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Journal of Environmental Management and Tourism is an interdisciplinary research journal, aimed to publish articles and original research papers that should contribute to the development of both experimental and theoretical nature in the field of Environmental Management and Tourism Sciences.

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Community Participation and Sustainable Tourism Development Model in Komodo National Park

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Abstract:

Komodo Island is a small island in the Flores archipelago, in the East Nusa Tenggara Province of Indonesia, which comes under the authority of the District Government of West Manggarai centred in the capital city of Labuan Bajo. The increasing number of tourist visits to the Komodo National Park (KNP) has had various impacts on the local communities. This report concerns findings of research conducted regarding community perspectives on tourism development in the KNP and its environs. A quantitative analysis using Structural Equation Modelling (SEM) was performed to analyse the responses of the local community regarding sustainable, community-based tourism development including social equity, cultural vitality, environmental sustainability and economic prosperity. The As of tourism (Attraction, Access and Amenities) concept form the basis of analysis of the data collected. The results from the SEM analysis of responses of the community show that sustainable, community-based tourism development in KNP may, in the long term, be improved by more than two percent, if all stakeholders have the commitment to improve the conditions of rural tourism employment, the tourism activities of local businesses, the number of livelihood alternatives and economic growth, and also per capita income by at least one percent. At the same time, conservation awareness programs, community involvement in the planning process, training courses about local cultural heritage for tourism employees, information about the village's social protocols; and cultural art exhibitions, could greatly enhance sustainable, community-based tourism development. These activities should improve attraction rating, tourism facilities rating, protection of historical & cultural sites, and increase the number of tourism operators with an environmental policy.

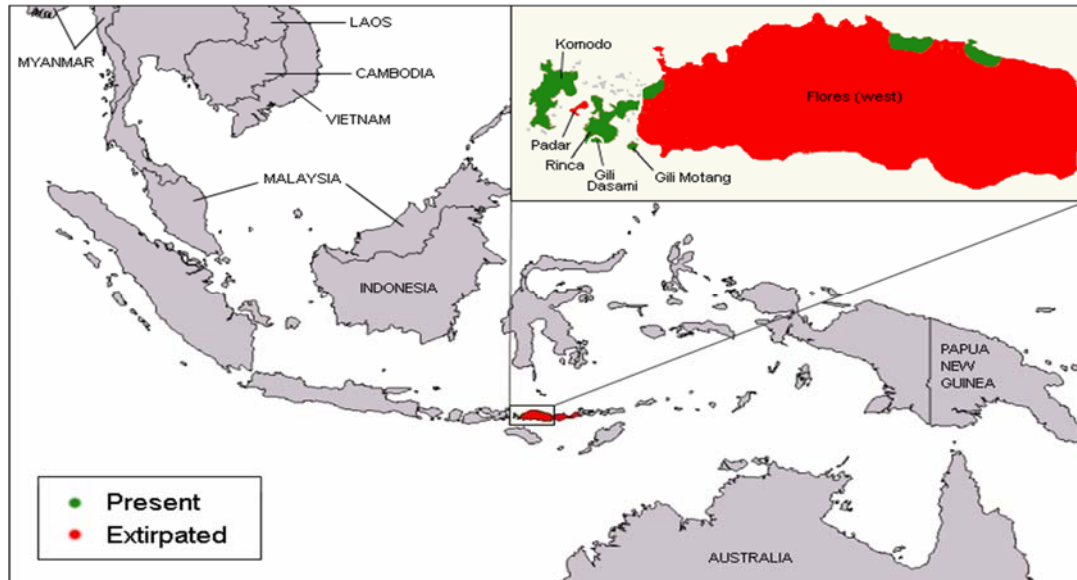
Keywords: sustainable tourism; socio-cultural values; environmental and economic prosperity.

JEL Classification: Z32; Z19; Q56; Q57.

Introduction

Which comes under the authority of the District Government of West Manggarai. However, the management of the Komodo National Park (KNP) is under the authority of the Indonesian central government. The village of Komodo, which is in the conservation area of the KNP, is located approximately four hours by ferry, or one hour by fast boat, from Labuan Bajo, the capital city of the West Manggarai District (See Figure 1).

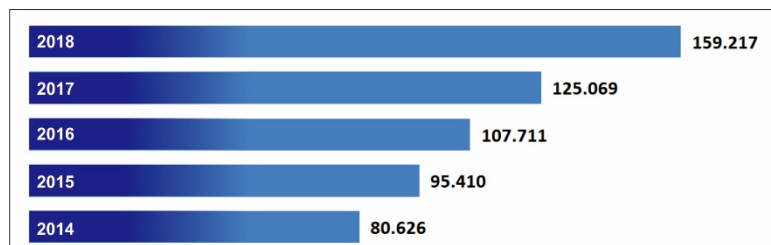
Figure 1. KNP Visitor numbers 2014 - 2018. Komodo Island and West Manggarai District



Source: https://en.wikipedia.org/wiki/Komodo_dragon

Following three years of increasing tourism in the KNP, the Indonesia government declared the KNP and Labuan Bajo as being in the top-10 destinations for national tourism (Press Release National Coordination Meeting, 2016). Since then, the number of tourists increased from year to year, as seen in Figure 2.

Figure 2. KNP Visitor numbers 2014 - 2018



Source:

<https://www.google.com/search?q=perkembangan+jumlah+wisatawan+komodo&safe=strict&source=lnms&tbn=isch&sa>

The increasing number of tourists in the KNP has had various impacts on the local community including: environmental, social, economic, livelihood and cultural impacts. Ideally, as both the local community and tourism investors coming from outside of the region share the same natural resources, in the cause of sustainable development, both groups should have the same vision of sharing and preserving the natural resources for future generations.

