
Integrated quality management and sustainability for enhancing the competitiveness of tourism in Egypt

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Abstract: Improving the quality of Egyptian tourist destinations is essential in satisfying tourists' needs, making the Egyptian tourism industry more competitive, and ensuring that tourism development is in a balanced and sustainable way. This research aims to explain how Integrated Quality Management (IQM), as an integrated management tool, can improve the level of sustainability in Egyptian tourism to enhance competitiveness. Statistical tests such as reliability, statistical mean, Q_i^2 test, regression analysis and the Analysis of Variance (ANOVA) have been used to examine the research findings. The findings reveal that the level of indicators of IQM and of sustainability in Egyptian tourism is weak because the level of cost and externalities of tourism development is high and the transport system is poor and operates in an inefficient manner. Together, IQM and sustainability provide the basis for building community, industry and agency capacity to manage tourism resources in a more integrated manner to improve the competitiveness of Egypt as a macro tourist destination.

Keywords: Integrated Quality Management; IQM; destination; competitiveness; sustainability; Egypt.

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1 Introduction

The Integrated Quality Management (IQM) of a tourist destination is an approach which simultaneously takes into account and has a favourable impact on the activities of tourism professionals, tourists, the local communities and the environment (*i.e.*, the natural, cultural and man-made assets of the destination (EC, 2000)). The IQM strategy implemented by the destinations has the requirements of tourists as one of its major considerations. The tourism industry is facing a heightened degree of competition among destinations on a global scale. Destination planners are struggling to cope with the complexities of competition (Ross and Wall, 2001; Poignée *et al.*, 2003; UNWTO, 2005). Compared to most circumstances of commercial competition involving typical goods and services, competition for tourist destinations is more multidimensional and must address not only economic issues but also sociocultural and ecological/environmental considerations (Hassan, 2000). Therefore, knowledge which can assist and guide this complex task is of particular interest to destination managers. Tourism requires to be managed through an IQM system that makes a destination able to face the severity of competition from other tourist destinations. The factors that need to be integrated in the Integrated Quality System (IQS) are the core resources and attractors, the strength of the destination's drawing power; the supporting factors and resources, the springboard for tourism development; the destination policy and strategy framework; destination management, the destination's ability to implement a tourism strategy; and the qualifying and amplifying determinants, factors which leverage or limit competitiveness (Crouch, 2006).

Tourism is one of Egypt's key engines of economic growth, contributing close to 8% of the country's GDP and 28% of total investments. The Egyptian tourism market share is approximately 25% in the Middle East region and about 1% of the global tourism market. Tourism is the highest single export earner in the Egyptian economy. Tourism receipts reached \$5.260 billion in value in 2004, accounting for 22% of Egypt's total exports of goods and services. If only the exports of services are taken into consideration, then the share rises to 39%. Tourism is a major contributor to the Egyptian economy in terms of its significant percentage of GDP and employment, amounting to 11.5% and 15% respectively (Mobarak, 2001; Egypt, 2003). Egypt must reposition its travel and tourism industry in order to capture the full value. Egypt as a macro tourist destination will face a strong degree of competition from other destinations in the Mediterranean area, such as Tunisia, Jordan, Israel and Turkey. IQM could be considered as a destination management approach that can give destination managers strategic information about the current situation and the risk of decline that can be easily interpreted and managed. It shows in a really effective way (by means of a series of snapshots) the evolution of the destination over time. It simulates by means of images (created with a simple interface) the effect of changes in variables. Tourists' quality of experience, even if depending on the selected tourist segment, is based on the destination's system as a whole (tourist resources and supply, economical and cultural environment) and is related to the general quality of life indicators (*e.g.*, tourist prices, tourist security, customer satisfaction and repeat) (EC, 2000). As far as tourists are concerned, however, the satisfaction derived from staying at a destination depends not just on their experience of tourist services, but also on more general factors, such as hospitality, safety and security, sanitation and salubrity, traffic and visitor management.

IQM can be seen as a systematic approach for internal quality and external quality, like economic improvement in the short term and local development in the long term. Internal quality is the value that tourists receive throughout the chain of experiences, characterising their visit from the initial information that they receive prior to departure to the 'after-sales' service. This chain includes private links (private services purchased directly at the market price) and public services such as general publicity, road maintenance, water management, public cleanliness, security, *etc.* Internal quality has short-term aims (Poignée *et al.*, 2003). External quality means the development of sustainable tourism with a rational and renewable use of resources such as territory, energy, water, natural resources and heritage, in order to prevent problems of congestion. The aim of external quality is one of long-term equilibrium (Go and Govers, 2000).

