



## The role of tourism-related organisation networks in developing sustainable community livelihoods

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Received: 28 April. 2016, In Revised form: 9 Sept. 2016, Accepted: 10 Sept. 2016, Available online: 1 Oct. 2016

### Abstract

This study aims to investigate the effect of environmental and non-environmental roles of tourism organisations in protecting environmental natural resources and developing sustainable community livelihoods. A questionnaire was used to collect data from 510 employees of tourism-related organizations involved in managing tourism's environmental impacts on Hurghada, through a purposive convenient sampling approach. The results revealed a strong environmental role versus poor non-environmental role contributing to the sustainable livelihood outcomes. The study integrated sustainable livelihoods (SL) approach and collaboration theories to examine the role of a network of tourism-related organisations in improving Hurghada's local community livelihoods.

**Keywords:** Tourism organisations, sustainable livelihoods approach, collaboration, environmental protection, Structural equation modelling, Egypt.

### 1. Introduction

It has been argued that development could promote conservation, and that, rather than local communities paying the cost for conservation, they could benefit from it. Hence, if tourism is to support conservation and livelihoods, efforts to manage it must be made through frameworks [5]. The sustainable livelihoods (SL) approach can be seen as an analytical framework dealing with the dynamic dimensions of poverty and well-being [6]. It establishes a typology of assets through which poor individuals, households and communities deploy to sustain well-being under varying circumstances [36]. It supposes that when local community's livelihoods are secure, they will be less likely to resort to practices damaging the environment [13]. This is confirmed by Ashley and Roe who stated that poverty is not only a matter of lack of income, it has been also viewed as a function of lack of individual capabilities[3], such as education or health, that enable individuals to accomplish a fundamental level of human well-being [52]. Krantz, included other dimensions of poverty including illiteracy, lack of social services, natural and institutions' capitals, as

well as a state of vulnerability and feelings of powerlessness in general [28].

Organisations in tourist destinations have a collective role in protecting the natural resources and preserving the environmental assets. In addition to their environmental role, organisations have a non-environmental role that contributes to improve the livelihoods of poor people. This study aims at investigating the contribution of environmental and non-environmental roles of tourism-related organisations in improving the sustainable livelihood outcomes for local community of Hurghada, Egypt. The main contribution of the study is to draw the attention of relevant organisations that working on the principle of the integration of sustainable livelihoods approach and collaboration theories could help achieve the livelihood outcomes, particularly when these outcomes require involving various organisations.

### 2. Literature review

## 2.1 Conservation and the development of sustainable community livelihoods

There is a significant relationship between the economic success of tourism and the quality of the environment [22]. The environment is the most important factor in satisfying the needs and desires of tourists and establishing economically sustainable prosperity for tourism [18]. Moreover, environmental conservation leads to economic growth, which generates employment and more income opportunities, which in turn help individuals to invest in their families' health care, education and other assets [37]. Thus, conservation can assist by reducing vulnerability and empowering people, and can act as a source of pride for them [9].

It is claimed that improving the sustainability of community livelihoods for future generations is entirely dependent on the conservation of natural resources and that ecosystem depletion and species extinction will decrease our capacity to react to future pressures such as climate change [40]. According to [43], linking local people's activities to natural resources should enhance the value of biodiversity for them, encouraging them to take actions to mitigate both internal and external threats to it. [41] stated that there are important reasons to link the conservation of natural resources with poverty reduction: (1) Investment in the conservation of the natural environment can contribute to eliminating poverty. (2) Addressing poverty concerns leads to increased support for conservation. (3) Poverty reduction is an international imperative.

Tourism has contributed in achieving the twin goals of poverty eradication and conservation through the development of new types of tourism. Examples include nature-based tourism, ecotourism and sustainable tourism, which have been promoted as environmentally secure ways for local communities to create alternative income opportunities from natural resources [17], [24]. According to [35], environmental degradation and the depletion of natural resources associated with tourism activities can be critical challenges in tourism-rich areas. Management of the natural environment so as to reverse this trend is therefore one of the most complicated problems facing governments at various levels. To mitigate the negative influences and enhance the positive ones, involved organisations need to collaborate to maximize the positive effects and reduce the negative ones.