A survey conducted by (Lasso and Dahles 2018a), found that fishing activities have been the main livelihood of local people for many years. The villagers use bagans, a mobile fishing platform or boat equipped with large nets and portable lights, and kerosene lanterns for nighttime fishing. However, in the mid-2000s, a crisis hit bagan fishing caused by decreasing catch and increasing operational costs. Because of that crisis, some traditional fishers changed their livelihood strategy from fishing to the newly learnt skill of woodcarving in line with the beginning stages of tourism activities in the region. The local people found that their work as goldsmiths and craft artisans to be more profitable than bagan fishing.

Improved incomes have been one of the positive contributions of the tourism sector to the local villagers' livelihoods. Additionally, there is a process of knowledge and skills transfer to the younger generation. However, according to (Lasso and Dahles 2018a):

"...Although a tourism livelihood enables Komodo villagers to generate a relatively satisfactory income, it would be premature to conclude that tourism is an appropriate strategy to provide sustainable livelihoods for local communities ... But once tourism replaced the former livelihood, the local people reverted to a situation of economic dependency on one single source of income ... As local people have abandoned their boats and relinquished their skills, a return to fishing has become unfeasible..."

While alternative livelihoods are a positive contribution of tourism, one of the significant negative impacts of tourism development in the KNP is land grabbing and speculation. A study conducted by (Remmer, n.d.) found that because of the rapid growth of tourism, there are many business investors and speculators, from outside of the region, who have come to Komodo Island, and other islands in the vicinity of the KNP, for land grabbing and speculation. Indeed, local entrepreneurs and small businesses do not yet have the financial and professional capacities to partake in the payoffs from the tourism sector growth. In fact, the sale of their land to outside investors decreases their chances of being able to do so in the future. The poorer local people sell their properties for short-term profit and benefits, while the outsiders speculate by buying local properties for future rent seeking purposes

Waste management is another problem caused by the rapid growth of tourism in the KNP and Labuan Bajo. The local government's capacity for waste collection, 106 m³ per day or 38,690 m³ per year, and total disposal at the city's landfill, 114.6 m³ per day or 41,829 m³ per year, are not sufficient to manage the waste currently produced.

Like many other tourist destination regions of Indonesia, KNP and Labuan Bajo are now facing the problem of a lack of fresh water supply. Because of the increasing consumption of water, tourism businesses compete for water with the local people. A study conducted by (Cole and Muslin 2015) found that the business sector dominates the competition for fresh water against the local people. At the same time, businesses are taking little responsibility for their water use. According to Cole and Muslin:

"...Some stakeholders criticise that the businesses are treated preferentially... Most of the businesses receive their water from delivery trucks or wells. The pricing structure enables the largest consumers to consume at the lowest unit price, setting wrong incentives and leading to a situation in which large businesses exploit the water resources of local communities under value ..."

One of the major factors that has been a catalyst for the negative impacts, as well as the unsustainability of positive impacts, from the quickly growing tourism sector in the KNP is when the local people have no sense of belonging or inclusion within the development process. According to Godfrey and Clarke (2000, in (Muganda *et al.* 2017) communities form a basic element in modern tourism as they are:

"... the focal point for the supply of accommodation, catering, information, transport facilities and services. Their local natural environment, buildings and institutions, their people, culture and history, all form core elements of what the tourists come to see; whether as towns, villages or cities, every community has tourism at one level or another and are affected by the growth and development of the industry."

Hence, local participation is actually the key issue that has to be addressed in the development process so that the process can produce sustainable benefits for all parties (Roos *et al.* 2020). Accordingly, the local people should understand that their participation in the development process, especially in the tourism sector, might produce a benefit for themselves in the long term.

Quickly increasing tourism activities in the KNP are reported to be unsustainable under their current regime and development framework. Urgent fresh research is necessary to help develop transformative policies that promote sustainable tourism that will protect the local environment and ensure equitable distribution of proceeds among all stakeholders. Some important questions that have to be answered are (i) what is the perspective of the local community living on Komodo Island towards the tourism sector development? (ii) How engaged are the local community with the tourism development process in Komodo Island?, and (iii) how should the tourism development model be designed and implemented so as to create sustainable tourism for the current and future generations?. The aims of this research are (i) to understand the impact of tourism on community livelihoods by examining the local communities' views on their participation in tourism development to date, in and around the KNP, as well as the role that should be taken by local community in sustainable tourism

development; (ii) to identify constraining issues that should be solved in bringing the local community to be involved in the development process of the tourism sector; and (iii) to inform stakeholders, including policy and decision makers, of best practice for involving the local community in developing sustainable tourism strategies for the KNP and its environs.

Komodo National Park and Sustainable, Community-Based Tourism Development

Komodo dragons inhabit five islands in eastern Indonesia, with four of these island populations located within the KNP, plus several fragmented populations persisting on the larger island of Flores (Purwandana *et al.* 2014). Komodo dragons have been recognised globally as an endangered species, already having been classified by the International Union for the Conservation of Nature (IUCN), as 'vulnerable' due to demographic decline and limited distribution (Burgin and Zama 2014). The existence of Komodo dragons in the KNP has become even more vulnerable since the KNP become a popular tourist destination.

Over the last 25 years there have been an increasing number of studies regarding sustainable tourism, and as such, there are many varied interpretations of sustainable tourism and methods of evaluation used by the tourism sector in different regions around the world. In practice, where tourism is introduced into an area, community livelihoods can be both enhanced or disrupted (Fabinyi *et al.* 2010; (Agyeman *et al.* 2019; Hussain 2019; Kamarudin *et al.* 2020; Lasso and Dahles 2018b; Rashid 2020; Rongna and Sun 2020; Su *et al.* 2019; Zhang *et al.* 2019). Tourism can enhance local community livelihoods when it provides the increased opportunities for the community to diversify their livelihoods using the existing natural resources. In contrast, tourism could disrupt community livelihoods if the villagers are dispossessed of access to the existing natural resources that supported their original livelihood, while the introduced businesses have favoured access (Chen *et al.* 2019; Lasso and Dahles 2018a; Niringiyimana and Murindwa Rutanga 2019, Sahoo 2019).