Egypt as a macro tourist destination has a wealth of assets to provide a distinctive appeal to tourists, combinations of activities (leisure activities, sports, cultural and natural heritage, cuisine, *etc.*), the sea and mountain, the sea and countryside, and so on (Eraqi, 2007b). At the same time, local residents are increasingly anxious to preserve their own identity, their environment and their natural historic and cultural heritage from the impact of uncontrolled tourism and its attached problems. Egypt's Red Sea Sustainable Tourism Initiative (RSSTI, 2003) features eight resort-wide environmental systems designed to achieve certification in the Green Globe. The RSSTI also involves projects to raise awareness and to increase the capacity of responsible tourism in Egypt. This paper tries to explain the importance of IQM as an integrated approach for enhancing sustainable tourism development in Egypt and to give a global view of the assessment of the IQM sustainability indicators in Egyptian tourism.

2 Literature review

Quality is a determining factor of the competitiveness of tourism and of its sustainable expansion. Tourism is a sector wherein an uneven distribution of benefits is clear, which is threatening the social, economic and environmental sustainability of tourism development (Diaz, 2001). This makes the need for the IQM approach very essential to balance the situation and to achieve the requirements of sustainability. Tourism is important for achieving the general objectives of the Egyptian tourism policy for socioeconomic development, namely the promotion of the Egyptian citizens' interests, growth and employment, economic development, the management of cultural and natural heritage, and the strengthening of the Egyptian identity. However, the quality of tourism can contribute to the sustainable development of coastal areas in Egypt through improving the competitiveness of the tourism business, meeting social needs, and preserving the cultural and natural environment (Hassan, 2000). To guarantee success in all these different aspects at the level of tourist destinations, it is vital to have a global approach focused on tourist satisfaction and based it on the principles of sustainability. This new approach is the IQM, which offers an opportunity to act on all three fronts, *i.e.*, economic development, environmental protection and preserving the identity of the local communities, by offering visitors a unique and original experience.

It was not until the 1990s that both tourism researchers and urban studies specialists distinguished the field of 'urban tourism' (Pearce, 2001; Page, 1995). According to Law (1994), tourism is not viewed by many researchers as a distinctive attribute associated with the main function of the city, but as a seasonal phenomenon without straight links to

the urban economic structure. It is true that although large cities have always been important tourist destinations, it was only during the 1980s that many urban centres realised the great importance of the tourism industry and tried to encourage the development of this sector. Although the travel industry functions with many peculiarities, it seems that it follows the development practices of the post-Fordism industrial model (Ioannides and Debbage, 1997). Being a form of industry, tourism retains the idea of trade with the objective of revenues. The products provided for tourists by a destination shape what we call the 'tourist experience'. This notion includes historic buildings, urban landscapes, museums and art galleries, theatres, natural activities, sports and events. Among the tourist destinations, cities are multifunctional in nature, attracting tourists with their genuine urban characteristics, such as nightlife, shopping and business. According to Pearce (2001), this is the reason why the tourist market in urban areas is less homogeneous than, for instance, in coastal areas or ski resorts. Consequently, the provision of the necessary services and facilities, together with the promotion of the specific destination, is more complex. As tourism is an industry developing through competition, destinations have to respond to the demand for comfort, reliability and quality in their tourism experience, and at the same time, advertise their abilities adequately. In addition, the emergence of cultural exploitation as the main scheme for the development of urban tourist destinations in Egypt is the alibi for local authorities to promote projects combining the allocation of cultural resources with physical and environmental renewal to enhance the quality of destination life for the inhabitants. IQM ensures their satisfaction and loyalty, and goes a long way towards satisfying residents' rightful aspirations for sustainable local development (Keane, 1996; Hawkins and Mann, 2007).

2.1 IQM strategy

The focus of most traditional quality management approaches is the individual tourist enterprise. For a destination, however, the number and range of actors involved necessarily require a systematic approach that takes account of visitors, those involved in the sector (internally and externally) and local people. Tourism requires a quality chain made up of a number of links like operators, travel agents outside the destination, passenger carriers and travel agents in the destination, hotels and other service providers (Christie and Crompton, 2001; Taylor *et al.*, 2003). Visitors will also be faced with a set of stimuli within the destination which, although not specifically designed for them, will have an impact on their perceptions, security, the state of the road, pollution of all kinds, local services (post, telephone), *etc.* For visitors, the service provided by the destination then takes the form of a global experience shaped by multiple, frequent and varied interactions between all the factors of the system (Ridley, 1995; Milne and Ateljevic, 2001).

