in the Pulau Merah Beach Area (K5).

Standard Operating Procedure (SOP) is a guide to be able to maximize the role and quality of the institution without giving excessive negative effects [24]. After the SOP is implemented optimally, each institution must be able to integrate with tourism planning and management. The integration of institutions in carrying out tourism management must be carried out as a step to increase regional income and resolve problems that may be faced because each institution has different and complementary roles and functions [34]. So that sustainable management of the Pulau Merah Beach area can be achieved.

Element of Institutional Expected Goals in the management of Pulau Merah Beach Tourism

There are 11 sub-elements in the institution's expected goals in the management of Pulau Merah Beach tourism. The first step in ISM analysis is to arrange a structure self-interaction matrix (SSIM) from sub element in elements of institutional expected goals and are compared, then marked with four symbols (V, A, X, O), which can be seen in Table 5.

Table 5. Elements of institutional expected goals Structure self-Interaction Matrix

	1	2	3	4	5	6	7	8	9	10	11
1		A	A	X	X	X	X	X	X	X	X
2			V	X	X	V	A	X	X	X	O
3				X	X	V	X	X	X	X	X
4					X	X	A	V	X	A	A
5						V	A	X	X	X	X
6							A	X	X	X	X
7								X	X	X	X
8									A	A	X
9										X	X
10											X
11											

Description:

- 1) Achieve integrated and sustainable tourism management
- 2) Increased participation of the public and entrepreneurs in tourism activities
- 3) Comprehensive or holistic and sustainable tourism program planning
- 4) Resolving problems can be carried out more quickly and accurately
- 5) Increasing services to the community
- 6) Effective and efficient tourism management on Pulau Merah Beach is implemented
- 7) The realization of research and development activities for Pulau Merah Beach tourism
- 8) The implementation of law enforcement in a firm and clear
- 9) Coordinating data collection and reporting as additional policy material
- 10) Coordinated implementation of monitoring, evaluation, and control of the management of Pulau Merah Beach tourism
- 11) The realization of an integrated regulation by combining various existing regulations

Based on Table 5, the majority of the sub-element matrix of institutional problems consists of a symbol (X) means that these sub-elements influence each other, and also symbol (A) means that the sub-elements in the column affect the sub-elements on the row. Then from the SSIM results, a reachability matrix was compiled (Table 6). After identifying the reachability matrix, each of these sub-elements of institution expected goals is then arranged in a matrix of power and dependent drivers (Fig. 6).

Table 6. Reachability matrix

	1	2	3	4	5	6	7	8	9	10	11	DP	RANK
1	1	0	0	1	1	1	1	1	1	1	1	9	3
2	1	1	1	1	1	1	0	1	1	1	0	9	3
3	1	0	1	1	1	1	1	1	1	1	1	10	2
4	1	1	1	1	1	1	0	1	1	0	0	8	4
5	1	1	1	1	1	1	0	1	0	0	0	7	5
6	1	0	0	1	0	1	0	1	1	1	1	7	5
7	1	1	1	1	1	1	1	1	1	1	1	11	1
8	1	1	1	1	1	1	1	1	0	0	1	8	4
9	1	1	1	1	1	1	1	1	1	1	1	11	1
10	1	1	1	1	1	1	1	1	1	1	1	11	1
11	1	0	1	1	1	1	1	1	1	1	1	10	2
DEPT	11	7	9	10	10	11	7	11	9	8	8		
RANK	1	5	3	2	2	1	5	1	3	4	4		

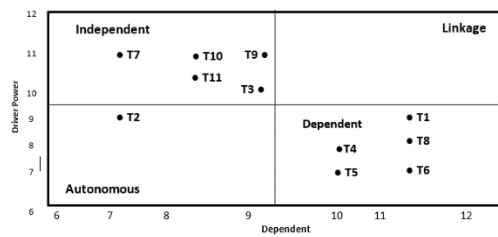


Figure 6. Matrix of Driver Power-Dependent (Elements of Institutional Expected Goal)

Description:

Autonomous sector (1 sub-element)

- 1) The objective elements of increasing community and entrepreneur participation in tourism activities (T2).