A strategy for increasing community involvement in tourism development is that the community should be accorded access to all the processes of development including decision-making, planning and implementation, monitoring and problem-solving, while instilling full awareness that the process is to benefit all parties. This strategy allows the local community to express local knowledge and their perspective of tourism, how it can be sustainable and how they could be involved in its development. According to Lynam and Herdt (1989) sustainable is "...the capacity of a system to maintain output at a level approximately equal to or greater than its historical average, with the approximation determined by the historical level of variability". For a definition of sustainability from the perspective of natural resources and the environment, (Fresco and Kroonenberg 1992) state that the sustainability of the natural ecosystem can be defined as the dynamic equilibrium between natural inputs and outputs modified by external events such as climatic change and natural disaster.

Benu *et al.* (2019) elaborate the concept of sustainable in the context of Sustainable Economic Development (SED) that should be in tandem with Sustainable Livelihoods (SL), meaning that humans have a right of freedom to Economic Development (ED), which is not merely freedom of economic activities (the freedom to enter into market exchanges) or political activities (the freedom to vote and be an active citizen), but humans also have rights to access social services such as health care, sanitation, nutrition and education which are afforded by a SL.

To ensure sustainable progress of the tourism sector for economic development as well as for creating positive impacts on community livelihoods, tourism should be developed using a bottom-up approach model. Local communities should be involved in designing tourism sector development. However, in many developing countries, the tourism sector has been developed by the government with a top-down approach model without consultation with, or involvement of local communities (Nost 2013, Sindiga 1995, Suchet and Raspaud 2010). Hence, Dahles (2003) in (Lasso and Dahles, 2018a) argues that the tourism sector that has been developed in Indonesia may obstruct or even destroy local business and undermine existing livelihoods.

The World Tourism Organisation (UNWTO 2001) emphasise that sustainability principles should refer to the environmental, economic, and socio-cultural aspects of tourism development, and a suitable balance must be established between these three dimensions to guarantee its long-term sustainability.

In order to fulfil the goals of sustainability (Erlet 1993) highlights that tourism development should (1) meet the needs of the host population in terms of improved living standards, both in the short and long term; (2) satisfy the demands of a growing number of tourists, and continue to attract them in order to meet the first aim; and (3) safeguard the natural environment in order to achieve both of the preceding aims.

Multidimensional aspects of sustainable tourism, based on the sustainability principle, were formulated by the OMT (2004), including the environmental, economic, and socio-cultural aspects of tourism development,

promoting a suitable balance between these three dimensions to guarantee its long-term sustainability. Therefore, sustainable tourism should encompass issues such as (1) making optimal use of environmental resources that constitute key elements in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity; (2) respect of the socio-cultural authenticity of host communities, conserve their built and living cultural heritage and traditional values, and contribute to cross-cultural understanding and tolerance; and (3) ensure viable, long-term economic enterprises, providing fairly distributed socio-economic benefits to all stakeholders, including stable employment, income earning opportunities and social services to host communities that contribute to poverty alleviation.

1. Methodology

A quantitative analysis using Structural Equation Modelling (SEM) was employed to evaluate the relationship and the impact of the four generic aspects (economic, social, cultural and environmental) together with 20 indicators of sustainable tourism. The research results aided in understanding local community perspectives for sustainable tourism development that should be introduced into tourism practices in the KNP. All the responses of stakeholders regarding the concept of sustainable tourism development have been ordered in the Likert scoring system including: strongly agree, agree, neutral, disagree, and strongly disagree. The conceptual model for sustainable tourism development in the KNP that was encapsulated in the analysis can be seen in the Figure 3.

Figure 3. Four Pillars of Sustainable, Community-Based Tourism Development.



Based on the concept of sustainable tourism development developed by Harrison and Husbands (1996), in their research in Samoa, as quoted by Bahaire and Elliott-white (2010), the themes of sustainable community-based tourism development together with their objectives and indicator descriptors are shown in Table 1.

Table 1. Sustainable tourism objectives and corresponding indicators

Theme	Objective Focus	Main objective	Sub-objective	Indicator descriptor
Environment	Land and forest resources	Encourage the conservation of land and in particular forest resources	- Encourage the participation of village communities in conservation programs - Promote the careful use of tourism as an income generating activity for conservation areas and other natural areas under protection	1a) Village participating in land conservation programs 1b) Tourist visits to conservation areas
	Coastal and marine resources	Promote the careful management of coastal and marine resources with special focus on coral reefs	- Encourage the participation of village communities in marine conservation programs - Promote the careful use of tourism as an income generating activity in coastal areas	2a) Village participation in marine conservation programs 2b) Tourists engaging in marine activities