Account therefore needs to be taken of the whole of a destination's tourism system, from the visitors' initial planning to their return from their stay. Any IQM initiative for a tourist destination will take account of (Keane, 1996; Christie and Crompton, 2001; Taylor *et al.*, 2003):

- economic development, in the broadest sense (including social aspects, employment, *etc.*)

- the environment, culture and heritage
- the market, in its universal sense
- the professional as well as the local communities concerned.

Collaboration is the precondition for the integration of every tourist body's efforts, and thus, for an IQM strategy, it is essential for a network industry such as tourism. In the long run, tourism is not possible without the integration of the environmental and cultural dimensions. Developing an IQM strategy requires close cooperation between all actors in the public and private sectors, as well as between all the sectors of activities and at all levels of responsibility: local, national, regional and international organisations. Adaptive management is essential for designing and implementing an IQM strategy. It is a process of defining actions, decision making and learning in which an organisation or group responsible for the sustainable tourism of a particular destination is responsive to the biophysical and social changes and is able to respond quickly and appropriately to such changes (Salafsky *et al.*, 2001). The success of an IQM strategy will depend on its ability to understand and react to the complex and dynamic ecological and social environment in a given destination. A framework for systematic analysis and learning is essential (Husband and Mandal, 1999).

2.2 *The guiding principles of the IQM of sustainable tourism*

The internal culture of a tourist organisation/company is seen to be a factor affecting the receptiveness of its staff to customers, and thus the quality of tourist services it provides. Similarly, it is argued that a host community that is positively disposed will enhance the tourists' experience and contribute to the destination's attractiveness (Fredline and Faulkner, 2000). So, the quality of life and equity outcomes within a community will have a significant bearing on the local people's perceptions, and a planning or management strategy sensitive to community needs is an essential ingredient of sustainable tourism development.

The World Tourism Organization explains that sustainable development has to be based on building a relationship between the tourism industry, the environmental systems and the local community's main principles of sustainability (Mowforth and Munt, 1998; EC, 1995). It is necessary to formulate new forms of public-private sector partnership and provide an integrated technical support and assistance programme (Ross and Wall, 2001). It is also vital to increase the degree of awareness of the importance of sustainable development for the local community, design suitable indicators for sustainability in tourism, choose specific areas for sustainable tourism development to concentrate on, manage mass tourism at cultural heritage sites, focus on priority environmental issues and gather completed information on those issues, taking into account the causes as well as the impacts on humans and nature (EC, 1995; Christine and Buswell, 2003; Eraqi, 2007a). The main guiding keys can be summarised as follows:

- Tourism needs to be developed and managed in a sustainable manner and must aim to generate benefits for the local communities.
- Tourism should contribute to the sustainable development of coastal areas and the surrounding ecological and cultural environments.
- Tourism should be fully integrated in the coastal areas' management plans.

It is important to improve the management and development of tourism by ensuring coordination and cooperation between the different agencies, authorities and organisations concerned at all levels and ensuring that their jurisdictions and responsibilities are clearly defined and complement each other (Salafsky *et al.*, 2001). Integrity coordination and cooperation can (Fredline and Faulkner, 2000; Foster, 2001):

- strengthen the coordination of tourism policy, planning development and management at both national and local levels
- strengthen the role of the local authorities in the management and control of tourism, including providing capacity development for this
- ensure that all stakeholders, including government agencies and local planning authorities, are involved in the development and implementation of tourism
- maintain a balance with other economic activities and natural resource uses in the area and take into account all environmental costs and benefits.

For a tourist destination competitiveness, the allocation of land uses and the regulation of the inappropriate activities that damage ecosystems by strengthening or developing integrated policies and management covering all activities, including Integrated Coastal Zone Management, and the adoption of an ecosystem approach (EC, 1995; Crauser, 1998; EC, 2000; Poignée *et al.*, 2003; UNWTO, 2005). This integrated management aims to:

- maximise the economic, social and environmental benefits from tourism and minimise its adverse effects through the effective coordination and management of development
- adopt integrated management approaches that cover all economic activities in an area, including tourism
- use integrated management approaches to carry out restoration programmes effectively in areas that have been damaged or degraded by past activities
- use the new tools provided by telemetric networks and electronic commerce to access the offers, demands and all relevant information that allow the choice of professionals partners and tourist destinations
- recognise that in the long run, tourism is not possible without the integration of the environmental and cultural dimensions.