Dependent sector (5 sub-elements)

- 1) Achieve integrated and sustainable tourism management (T1)
- 2) Solving obstacles and problems can be carried out more quickly and accurately (T4)
- 3) Increasing services to the community (T5)
- 4) The implementation of efficient and effective tourism management in the Pulau Merah Beach Area(T6)
- 5) The implementation of law enforcement in a firm and clear order (T8)

Independent sector (5 sub-elements)

- 1) the arrange of a comprehensive and sustainable tourism program planning (T3)
- 2) The realization of tourism research and development activities in the Pulau Merah Beach (T7)
- 3) coordinated data collection and reporting as material for other policies (T9)
- 4) Coordinated implementation of monitoring, evaluation, and control of tourism management in the Pulau Merah Beach Area (T10)
- 5) The realization of an integrated regulation by integrating various existing regulations (T11).

Based on Figure 6 above, the analysis result does not show that there are sub-elements included in the linkage sector. This power-dependent driver matrix results can compile into an ISM model with a hierarchical structure of the institution purpose sub-elements in the Pulau Merah Beach (Fig. 7). In the expected goal elements, there are six hierarchical levels. The first level consists of T1, T6, and T8. These three goals will encourage the goal of the problems (T4) to be implemented quickly and precisely at the second level.

Furthermore, the second level will encourage the third level. Then it will encourage the fourth level, T2 and T10. These two goals will encourage T9 and T7. The coordination between elements in the tourism system greatly affected tourists' behavior patterns and requests related to tourism services, This coordination can realize research and development activities in tourist areas [35]. So that success in realizing the key factors can push the goals at the next level optimally and efficiently.

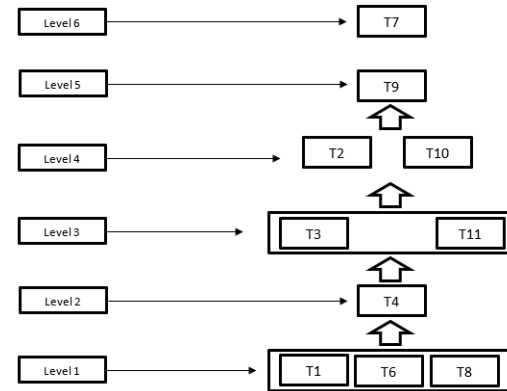


Figure 7. Hierarchy structure of Institutional Expected Goal

Description:

Level 1

- T1 = the realization of integrated and sustainable Pulau Merah Beach tourism management
- T6 = implementing efficient and effective tourism management in the Pulau Merah Beach Area
- T8 = implementation of firm law enforcement

Level 2

- T4 = Solving obstacles and problems can be carried out more quickly and accurately

Level 3

- T3 = the compilation of comprehensive and sustainable tourism program planning
- T5 = improved service to the community
- T11 = the realization of a comprehensive regulation that combines various existing regulations

Level 4

- T2 = increasing community and entrepreneur participation in tourism activities
- T10 = coordinated implementation of monitoring, evaluation, and control of tourism management in the Pulau Merah Beach Area

Level 5

- T9 = coordinated data collection and reporting as additional policy materials

Level 6

- T7 = encourage the next level, such as realizing tourism research and development activities in the Pulau Merah Beach Area

Elements of expected programs in the management of Pulau Merah Beach Tourism

Based on expert research, there are 11 sub-elements of programs that are expected in the management of tourism in the Pulau Merah Beach Area. The first step in ISM analysis is to arrange a structure self-interaction matrix (SSIM) from sub element in elements of institutional expected programs and are compared, then marked with four symbols (V, A, X, O), which can be seen in Table 7.