Theme	Objective Focus	Main objective	Sub-objective	Indicator descriptor
	Waste and pollution	Encourage the use of proper waste management practices at both the national and village level	- Enhance village awareness of appropriate waste disposal methods - Encourage the tourism industry to adopt appropriate solid and human waste management practices	3a) Hotels treating the sewage 3b) Hotels recycling their waste
	Water resources	Seek to improve the quality of water and efficiency of water usage in all areas	- Work together with responsible agencies to upgrade the quality and reliability of water supply especially to rural areas where tourism is being developed - Promote measures to increase efficiency of water use by the tourism industry	4a) Tourism accommodation with drinkable tap water 4b) Hotel water usage
Economy	Rural development	Stimulate appropriate employment and income generating opportunities in rural areas	- Support the participation of village communities in appropriate tourism income generating activities - Encourage tourism operators to use locally produced goods and services	5a) Rural tourism employment 5b) Tourism businesses located outside the KNP
	National economic development	Diversify the national income base	- Create opportunities for increased tourism spending - Encourage local entrepreneurship and initiative in all facets of the tourism industry	6a) Newly registered tourism businesses 6b) GDP generated by the tourism industry
Society and culture	Education and training	Promote appropriate training and education especially in rural areas	Provide and deliver appropriate tourism awareness information, especially to villages where tourism is already being developed	7a) Villages included in awareness programs 7b) Hotel employees who have been on training courses
	Respect for local culture and traditions	Foster respect for local culture and traditions in all activities	- Develop tourism activities which provide opportunities for learning about the local culture and traditions - Identify and address potential conflicts between tourism and local culture and traditions	8a) Provision of information about village protocol by tourism operators 8b) Villages providing homestay experiences
	Performing arts and crafts	Encourage and promote widespread participation and skills in performing arts, crafts and other cultural practices	- Take steps to maintain and rejuvenate traditional performing arts and other cultural practices - Support the development of high-quality crafts as well as their potential for income generation	9a) Entries in traditional dance competition 9b) Exhibitors at annual craft fair
Tourism	Tourist facilities	Improve the quality of the tourist experience through the upgrading of tourist attraction sites, facilities and services	- Support efforts to enhance the quality of tourist attractions, particularly those of historical and cultural significance - Seek to upgrade the quality of tourist facilities and services	10a) Evaluation rating of attraction sites 10b) Quality rating given to key tourist facilities

Theme	Objective Focus	Main objective	Sub-objective	Indicator descriptor
	Tourism planning	Ensure tourism development is carefully planned and of a scale and form compatible with the natural and cultural environment	- Ensure national level tourism planning and policy is environmentally and culturally appropriate, carefully implemented and monitored, and developed in partnership with stakeholder groups - Evaluate all applications for new tourism development in terms of their environmental and cultural compatibility - Take special care to safeguard critical natural and historic landscapes from inappropriate development	11a) Hotels and EIA conducted 11b) Historical and cultural sites protected by national law
	Sustainable tourism	Enhance awareness and adoption of sustainable tourism principles and practices	- Encourage and support the tourism private sector to employ sustainable tourism practices and technologies in their businesses - Enhance the awareness and commitment of government departments and NGOs to sustainable tourism	12a) Tourism operators with an environmental policy 12b) Projects undertaken as a result of monitoring program

Source: Harrison & Husbands (1996) in (Bahaire and Elliott-white 2010)

Based on the above theoretical framework, the structural analysis framework seen in Table 2 has been developed.

Table 2. Four pillars and the indicators of sustainable community-based tourism development

Aspect	Indicator
ES: Environmental Sustainability	ES1: Community participating in Conservation Programme
	ES2: Consciousness of tourism conservation
	ES3: Hotel & Travel treating their sewage
	ES4: Hotel recycling their waste
	ES5: Level of destruction of natural resources
SC: Social equity & Cultural vitality	SC1: Community involved in planning program
	SC2: Community included in conservation awareness programmes
	SC3: Hotel employees who have been on training course of cultural entities
	SC4: Provision of information about villagers' social protocol
	SC5: Cultural art performance/exhibition/fair
EP: Economic prosperity	EP1: Rural tourism employment
	EP2: Tourism business of local community
	EP3: Number of livelihood alternatives
	EP4: Economic growth
	EP5: Income per capita
STD: Sustainable community-based tourism development	STD1: Rating of attractions
	STD2: Rating of tourism facilities
	STD3: Historical & Cultural site protected
	STD4: Tourism operator with environmental policy
	STD5: Monitoring & Evaluation programmes

This study used a multistage sampling technique that included all parties including: government bodies, tourism agents, travel agents, hotel managers, the owner/operators of tour ships/boats, and local people. The four stages of sampling technique were: (i) 1st stage: at the national/provincial level used a purposive sampling technique; (ii) 2nd stage: at the district level used an accidental sampling technique; (iii) 3rd stage: at the sub-district level used an accidental sampling technique and a purposive sampling technique; and (iv) 4th stage: at the village level used a cluster purposive and cluster random technique.

Structural equation modelling of sustainable, community-based tourism was performed using the Amos software by checking indicators of the model including identification of the model and estimation of the parameters of the model.

2. Result and Discussion

The Goodness of Fit Test of the Model

The results of the SEM analysis show that the probability level of Chi-square for sustainable community based tourism model is 0.000, the indicator of Goodness of Fit Index (GFI) of the model is 1.00 and the value of Root Mean Squared Residual (RMR) of the model is 0.00. Hence, we can say that the model of sustainable, community-based tourism is a good fit model. Furthermore, the value of Normal Fit Index (NFI) is 1.00, the value of Incremental Fit Index (IFI) for the model is 1.00, and the value of Comparative Fit Index (CFI) is 1.00. These three indicators emphasize that the model of sustainable, community-based tourism is suitable to be used for further predictions (see Table 3.)

Table 3. Results of Goodness of Fit Test of the Sustainable Community Based Development Model

Indicators	Absolute Fit Model			Incremental Fit Measure		
	Chi-square	Goodness of fit index (GFI)	Root mean square residual (RMR)	Normed Fit index (NFI)	Incremental fit index (IFI)	Comparative fit index (CFI)
Coefficient	96	-	-	-	-	-
Degree of freedom	146	-	-	-	-	-
Probability level	0.000	-	-	-	-	-
Default model	-	0.912	0.037	0.884	0.968	0.967
Saturated model	-	1.000	0.000	1.000	1.000	1.000
Independent model	-	0.353	0.284	0.000	0.000	0.000

Source: Primary data analysis produced by Amos Software, version-22

Confirmatory Factor Analysis

There are two formulas that have been used to analyze the reliability of the indicators, being composite (construct) reliability and variance extracted. A reasonable threshold of composite reliability is greater than 0.60. The rule of thumb for variance extracted is greater than 0.50, and the results of the analysis show that all the indicators of composite reliability ≥ 0.6 and the four indicators of variance extracted ≥ 0.5 . We can say that all manifest variables have reliability to predict the four construct variables