## 2.2 The role of organisations in improving livelihood of local tourism communities

The role of tourism-related organisations involved in environmental protection and the management of tourism varies from the environmental role that includes all the activities to protect the natural assets and environment to the non-environmental role implying roles and responsibilities of organisations regarding community service (i.e. providing education, health services, clean water, electricity and other public services) [7], [20], [48], [49], [50].

The environmental role according to [33] implies the involvement of tourism-related organisations in various

projects aimed at protecting the natural environment, particularly in coastal areas. Among these projects, we have the instigation of zone marine areas to ensure safe water sports and to protect sensitive natural areas. This involves the separation of incompatible uses (such as swimming and boating), directing users to appropriate areas (such as the best dive sites) and protecting particularly sensitive areas (such as fish nurseries). Another project is protecting the coral reefs by providing moorings for vessels. Mooring buoys are an essential tool for limiting anchor damage to coral reefs. When integrated into a dive site management plan, mooring buoys can be used to keep dive site use within estimated carrying capacities. By monitoring the use of buoys, a record of the locations and intensity of diving activity can be maintained.

Further projects include the design of environmentally appropriate access for the use and enjoyment of marine ecosystems. Access to the coastal features that are attractive to visitors depends on the site itself – its vulnerabilities, its dangers and its specific physical features. Thus, it is important to provide safe and environmentally appropriate access for visitors, especially those with special needs, including young children, the elderly and those with disabilities. The design of artificial lagoons to avoid environmental impacts and ensure good water quality is another concern. The lagoon design is an important factor in the planning of the tourism activities. This lagoon system maintains attractive and healthy water quality and avoids stagnant water areas with excessive sedimentation, algal growth and other negative characteristics.

Additionally, the design of jetties and marine structures to minimize the impact on ecosystems is another issue. Jetties should be constructed in sheltered or semi-sheltered areas, especially if access to boats is required. Prior to the selection of the jetty location, site reconnaissance studies should be carried out by specialized coastal/harbour engineers to identify the most appropriate locations. The location and design of marinas should to respond to site conditions and provide public access. An ideal marina site is protected from wave exposure from all directions, provided with protected access, and enjoys a comfortable wind and wave climate within the marina itself.

To sum up, the environmental role of organisations and the network of organisations could help establish mechanisms for minimizing and mitigating human impact on the environment's natural resources, providing financial and technical support, in addition to information and research to build and improve natural resources, increase ability of institutions to effectively monitor the natural environment, encourage local communities to participate in environmental natural resources protection, implement solid waste management systems, manage the coastal setback lands, prepare/enforce regulations governing pollution control, shoreline remediation and other environmental management activities, contribute to the protection of coral reefs, biodiversity, maintaining

cleanliness, and determine the carrying capacity of the coastal areas and water bodies [15], [32], [38].

As for the non-environmental role of organisations, it refers to roles and responsibilities carried out by the tourism-related organisations and associations with regard to community service that are not linked directly to maintaining natural resources. It shows what actions have been undertaken to secure residents' livelihoods, by the tourism-related organisations involved in the protection of environmental and natural resources. According to [49], [51], [20], these roles include supporting the training of local community members to qualify the workforce in the tourism industry, addressing health needs of the local community, addressing educational needs of the local community, supporting local communities through the use of products, services and facilities of the local community in tourism, contributing to the creation of jobs for residents of the local community, and working with other organisations involved in the field of environmental protection to preserve the natural resources.

### 2.3 Sustainable livelihoods outcomes

The sustainable livelihoods (SL) approach is a tool to improve the understanding of livelihoods, particularly the livelihoods of the poor [12]. The main objective of SL approach is to increase the institutions' effectiveness in poverty reduction by seeking to mainstream a set of core principles and a holistic perspective of support activities to correspond to issues of direct relevance for improving poor people's livelihoods [28]. Livelihood outcomes are the output of livelihood strategies leading to more income and more economically sustainable livelihoods, increased well-being, reduced vulnerability and more sustainable use of the natural resource base [1].