Based on Table 7, the majority of the sub-element matrix of institutional problems consists of the symbol (X) which means that these sub-elements influence each other. Then from the SSIM results, a reachability matrix was compiled

which can be seen in Table 8. After identifying the reachability matrix, each of these sub-elements of the expected program is then arranged in a power matrix and dependent drivers (Fig. 8).

Table 7. Elements of institutional expected programs
Structure self-Interaction Matrix

	1	2	3	4	5	6	7	8	9	10	11
1											
2	X										
3		V									
4			A								
5				X							
6					X						
7						X					
8							X				
9								X			
10									X		
11										X	

Description:

- 1) Increasing the quality of human resources in tourism management institutions
- 2) Improvement of tourism management facilities and infrastructure
- 3) Establishing a particular institution that handles the management that integrated the Pulau Merah Beach tourism area
- 4) Formulating an integrated tourism management planning pattern in the Pulau Merah Beach tourism area
- 5) Inventory or data collection of potentials of the Pulau Merah Beach area
- 6) Cross-sectoral funding institutions
- 7) Evaluation of policies or regulations enforced in the Pulau Merah Beach Area
- 8) Synchronization, vision, mission, programs, and targets
- 9) Increasing the participation of local communities and institutions in tourism management
- 10) developing monitoring and evaluation functions
- 11) Compiling and integrating various regulations and technical guidelines for tourism management in the Pulau Merah Beach Area

Table 8. Reachability matrix

	1	2	3	4	5	6	7	8	9	10	11	DP	RANK
1	1	1	1	1	1	1	1	1	1	1	1	11	1
2	1	1	1	1	1	1	1	1	1	1	1	11	1
3	0	0	1	1	1	1	1	1	1	1	1	8	3
4	0	0	1	1	1	1	1	1	1	1	1	9	4
5	1	1	1	1	1	1	1	1	1	1	1	10	2
6	1	1	1	1	1	1	1	1	1	1	1	11	1
7	1	0	1	1	1	1	1	1	1	1	1	10	2
8	1	1	1	1	1	1	1	1	1	1	1	10	2
9	1	1	1	1	1	1	1	1	1	1	1	11	1
10	1	1	1	1	1	1	1	1	1	1	1	10	2
11	1	1	1	1	1	1	1	1	1	1	1	9	4
DEPT	9	8	11	10	11	11	11	9	9	11			
RANK	3	4	1	2	2	1	1	3	3	1			

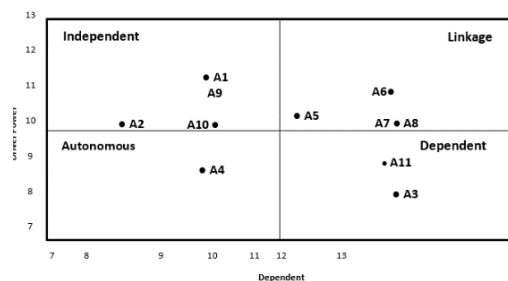


Figure 8. Matrix of Driver Power-Dependent (Elements of expected programs)

Description:

Autonomous sector

- 1) Programs to compile an integrated tourism management planning pattern in the Pulau Merah Beach Area (A4)

Independent sector (2 sub-elements)

- 1) Forming a particular institution that handles the integrated management of the Pulau Merah Beach Area (A3)
- 2) Compiling and integrating various regulations and operational guidelines / technical guidelines for tourism management in the Pulau Merah Beach Area (A11).

Linkage sector (4 sub-elements)

- 1) Inventory/data collection on all conditions and potentials of the Pulau Merah Beach Area (A5)
- 2) Cross-sectoral funding cooperation (A6)
- 3) Evaluation of policies/regulations enforced in the Pulau Merah Beach Area (A7)
- 4) Synchronization of vision, mission, programs, and targets (A8)

Independent sector (5 sub-elements)

- 1) Improving the quality of human resources in tourism management institutions (A1)
- 2) Improving tourism management facilities and infrastructure (A2)
- 3) Increasing the participation of local communities and institutions in tourism management (A9)
- 4) Development of monitoring and evaluation functions (A10).