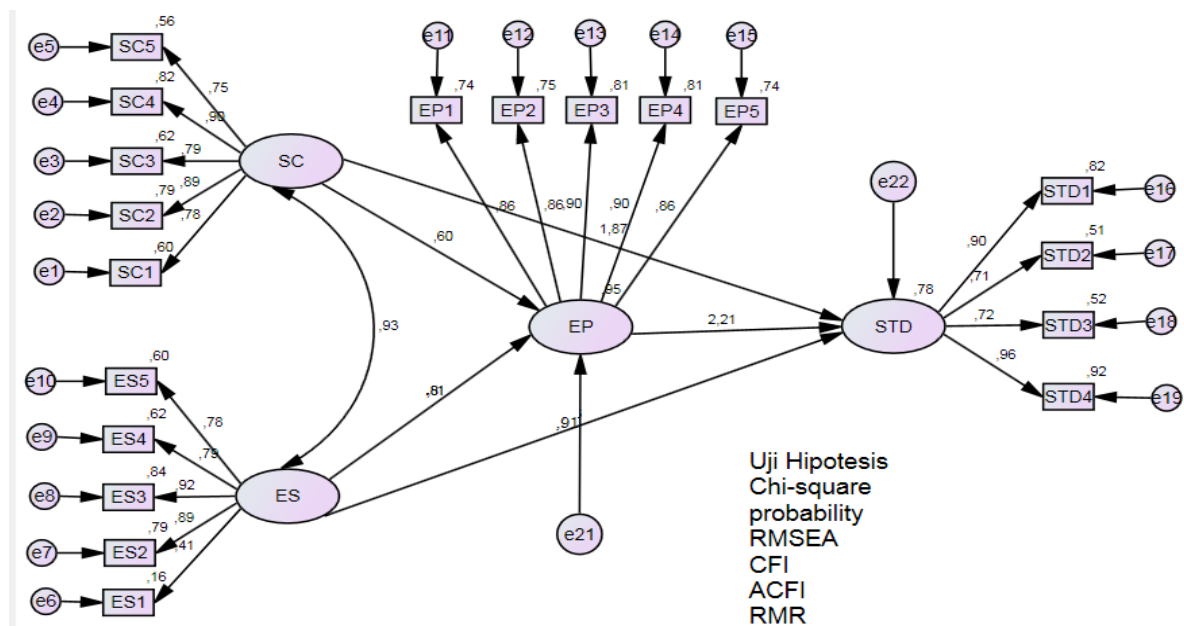
Structural Equation Model Analysis

The alternative method that has been employed, to execute the estimation of the structural model, is Maximum Likelihood (ML) technique. Figure 4 demonstrates the results of SEM analysis produced by Amos software, version-22.

Figure 4 shows that the model consists of 4 latent variables including: (i) social equity and cultural vitality (SC); (ii) environmental sustainability (ES); (iii) economic prosperity (EP); and (iv) sustainable tourism development (STD).

The 5 manifest variables that have been used as proxies for social equity and cultural vitality (SC) are: (i) community included in conservation awareness programs (SC1), (ii) community involved in planning program (SC2), (iii) hotel employees have been on training courses about local cultural heritage (SC3), (iv) provision of information about the village's social protocols (SC4), and (v) cultural art performances/exhibitions/fairs (SC5). At the same time, the 5 manifest variables that have been used as proxies for environmental sustainability (ES) are: (i) community participation in conservation programs (ES1), (ii) conscious conservation tourism (ES2), (iii) hotels & travel businesses treating their own sewage (ES3); (iv) hotels recycling their own waste (ES4), (v) level of destruction of natural resources (ES5). The 4 manifest variables that have been used as proxies for economic prosperity (EP) are: (i) rural tourism employment (EP1), (ii) tourism businesses owned by the local community (EP2), (iii) number of livelihood alternatives (EP3), (iv) economic growth (EP4), and (v) per capita income (EP5), and finally, the 5 manifest variables that have been used as proxies for sustainable tourism development (STD) are: (i) rating of tourist attractions (STD1), (ii) rating of tourism facilities (STD2), (iii) historical & cultural sites protected (STD3), and (iv) tourism operators with an environmental policy (STD4). It can be seen in Table 5, that all the estimations of standardized coefficient are significant at the significant level $\alpha = 1\%$.

Figure 4. The results of Structural Equation Modeling produced by AMOS software, version-22



The results of the SEM analysis provide understanding that based on the community responses on sustainable tourism development, the three variables that have a major direct impact on the sustainable tourism development are economic prosperity, environmental sustainability and social equity/cultural vitality with a standardized regression coefficient 2.21, 1.87 and 0.91, respectively. These three standardized coefficients indicate that if we can improve the value of economic prosperity to about 1 % through rural tourism employment, tourism businesses owned by the local community, number of livelihood alternatives, economic growth, and per capita income, then it will create an impact on sustainable tourism development of about 2.21 % in the long term. The value of sustainable tourism development that will be improved, including the rating of attractions, rating of tourism facilities, historical and cultural sites protected, and tourism operators with an environmental policy.

In respect to development processes on Komodo Island to improve the welfare of the local people, public spending for basic infrastructure at the local level has to be initiated by the government, because such infrastructure needs too large an investment for the local community to fund. This policy is one of the breakthrough policies to overcome the poverty trap faced by the people including those operating in the tourism sector. This policy also emphasizes the notion that a sustainable development process should be started with an affirmative policy of the government by providing basic infrastructure to ensure that people can attain a sustainable livelihood.

Komodo Island people responded saying that basic infrastructure is needed to improve their prosperity regarding tourism development on Komodo Island, because, in fact, they only have access to fresh water from the limited fresh water resources. All 439 families living in Komodo village have access to fresh water, 29.55 % from a small water spring and the remaining 70.45 % have access to water from 14 dug wells.