Livelihood security is the best shorthand for poor people's objectives. Examples of livelihood outcomes include increasing income for poor people, increased well-being, reduced vulnerability [2], and more sustainable use of the natural resource on which people's livelihoods depend [44], [46]. Additional outcomes include creating a heightened sense of well-being among residents, improving understanding of the values of environmental/natural resource conservation, improved biodiversity conservation in the tourist destination, protected coral reefs, creating jobs for residents of the local community and involving the local community in maintaining the natural resources [32].

### 2.4 The study's setting

Hurghada, the famous tourist city in Egypt, was selected as the setting of this study for two main reasons. The first is that Hurghada's economy has undergone a complete transformation from being fisheries-based, to a diving tourism dependent economy, with about 95 per cent of its local economy dependent upon the tourism industry [47]. The second reason is the importance of tourism's dependence on Hurghada's natural resources, combined with the occurrence of negative impacts which may negatively affect the viability of the industry if not

conserved. It is imperative that the local community is encouraged to adopt more sustainable livelihoods.

The sampling frame for this study consists of all the involved tourism-related organisations' employees in Hurghada. Criteria for selecting organisations are: organisations which have interests related to tourism and roles in managing tourism's environmental impacts in Hurghada city, organisations with an active role in maintaining the basics of natural tourist attractions, organisations which participate directly in distributing or organizing access to tourism-related natural resources in Hurghada, organisations which have participated in reducing poverty in the Egyptian local community in Hurghada, local/international organisations which have introduced special programmes in environmental protection and the management of tourism in Hurghada, and organisations which have direct and indirect roles over the management of natural resources in Hurghada.

Drawing on these six criteria, twelve organisations and associations have been selected in this study, six are governmental organisations, three are non-governmental, and three are international. The governmental organisations are: Egyptian Ministry of Tourism (EMT), Tourism Development Authority (TDA), Egyptian Authority for Tourism Promotion (EATP), Egyptian Environmental Affairs Agency (EEAA), Egyptian Authority for Shore Protection (EASP), and Red Sea Governorate (RSG). Non-governmental organisations include Hurghada Environmental Protection and Conservation Association (HEPCA), Abu Salama Society (ASS), and The Chamber of Diving and Water sports (CDWS). International organisations are United States Agency for International Development (USAID), Global Environment Facility (GEF), and United Nations Development Programme (UNDP).

This study targeted employees of the twelve selected organisations based on the criteria of their position (managerial position, below managerial position or an equivalent role) who are involved in managing tourism's environmental impacts in Hurghada, and those whose main activities include the environmental protection and management of tourism; the delivery of health care and educational services; and the provision of clean and portable water and an energy supply to the indigenous community. Face to face, 555 questionnaires were distributed to tourism organisations' employees, 23 were excluded because of missing data, and 532 were retained for analysis purposes. The PLS-PM methodology with PLS (version 5) was used to test the hypotheses of the study.

## 3. Research framework and hypotheses development

According to [39] tourism-related organisations have relationships with partners such as suppliers, distributors, competitors, public and governmental organizations, non-governmental organizations, customers, hotels, transporters and other agencies and institutions engaged in complementary activities. These relationships include associations, partnerships, alliances, and general cooperation. Collaboration can be employed successfully

to resolve conflicts or advance a shared vision when stakeholders recognize the potential benefits of working with each other [23]. Here, according to [16], [30], collaboration can be defined as a process of joint decision-making between the key actors, through which those with different perspectives on an issue can examine their differences constructively and look for suitable solutions that go beyond their individual, limited visions of what is possible.