Based on the picture above, an element is included in the autonomous sector, i.e. A4. The independent sector consists of two sub-elements, A3 and A11. The linkage sector consists of four sub-elements of expected programs, A5, A6, A7, and A8. Finally, which is included in the independent sector, four programs are expected, A1, A2, A9, and A10. The results of this power-dependent driver matrix can be compiled into an ISM model with a hierarchical structure of the expected program sub-elements in Pulau Merah Beach (Fig. 9).

There are six levels in the expected tourism management program in the Pulau Merah Beach Area. On the first level, there are several sub-elements, i.e. A3, A7, and A11. These three programs will encourage A8, which are at the second level.

Furthermore, the second level will encourage activities A4 at the third level. The third level will then encourage the fourth level, A6 and A9. These two programs will improve A1, which are at the fifth level. Finally, at the fifth level programs will encourage three programs at the sixth level, i.e. A2, A5, and A10.

Effective tourism management can support the jobs and business opportunities for the community to play a significant role in the local and regional development process [36]. Each level that is in the structural hierarchy is an illustration that the tourism system is interrelated, so it requires a multisector and multidisciplinary approach. Mainly, it requires

synergy between the government, the private sector, and the community [37]. The goal is to prevent overlapping policies and minimize losses received by either party.

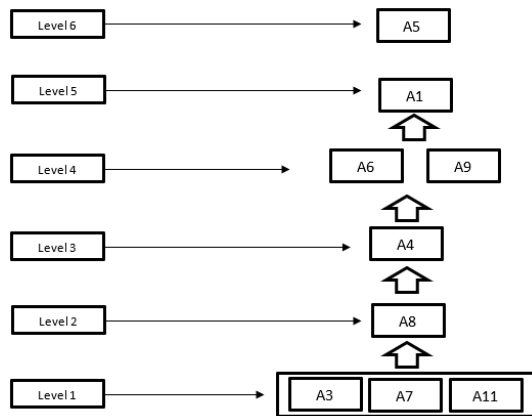


Figure 9. Hierarchy structure of expected programs

Description:

Level 1

- A3 = Form a particular institution to handle integrated management of Pulau Merah Beach Area
- A7 = Evaluation of Pulau Merah Beach Area regulations
- A11 = Compile and integrate various regulations and technical guidelines for tourism management in the Pulau Merah Beach Area

Level 2

- A8 = synchronization of the vision, mission, programs, and targets

Level 3

- A4 = formulate an integrated tourism management planning pattern in the Pulau Merah Beach Area

Level 4

- A6 = cross-sectoral/ institutional funding cooperation programs
- A9 = programs to increase the participation of local communities and institutions in tourism management

Level 5

- A1 = improve human resources quality in tourism management institutions

Level 6

- A2 = improving tourism management facilities and infrastructure
- A5 = collecting conditions and potentials in Pulau Merah Beach
- A10 = monitoring and evaluation development functions

CONCLUSION

DISBUDPAR in institutional elements has a role as an essential factor and leading sector in tourism management following Local Regulations Number 24 the Year 2004. DISBUDPAR must create a grand design for tourism management in the Pulau Merah Beach Area by considering input from other institutions and stakeholders so that the results will be more comprehensive and have a positive impact on all sides. Each goal has high dependability and low thrust capacity from the several elements of the expected goals. So, to

achieve the expected goal, the objectives in the independent sector must be realized optimally. In the problem element, a more detailed SOP (Standard Operating Procedure) is needed so that each institution's performance can be more efficient and optimal. The programs that have been planned can be the key to achieving the expected goals and solving problems that exist in tourism management. One of them is the design for establishing institutions that can encourage the implementation of a sustainable tourism management program.

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