Many people living in Komodo Village cannot improve their education, health care, economic, social status or their political well-being. Data from the survey shows that 18.18 % of the people living in Komodo Village quite often suffer from various kinds of diseases with 88.64 % suffering mild illness and 11.36 % have severe illness. However, there are about 25 % who have no medical treatment or are self-medicated based on their own experiences. The reason behind this condition is the lack of medical facilities, as well as the high cost of medical treatment. Data shows that almost 14 % of the people are not covered by the existing health care system. The local people also have difficulties in accessing good medical service as the doctor only has a practice in the capital city of Labuan Bajo, four hours by boat away. (Resosudarmo and Yusuf 2009) make a statement that:

"The current (lack of) infrastructure continues to profoundly affect people's health. Major issues include inadequacies of the health care system, difficulties with transportation and roads, and the aforementioned lack of basic necessities such as clean water provision and sanitation management. Furthermore, little work has been done to ensure the protection and sustainability of the environment for further development in NTT."

This finding is also supported by Ardahaey (2011), Dwyer *et al.* (2020), Goffi *et al.* (2019), Seetanah and Fauzel (2019) about economic impacts on the tourism industry from short-term and long-term strategic planning and using the specific abilities and tourism products in developing countries.

Analysis also points to the fact that if the value of social equity as well as cultural vitality can be improved by about 1 % through conservation awareness programs, community involvement in the planning process, training courses about cultural heritage and its value for employees; provision of information about the village's social protocols; and cultural art performances and exhibitions, then in the long term it will create an impact on sustainable tourism development of about 1.87 %. The values of sustainable tourism development that will be improved are: rating of attraction, rating of tourism facilities, historical and cultural site protected, and tourism operators with an environmental policy. People have special responses on the condition of socio cultural factors in relation to tourism development because 15.91 % of the children of school age haven't attended school because of economic reasons, and 6.82 % of the people are illiterate. Poor education and literacy problems inhibit their access to financial capital at all formal financial institutions to improve their livelihood and welfare. In this situation, the local people only have access to financial capital provided by middlemen with high interest rates. The lack of education seems to be the main determinant factor for the local people to choose fishing as their livelihood and lifestyle. Hence, a lack of education is one of the main obstacles to alleviating the poverty trap for local people.

Local people also expressed the importance of the value of cultural vitality regarding sustainable tourism development of the KNP, because based on a legend, told by a traditional narrator, the Komodo dragon is a part of their social-religious life and they cannot be separated for conservation reasons. Indeed, the local community should participate as a main actor in the model of sustainable, community-based development, in the KNP. This approach is very important for local people as the tourism sector has the potential to change the value of their socio-cultural identity. As Zhuang *et al.* (2019) demonstrated in their research about "Sociocultural Impacts of Tourism on Residents of World Cultural Heritage Sites in China" that tourism development is the major catalyst for change in local residents' moral values.

Likewise, if we can improve the value of environmental sustainability by 1 % through community participation in conservation programs, conscious tourism of conservation, hotel and travel accommodation facilities treating their own sewage, hotels recycling their waste, and reducing the level of destruction of natural resources, then it will create an impact on the value of sustainable tourism development by about 0.91 %. This result indicates that environmental conservation is a key issue that should be addressed to create sustainable tourism development. Local people can engage in another type of ecotourism, for boosting their local economic performance, by displaying their conservation methods after they successfully conserve their natural resources (Burgin and Zama 2014, Islam *et al.* n.d.). However, this program would need further intervention by the local government by establishing a new community-based forest conservation program. Once again, the local community should not be excluded from any kind of development program. This breakthrough program should be one of the priority policies as there are at least 150 m³ of timber cut down every year by the local people for new building and souvenir materials.

Additionally, the variables of social equity/cultural vitality and environmental sustainability have indirect impacts on sustainable tourism development through economic prosperity with regression standardized coefficient of 0.81 and 0.60, respectively. This result shows that people always put the issue of economic prosperity as the key issue, if we want to create a model of sustainable community-based tourism development. However, to improve the economic prosperity of the people, the local people have acknowledged that the issue of environmental sustainability, and social equity/cultural vitality should be endorsed by all stakeholders, especially the government. If the value of social equity/cultural vitality can improve by 1 %, as well as environmental sustainability then it will have an impact on economic prosperity of about 0.81 % and 0.60 %, respectively.

Conclusion

Based on the results from the SEM analysis of responses of the community, the model of sustainable community-based tourism development in KNP may, over time, be improved by more than two percent. All stakeholders must have the commitment to improve the condition of rural tourism employment, the tourism activities of local businesses, the number of livelihood alternatives, economic growth, and per capita income by at least one percent. The key factor that will determine this commitment is the availability of basic infrastructure, via policy currently being implemented by the central and provincial governments. The value of social equity and

cultural vitality are two important elements that are inherent in the process of tourism development in KNP. Structural analysis shows that the conservation awareness programs, community involvement in the planning process, training courses about local cultural heritage and its values for tourism employees, information about the village's social protocols; and cultural art performances and exhibitions, could greatly enhance sustainable, community-based tourism development. These activities should improve attraction rating, tourism facilities rating, protection of historical and cultural sites, and increase the number of tourism operators with an environmental policy. Finally, environmental conservation is a key issue that should be addressed to ensure sustainable tourism development. If environmental sustainability can be improved through community participation in conservation programs, conscious conservation tourism activities, hotels and travel accommodation facilities recycling their own waste and managing their own sanitation needs, and reduction of the level of natural resource destruction, then the impact on the value of sustainable, community-based tourism development could be improved almost one percent over time.