A collaborative network is viewed to have been established if synergy has occurred among the partners [39]. Hence, working towards the desired outcomes of a collaborative network is more efficient and sustainable

than working in isolation. This study integrates SL approach and collaboration theories to examine the roles of heterogeneous actors in a network of tourism organisations involved in the development of sustainable community livelihoods. Each actor has specific aims and goals that require coordination, commitment, communication, partnerships, collaboration and, ultimately, networks. This collaboration of organisations with has environmental and non-environmental roles that help in achieving the livelihood outcomes. Achieving these outcomes leads to satisfaction of actors on their performance (Figure 1).

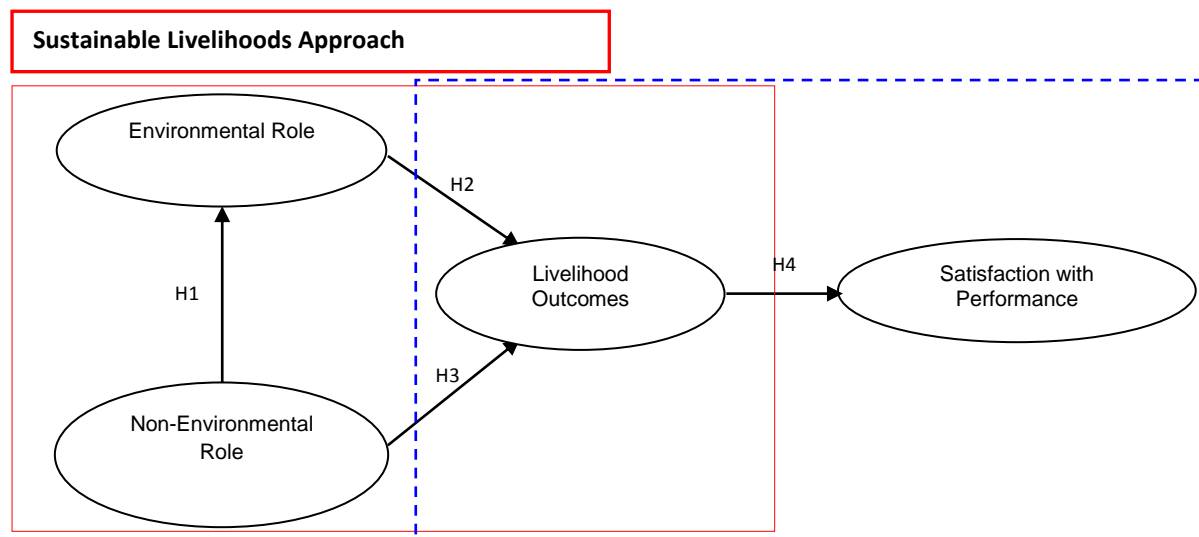


Fig. 1: Research framework

Four constructs were included in the research framework: environmental role, non-environmental role, livelihood outcomes, and satisfaction. Satisfaction refers to the extent to which tourism-related organisations are satisfied with their performance in managing tourism’s environmental impacts and encouraging more sustainable livelihoods. Drawing upon this research framework, four hypotheses were developed as follows:

- H1. The non-environmental role of tourism organisations affects their environmental roles contributing to livelihood outcomes.
- H2. The environmental role of tourism organisations has a positive impact on achieving sustainable community livelihood outcomes.
- H3. The non-environmental role of tourism organisations has a positive impact on achieving sustainable community livelihood outcomes.
- H4. The tourism organisations satisfaction of the overall performance is dependent on achieving the sustainable community livelihood outcomes.

### 3.1 Measures

The study has developed a questionnaire instrument for data collection purposes. The questionnaire comprised four latent variables. The first is environmental role (ER), indicating actions taken by organisations network to protect natural resources. The construct is designed based on [11], [8], [31]. The second construct is Non-environmental role (NER), referring to roles and responsibilities carried out by the tourism-related organisations with regard to community service. It is developed based on [51] and shows what actions have been undertaken to secure residents’ livelihoods, by the tourism-related organisations involved in the protection of environmental and natural resources. The third is sustainable livelihoods outcomes (SLAs), indicating the outcomes achieved to secure the necessities of life for the long term. It is based on [30], [10]. The fourth construct is the overall performance satisfaction (PERFM). It refers to the extent to which the networks are satisfied with their overall performance and outcomes. It is adopted from [21] (Table 1).