Now it is clear that IQM is contributing to the nation's competitiveness. It helps in developing a dynamic tourism industry which is environmentally, socially, culturally and economically sustainable. It can provide direction for the integration of sustainability principles (IQM criteria). It includes the recognition of a finite cooperation for some activities at some sites, the competing requirements of tourism and outdoor recreation activities, ways of addressing cultural and amenity values for all sectors of a society and the need to monitor progress towards sustainability and competitiveness. IQM as an integrated approach requires the coordinated application of management tools, rather than the common focus on single tools, to solve part of a complex problem. Policymakers should ensure that their policies and actions for the development and management

of tourism fully embrace the principles of sustainability. The philosophy of the IQM approach is compatible with the World Tourism Organization UNWTO Consensus Building Approach, which is based on Hawkins and Elliott (2005):

- more structured coordination among all development assistance partners/stakeholders working in the tourist destination
- benchmarking and learning from the best practices across regions and sectors concerned with tourism and sustainable development
- common guidelines and instruments to assist with the implementation and evaluation of projects and programmes that use tourism as a tool for sustainable development.

IQM processes can be incorporated in five research stages:

Stage 1 Identify the destination partners/stakeholders

In this stage, the destination management needs to decide who the destination partners are and how they are linked and to divide the roles and tasks between them.

Stage 2 Designing suitable strategies and policies

The destination management needs to set its objectives and the overall dynamic strategy for the environment and sustainable development and for selecting human resources.

Stage 3 Action plan

The work is going to start with the interaction between partners. Public authority initiatives and the lead authority's services and support for professionals are decided in this stage. Tourism service offered by all partners before, during and after the visit are needed to be put into action.

Stage 4 Designing criteria for measurement

In this stage, management needs to design suitable indicators for measuring the level of tourist satisfaction, the satisfaction of tourism professionals, the local people's quality of life, the impact on the local economy and the impact on the environment. In other words, it needs to design the suitable indicators or criteria of IQM.

Stage 5 Evaluation and adjustment

Depending on the results of the IQM criteria, measurements evaluation and adjustment processes take place. Recommendations to the lead authority, and public and private operators are suggested.

3 Research methodology

Data was collected from different experts in tourism management. To collect data, the researcher designed a group of criteria from the literature about sustainable tourism and integrated management. These criteria were then filtered and adjusted based on the outcomes of the discussions with some experts from the Department of Research and

Training in the Ministry of Tourism (MOT) and the RSSTI in the Tourism Development Authority (TDA). After the experts agreed on a number of measures as the criteria for a destination integrated management as a way for sustainability, these criteria were included in a final survey.

The final criteria were included in a questionnaire designed to survey the viewpoints of 150 experts in tourism from tourism companies, the Ministry of Tourism in Egypt, the TDA and the Tourism Authority (TA). The survey was conducted during the winter of 2005 and spring and summer of 2006. The questionnaire forms were distributed among the interviewees in different places such as the Information Center of Ministers Council during a seminar about updating information and data on tourism; the Faculty of Law, Helwan University during the faculty annual conference on the legislation and economic aspects of tourism in Egypt and the Arab World; the TDA and the Faculty of Economics and Political Sciences, Cairo University during short courses for Tourism Ministry leaders. The questionnaire forms were distributed and re-collected by the researcher with some help from Tourism Ministry staff to guarantee a high response rate. Out of the 150 randomly selected tourist experts, 110 fully completed and returned the questionnaire forms, representing about a 73% response rate. Statistical tests such as reliability, statistical mean, Q_i^2 test, regression analysis and the ANOVA were used to examine the results of this paper (Cramer, 1998; Black, 1999).

4 Results and discussion

4.1 Sustainability criteria measurement of Egyptian tourism

4.1.1 Consistency of the scale

Depending on the reliability measurement of the sustainability survey's result, the Cronbach's alpha coefficient value of 0.626 shows a good internal consistency in the scale because the accepted alpha coefficient of 0.6 and above is acceptable, and 0.8 and above, exemplary. The inter-item correlation coefficients for most of the variables in the study are above 0.3 (Wood and Thomas, 2006).

The following table explains the statistical mean of the IQM criteria in Egyptian tourism.

It is clear from Table 1 that the level of achieving sustainable tourism in Egypt is accepted; 76.4% of respondents see that sustainable tourism has been achieved and 80% see that sustainable tourism projects yield economic and social benefits for local communities. Out of the total of respondents, 71.8% see that sustainable tourism initiatives preserve the local environment, while 67.3% see that sustainability protects wildlife and 57.3% of respondents concentrate on the quality of visit than visitor numbers. However, 54.5% of them see that there is no local involvement, 52.7% of them see that sustainability costs and externalities are still high, and 63.6% see that transport efficiency needs to be improved. For the criterion of waste minimising and recycling, 61.8% assume that it has been achieved.