Recommendations

All stakeholders, including the KNP Authority Board, government departments, the private sector and local people should have a commitment to improve the conditions of rural tourism employment, the activities of tourism businesses owned by the local community, the number of livelihood alternatives, economic growth, and per capita income as a long term strategic approach in creating sustainable, community-based tourism in the KNP. The Government should take steps to introduce and maintain conservation awareness programs; community involvement in the development planning process; training courses about local cultural heritage and its values and the village's social protocols; and cultural art performances and exhibitions, that could create a positive impact on the tourism sector by improving attraction ratings, ratings for tourism facilities, protection of historical and cultural sites, and increased numbers of tourism operators with an environmental policy.

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Authors Contributions

Fred Benu: Coordinated the data-analysis and coordinated among all authors; Moni Muskanan: participated in write the literature review of the manuscript and field work; Paul G. King: participated in the research activity and contributed to the writing and editing of the manuscript; Halena M. Asa and Hamza Wulakada: participated in all field work activities.

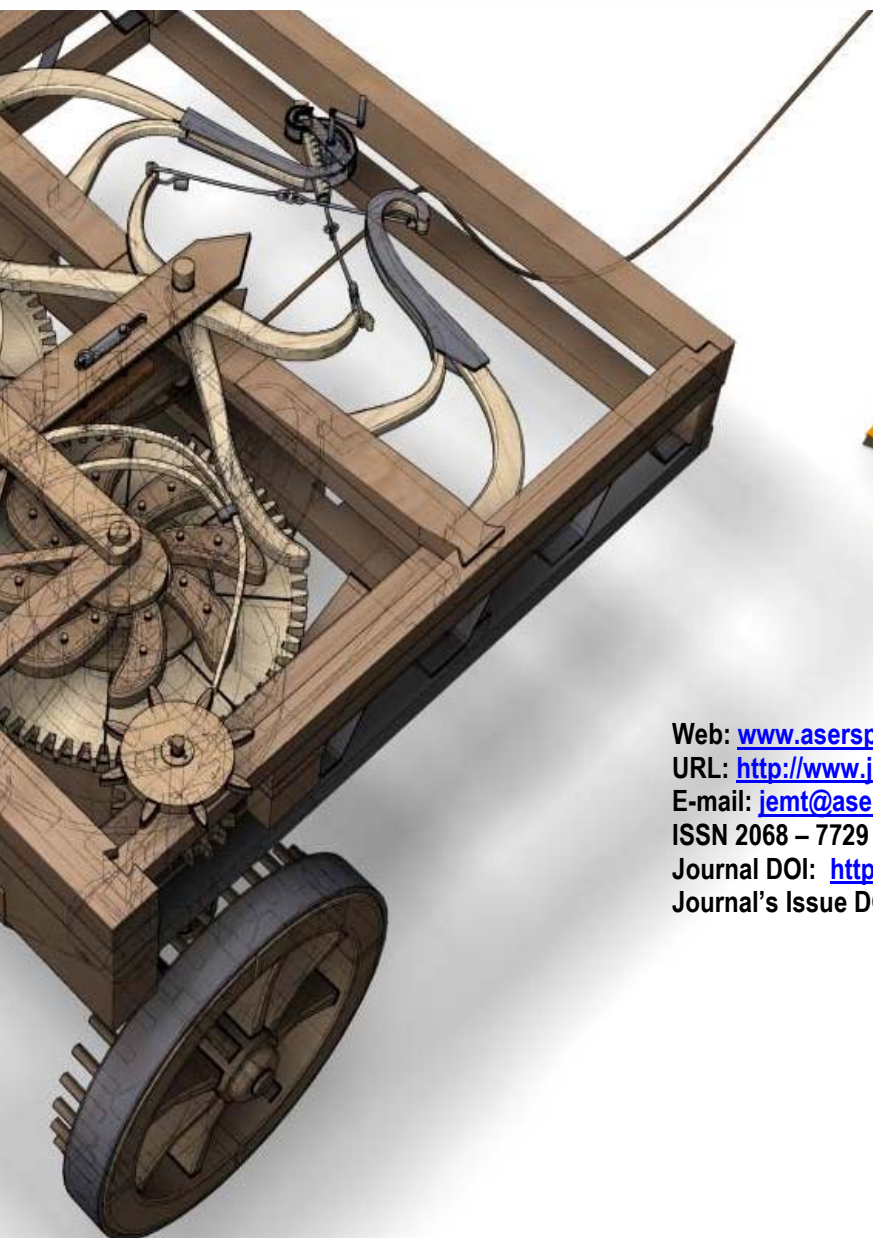
References

- [1] Agyeman, Y. B., Yeboah, A. O., and Ashie, E. 2019. Protected areas and poverty reduction: The role of ecotourism livelihood in local communities in Ghana. *Community Development*, 50(1): 73–91.
- [2] Ardahaey, F. T. 2011. Economic Impacts of Tourism Industry. *International Journal of Business and Management*, 6(8): 206–215. DOI:<https://doi.org/10.5539/ijbm.v6n8p206>
- [3] Bahaire, T., and Elliott-white, M. 2010. Current Issues in Tourism Community Participation in Tourism Planning and Development in the Historic City of York, England. February 2013, 37–41.
- [4] Benu, F., King, P. G., AgusNalle, and Muskanan, M. 2019. Traditional Fishermen in Rote Island: An Alternative Livelihood to Illegal Fishing Activities in the Indonesian-Australian Transboundary Waters. *American Journal of Agricultural and Biological Sciences*, 13(1): 64–76. DOI:<https://doi.org/10.3844/ajabssp.2018.64.76>
- [5] Burgin, S., and Zama, E. F. 2014. Community-Based Tourism—Option for Forest-Dependent Communities in 1A IUCN Protected Areas? *Cameroon Case Study*, 7: 1–10
- [6] Chen, F., Xu, H., and Lew, A. A. 2019. Livelihood resilience in tourism communities: The role of human agency. *Journal of Sustainable Tourism*, 28(4): 606–624.