**Table 1. Constructs of the study**

<b>Environmental Role (ER) (11 items)</b>
<u>Establishes</u> mechanisms for minimizing and mitigating human impact on the environment's natural resources
Provides support (financial, technical, information and research to build and improve Hurghada's natural resources
Increases ability of institutions to effectively monitor the natural environment
Encourages local communities in the region to participate in environmental natural resources protection
Implements solid waste management systems
Manages the coastal setback lands and other common spaces within the tourism centre to ensure public access
Prepares regulations governing pollution control, shoreline remediation and other environmental activities
Contributes to the protection of coral reefs
Contributes to the protection of biodiversity
Contributes in maintaining the cleanliness of the environment in Hurghada
<u>Determines</u> the carrying capacity of the coastal areas and water bodies
<b>Non-Environmental Role (NER) (6 items)</b>
Supports the training of local community members to enter the workforce in the tourism industry
Addresses health needs of the local community in the region
Addresses educational needs of the local community in the region
Supports local communities through using products, and services of the local community in tourism
Contributes to the creation of jobs for residents of the community in Hurghada
<u>Works</u> with other organisations network to preserve the natural resources in Hurghada
<b>Sustainable Livelihoods Outcomes (SLAs) (10 items)</b>
Increased incomes
Reduced the vulnerability of households and communities to shocks and stresses
Reduced job insecurity
Ensuring the sustainable use of natural resources
Created a heightened sense of well-being among residents in the region
Improved understanding of the values of environmental/natural resource conservation
Improved biodiversity conservation in the tourist destination
Protecting Hurghada's coral reefs
Created jobs for residents of the community in Hurghada
The local community has contributed and is involved in maintaining the natural resources
<b>Satisfaction with Overall Performance (PERFM) (5 items)</b>
So far, this network can be regarded as successful
So far, all the network's goals have been achieved
So far, the network's output is of high quality
The network(s) is satisfied with its performance to this point
So far, the network's main actors are satisfied with overall performance

### 3.2 Validity and reliability

The questionnaire was piloted on 50 of the target respondents to validate the constructs of the study. The purpose of the piloting was to refine the questionnaire so that the target participants will have no difficulties in answering the questions and there will be no problem in recording the data. The 50 returned questionnaires were coded and entered into SPSS (version 22) to test the reliability (internal consistency) and validity of the variable scales [34]. Cronbach's alpha ( $\alpha$ ) and corrected item-total correlation were used to measure the reliability and validity of constructs. Item-total correlation is a method commonly used to examine the homogeneity of a scale made up of several items. Reliability analysis was performed on the four constructs and turned out to be highly reliable. Corrected item-total correlations were sufficient, indicating that no item was redundant, and thus no items were deleted for the first three latent variables: environmental role, non-environmental role and

sustainable livelihood outcomes. Regarding the fourth construct, satisfaction with overall performance, two items were excluded, they are: the network(s) is satisfied with its performance to this point, and so far, the network's main actors are satisfied with overall performance. The overall number of items included in the final questionnaire is 30 items measuring four constructs.

## 4. Material and Methods

### 4.1 The methodology, research population and sample

This study aims to investigate the effect of environmental and non-environmental roles of tourism organisations in protecting environmental natural resources and developing sustainable community livelihoods. Accordingly, analysis of such relationship is required and will be pursued through the application of PLS-SEM. The PLS-SEM methodology is adopted to maximize the variance of all endogenous/dependent

variables instead of employing the model to explain the covariance of all the items [25]. PLS- The paper hypothesized conceptual; framework consists of four latent variables with 32 questions/items.

The study adopted a purposive convenient sampling approach. In this type of samples, there are less errors [45]. Moreover, using Structural Equation Modelling (SEM) required a specific number of observations to run the research model and to get valid results. The literature recommends a minimum of five observations to each variable to use a data set for statistical analysis [4]. Structural Equation Modelling (SEM) was used to analyze the collected data. 32 items/indicators of the proposed conceptual framework of the study needed a least of 160 observations. Face-to-face, the researchers distributed 585 questionnaire forms; 533 were collected, giving a 91.1% response rate. A further 23 observations were excluded

because they had missing data providing a total sample of 510 [27].

For the study conceptual framework's validation, a positivist research philosophy was employed with a quantitative approach, in which the quantitative data were collected based on questionnaires to address different stages of the paper. Figure 1 shows the findings of the data collection stage.

**5. Analysis and findings**

**5.1 Descriptive statistics**

Table (2) depicts to the means and standard deviations of the constructs of the research model. It is found that the mean values are greater than 4 (agree) meaning that respondents agree to the roles and achieved outcomes and that they are satisfied with the performance of their organisations. Standard deviations refer to the normal distribution of data within each construct.

**Table 2:** Descriptive statistics for each construct

Constructs	items	Mean	Std. Dev.
Environmental Role (ER)	11	4.361	1.019
Non-environmental (NER)	6	4.396	2.101
Sustainable Livelihoods Outcomes (SLAs)	10	4.351	2.037
Satisfaction Overall Performance (PERFM)	3	4.256	1.697

**5.2 Discriminant and convergent validity**

Discriminant validity is assumed when the extracted variance is greater than the squared correlation among constructs [26]. By looking at the loadings between constructs, it can be noticed that discriminant validity is evident (Table 3).

To test the convergent validity, Table (3) shows that all constructs are above the 0.5 threshold, meaning that the measurement constructs signify adequate convergent

validity [34]. Furthermore, to measures estimate internal consistency (construct reliability): Cronbach's alpha and composite reliability and both should be greater than 0.7 for acceptable reliability, 0.80 to be adequate and 0.90 is excellent [19], [26], [42]. Table 3 illustrates that the composite reliability and Cronbach's alpha coefficients for all constructs are adequate. The full VIFs for constructs are below 5 and collinearity problems are absent in the measurement model [25].

**5.3 Structural relationships**

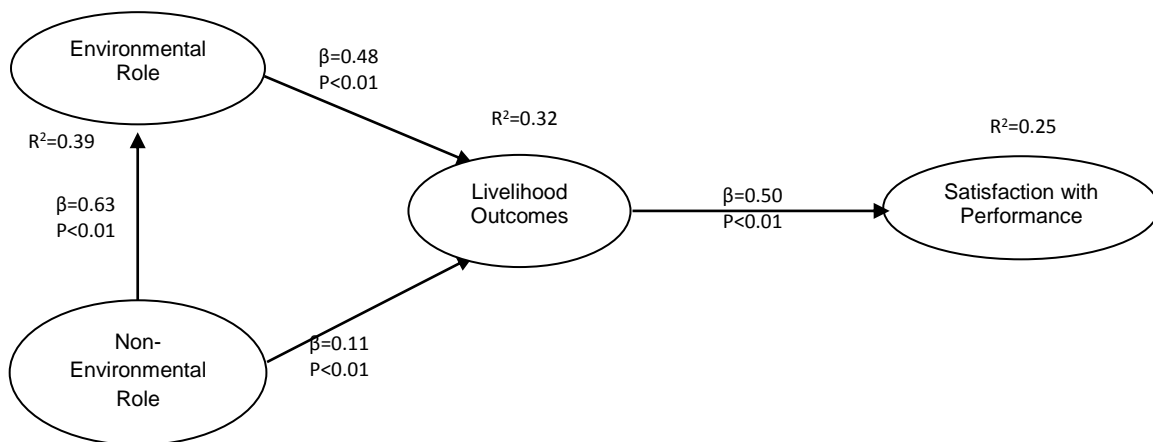
Figure 2 demonstrates results of path analysis. The model illustrates the latent constructs relationships of this current study. For the model fit indices, Average Path Coefficient (APC), Average R-squared (ARS), and Average Variance Inflation Factor (AVIF) are provided by WarpPLS. APC=0.428, P<0.001, ARS=0.320, P<0.001, and the AVIF=2.159 (lower than 5) and the model fit is evident [25].