- [7] Cole, S., and Muslin, M. 2015. *For the Worry of Water: Water, women, and tourism in Labuan Bajo*. Available at: <http://equalityintourism.org/wp-content/uploads/2015/11/Stroma-For-the-worry-of-water-Final.pdf>
- [8] Dwyer, L., Forsyth, P., and Dwyer, W. 2020. *Tourism economics and policy*. Channel View Publications
- [9] Erlet, C. 1993. Ecotourism in the third world: Problems for sustainable tourism development. *Tourism Management*, 14(2): 85–90. DOI:[https://doi.org/10.1016/0261-5177\(93\)90040-r](https://doi.org/10.1016/0261-5177(93)90040-r)
- [10] Fabinyi, M., Knudsen, M., and Segi, S. 2010. Social complexity, ethnography and coastal resource management in the Philippines. *Coastal Management*, 38(6): 617–632. DOI:<https://doi.org/10.1080/08920753.2010.523412>
- [11] Fresco, L. O., and Kroonenberg, S. B. 1992. Time and spatial scales in ecological sustainability. *Land Use Policy*, 9(3): 155–168. DOI:[https://doi.org/10.1016/0264-8377\(92\)90040-4](https://doi.org/10.1016/0264-8377(92)90040-4)
- [12] Goffi, G., Cucculelli, M., and Masiero, L. 2019. Fostering tourism destination competitiveness in developing countries: The role of sustainability. *Journal of Cleaner Production*, 209: 101–115.
- [13] Hussain, A. 2019. Transport infrastructure development, tourism and livelihood strategies: An analysis of isolated communities of Gilgit-Baltistan, Pakistan
- [14] Lynam, J. K., and Herdt, R. W. 1989. Sense and sustainability: Sustainability as an objective in international agricultural research. *Agricultural Economics*, 3(4): 381–398. DOI: [https://doi.org/10.1016/0169-5150\(89\)90010-8](https://doi.org/10.1016/0169-5150(89)90010-8)
- [15] Muganda, M., et al. 2017. The Role of Local Communities in Tourism Development: Grassroots Perspectives from Tanzania. 9274. DOI:<https://doi.org/10.1080/09709274.2013.11906553>
- [16] Niringiyimana, J., and Murindwa Rutanga, W. M. 2019. Chapter Eight Oil Discovery and Large Scale Land Acquisitions in Uganda: An Examination of the Implications for Livelihoods in Selected Oil Village Communities. *Grid-Locked African Economic Sovereignty: Decolonising the Neo-Imperial Socio-Economic and Legal Force-Fields in the 21st Cen*, 216.
- [17] Nost, E. 2013. The Power of Place: Tourism Development in Costa Rica. *Tourism Geographies*, 15(1): 88–106. DOI:<https://doi.org/10.1080/14616688.2012.699090>
- [18] OMT. 2004. Indicators of Sustainable Development for Tourism Destinations. In *Tourism's potential as a sustainable development strategy*. Proceedings from the 2004 WTO tourism policy forum at the George Washington University, Washington, DC, USA, 18-20 October 2004. DOI:<https://doi.org/10.1007/s13398-014-0173-7.2>
- [19] Purwandana, D., et al. 2014. Demographic status of Komodo dragons populations in Komodo National Park. *Biological Conservation*, 171: 29–35. DOI:<https://doi.org/10.1016/j.biocon.2014.01.017>
- [20] Rashid, T. 2020. Local Community and Policy Maker Perspectives on Sustainable Livelihoods, Tourism, Environment and Waste Management in Siem Reap/Angkor, Cambodia. *International Journal of Asia-Pacific Studies*, 16(1): 1-37. Available at: <http://ijaps.usm.my/wp-content/uploads/2020/01/IJAPS1612020A11-37.pdf>
- [21] Resosudarmo, B. P., and Yusuf, A. A. 2009. Survey of recent developments. *Bulletin of Indonesian Economic Studies*, 45(3): 287-315. DOI:<https://doi.org/10.1080/00074910903301639>
- [22] Rongna, A., and Sun, J. 2020. Integration and sustainability of tourism and traditional livelihood: A rhythmanalysis. *Journal of Sustainable Tourism*, 28(3): 455–474.
- [23] Roos, C., Cilliers, D., Retief, F., Alberts, R., and Bond, A. 2020. Regulators' perceptions of environmental impact assessment (EIA) benefits in a sustainable development context. *Environmental Impact Assessment Review*, 81, 106360.
- [24] Sahoo, S. S. S. 2019. Enhancing Entrepreneurship in Rural Tourism for Sustainable Development: A study on Hirapur Village of Odisha. *Siddhant-A Journal of Decision Making*, 19(1): 17–23.

- [25] Sindiga, I. 1995. Wildlife-based Tourism in Kenya: Land use conflicts and govenment compensation policies over protected areas. *The Journal of Tourism Studies*, 6(2): 45–55.
- [26] Su, M. M., Wall, G., Wang, Y., and Jin, M. 2019. Livelihood sustainability in a rural tourism destination-Hetu Town, Anhui Province, China. *Tourism Management*, 71: 272–281.
- [27] Suchet, A., & Raspaud, M. (2010). A case of local rejection of a heritage tourism policy: Tourism and dynamics of change in Abondance, French Alps. *International Journal of Heritage Studies*, 16(6): 449–463. DOI:<https://doi.org/10.1080/13527258.2010.505038>
- [28] Zhang, Y., Xiao, X., Zheng, C., Xue, L., Guo, Y., and Wu, Q. 2019. Is tourism participation in protected areas the best livelihood strategy from the perspective of community development and environmental protection? *Journal of Sustainable Tourism*, 1–19.
- [29] Zhuang, X., Yao, Y., and Li, J. J. 2019. Sociocultural Impacts of Tourism on Residents of World Cultural Heritage Sites in China. DOI:<https://doi.org/10.3390/su11030840>

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