From Figure (2), it is clear that the non-environmental role has a strong positive effect on the environmental role of organisations ( $\beta=0.63$  and  $P<0.01$ , effect size=0.392) (H1 supported). The environmental role has a medium

positive effect on the livelihood outcomes ( $\beta=0.48$  and  $P<0.01$ , effect size=0.268) (H2 supported). The non-environmental role has a medium positive effect on the livelihood outcomes ( $\beta=0.11$  and  $P<0.01$ , effect size=0.188) (H3 supported), and livelihood outcomes have a medium positive effect on satisfaction with performance ( $\beta=0.50$  and  $P<0.01$ , effect size=0.250) (H4 supported). The non-environmental role explains 39% of variance in environmental role ( $R^2=0.39$ ). Environmental and non-environmental roles explain 32% of variance in livelihood outcomes ( $R^2=0.32$ ), and livelihood outcomes explain 25% of variance in satisfaction with performance.

**Table 3:** The Measurement model

Constructs	Indicator	Indicator Loading	P Value	Indicator VIFs	AVE	Cronbach's Alpha	Composite Reliability	Constructs Full VIFs
Environmental Role	ER1	0.732	<0.001	3.512	.504	0.834	0.869	1.296
	ER2	0.790	<0.001	4.219				
	ER3	0.824	<0.001	4.508				
	ER4	0.843	<0.001	3.623				
	ER5	0.795	<0.001	3.887				
	ER6	0.707	<0.001	4.138				
	ER7	0.556	<0.001	2.429				
	ER9	0.549	<0.001	2.130				
	ER10	0.556	<0.001	2.524				
	Sustainable Livelihood Outcomes	SLAs1	0.576	<0.001				
SLAs2		0.595	<0.001	4.175				
SLAs3		0.649	<0.001	3.272				
SLAs4		0.694	<0.001	3.330				
SLAs5		0.744	<0.001	3.591				
SLAs6		0.738	<0.001	3.259				
SLAs7		0.712	<0.001	3.641				
SLAs8		0.655	<0.001	3.969				
SLAs9		0.583	<0.001	3.917				
SLAs10		0.593	<0.001	2.530				
Non-environmental Role	NER1	0.731	<0.001	2.487	0.586	0.843	0.889	1.205
	NER2	0.846	<0.001	4.163				
	NER3	0.882	<0.001	4.019				
	NER4	0.876	<0.001	4.668				
	NER5	0.778	<0.001	3.184				
	NER6	0.542	0.001	1.194				
Overall satisfaction	PERFM1	0.820	<0.001	1.891	0.732	0.815	0.891	1.256
	PERFM2	0.928	<0.001	2.837				
	PERFM3	0.814	<0.001	1.841				



**Fig. 2:** The Structural Model

## 6. Discussion of findings

The roles of tourism and tourism-related organisation vary from environmental to non-environmental. Many organisations have a main goal of preserving and protecting the environment and natural resources. The same goal of different organisations means they form collaboration or network even if they are not formally collaborated. This assumption is true for the Egyptian tourist city, Hurghada, in which a network of organisations, whether tourism or related organisations, plays what is so called 'environmental role'. This role, certainly, positively affects the livelihoods of poor people of the local community. Simply, preserving and protecting the environment and natural resources in Hurghada implies the sustainability of tourism on which 95% of local community people depend as a main source of income. Therefore, the environmental role is indirectly affecting the livelihood of local community people. This study, empirically, has proved that the environmental role of organisation has direct significant impact on the livelihoods. This finding is in line with [33] who stated that organisations are involved in many projects aiming at protecting and preserving the environment and natural assets and helping improve the livelihood of local community.

Looking at the role of tourism organisations in Hurghada, it is found that tourism-related organisations are involved in managing tourism's environmental impacts. They establish mechanisms for minimizing and mitigating the human impact on the environment's natural resources, encourage local communities in the area to participate in environmental natural resource protection; implement solid waste management systems, manage the coastal setback lands and other common spaces within the tourism centre to ensure public access, enforce regulations governing pollution control, shoreline remediation and other environmental management activities, and determine the carrying capacity of the coastal areas and water bodies. This interprets the strong environmental role of organisations in improving the livelihoods of Hurghada's local community. This result is concurrent with the findings of [29], [15], [38], [40], who show that natural resource conservation and monitoring efforts provide opportunities to improve the livelihood outcomes of future generations.

In addition to their environmental role, organisations have a non-environmental role that helps improve the local community livelihoods. This role includes supporting the training of local community members to enter the workforce in the tourism industry, addressing the health needs of the local community in the region, supporting local communities by allowing them the use of tourism products, services and facilities, and contributing to the creation of jobs for residents of Hurghada. These results are in line with [49], [50], [50], [20] who confirmed the non-environmental role of organisations. However, the results reveal that the non-environmental role played by tourism-related organisations have poorly contributed to the livelihoods outcomes of the local community. This poor contribution may be a result of the

organisation's focusing mainly on their environmental role and leaving other non-environmental roles to specified authorities. Another reason could be the absence of effective coordination between the governmental authorities and other network organisations, resulting in a failure to effectively contribute to livelihoods of local community.

Furthermore, despite the poor contribution of non-environmental role to local community livelihoods, it moderately contributes to success of the environmental role of organisations. Increasing income, raising awareness, supporting educational and health services could certainly be reflected to the local community awareness of protecting and preserving the natural environment and natural assets. Collaboration of organisations, governmental, non-governmental and international, can produce better returns in protecting and conserving the environment than can be achieved by businesses and organisations acting in isolation.

It can be concluded that the environmental and non-environmental roles complement one another. The environmental role is crucial because it represents a key element of the tourism industry in Hurghada. At the same time, non-environmental factors, such as basic infrastructure, education, and health, are crucial. As a result, both roles (environmental and non-environmental) are necessary for offering continued support to the tourism industry in Hurghada, maintaining a type of tourism that is conducive to maintaining and securing the livelihoods of the local community in the long term. However, in order to achieve success in their environmental and non-environmental roles, it is essential that the relevant tourism-related organisations build strong relationships with each other. By viewing the roles and performance of organisations, it is possible to ascertain satisfaction with the overall performance of the tourism-related actor-networks. However, the achieved roles are poorly contributing to the overall satisfaction of organisations' performance, and hence, stronger roles should be collaborated.

## 7. Conclusion and implications

To sustain local community's livelihoods in Hurghada, Egypt, protecting environment and preserving natural assets guarantees continuity of the tourist activity as well as the community livelihoods. Achieving sustainable community livelihoods requires the collaborative role of the tourism organisations involved in the development of sustainable community livelihoods. The results reveal that organisations have a strong environmental role, while having a poor non-environmental one to contribute to local community livelihoods. However, an effective coordination among actors of the network could improve both roles and their contribution to the local community livelihoods.

Broadly, it was found that achieving environmental protection and tourism development required different actors to play collaborative roles. In this study, there is a trial to connect the SL with tourism-related organisations, collaboration theories, environmental protection and



tourism development in Hurghada's coastal region. Theoretically, the main intention is to provide a broad vision in managing tourism's environmental impacts in Hurghada and the importance of the tourism-related organisations' network in achieving successful outcomes in this area.

From a practical point of view, the findings provide an understanding of the tourism-related organisations' collaborative network, and their role in improving sustainable livelihoods aimed at helping the tourism industry to protect the main assets required for the survival of Hurghada's tourism. The findings highlight the

importance of strengthening and maintaining the role of network of tourism-related organisations in the development of sustainable community livelihoods.

### 8. Limitations and future research

This study has not investigated the factors and causes affecting the effectiveness and success of organisation network. Thus, further research should consider critical success factors that could play an important role on improving the success of tourism organisations' role and outcomes.

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