According to Table 1, the statistical means for all IQM criteria range from 1.3455 to 1.7636 and the standard deviation ranges from 0.4018 to 0.5015. This indicates that the statistical means are less than the scale 'Yes' that takes a weight of 2, although they are still above the weight of 1, which represents the scale 'No'. Thus the IQM measures do not match the sustainability requirements in Egypt. This may also be supported by the

high range of standard deviations. However, an array of arguments exists about the type, level and extent of tourism that a destination should offer as a product while still ensuring that tourists do not destroy the natural and cultural heritage and the integrity of the resource (Logan, 2001). One of the dominant arguments is that destinations should practice high-quality tourism as opposed to mass tourism (Eraqi, 2007a). The process of designing an integrated tourism management strategy capable of meeting the expectations of the growing tourism industry in Egypt can be greatly facilitated by clarity regarding the type of tourism suitable for the destinations, and the protected areas in particular, and that can meet the expectations. This move towards sustainable practices in ecocultural management can improve the competitiveness of Egypt as a macro tourist destination through the continuous improvement of IQM measures.

Table 1 IQM criteria for measuring sustainability in Egyptian tourism

IQM criteria	Frequencies of yes		Frequencies of no		Statistical mean*	Std. deviation
	No.	%	No.	%		
Sustainable tourism has been achieved	84	76.4	26	23.6	1.7636	0.4268
Local involvement	50	45.5	60	54.5	1.4545	0.5002
Costs and externalities	58	52.7	52	47.3	1.5273	0.5015
Economic and social benefits	88	80.0	22	20.0	1.8000	0.4018
Transport efficiency has been improved	40	36.4	70	63.6	1.3636	0.4832
Access for local people	38	34.5	72	65.5	1.3455	0.4777
The economic use of resources	46	41.8	64	58.2	1.4182	0.4955
Waste minimising and recycling	42	38.2	68	61.8	1.3818	0.4881
Preserving local environment	79	71.8	31	28.2	1.7182	0.4519
Wildlife protection	74	67.3	36	32.7	1.6727	0.4714
Quality of visit is more important than visitor numbers	63	57.3	47	42.7	1.5727	0.4969

Notes: * The study scales are yes = 2 and no = 1.

Table 2 uses the χ^2 test to shed light on more proof about the fitness of the sustainability survey results.

In terms of development strategy, tourism has not played an important role in the recent past, although there are signs that are now seen as more important, especially in the context of sustainability requirements (Logan, 2001; Taylor *et al.*, 2003). The overall test of the IQM model's goodness of fit is accepted from the viewpoint of reliability, $\chi^2 = 239.932$, $p \leq 0.05$. It is clear from Table 2 that the main measures that have not been achieved to ensure a suitable or acceptable level of implementation of the IQM approach in Egyptian tourism are the following: the level of costs and externalities is high, $\chi^2 = 0.327$, $p \geq 0.05$, and local involvement does not match the acceptable level, $\chi^2 = 0.909$, $p \geq 0.05$. Also, the economic use of resources is still under the suitable level, $\chi^2 = 2.945$, $p \geq 0.05$. The criterion that the quality of visit is more important than the visitor number is under the suitable level, $\chi^2 = 2.327$, $p \geq 0.05$. For transport efficiency needing to be improved, the level is at $\chi^2 = 8.182$, $p \leq 0.05$. These results support the findings of Table 1.

Table 2 Chi² test for IQM criteria

<i>IQM criteria</i>	<i>Chi²</i>	<i>Chi² sig. (p)</i>
Sustainable tourism has been achieved	30.582	0.000
Local involvement	0.909	0.340
Costs and externalities	0.327	0.567
Economic and social benefits	39.600	0.000
Transport efficiency has been improved	8.182	0.004
Access for local people	10.509	0.001
The economic use of resources	2.945	0.086
Waste minimising and recycling	6.145	0.013
Preserving local environment	20.945	0.000
Wildlife protection	13.127	0.000
Quality of visit is more important than visitor numbers	2.327	0.127
Test for IQM model fitness	239.932	0.000

For natural resources, water and energy are the key concerns for sustainability, since both are extensively used by the tourism industry in the host areas, mostly at rates far exceeding the use by local residents. These two resources are scarce and often are the object of conflict due to the competing demands for different uses. For renewable resources, recycling and/or regeneration rates are appropriate, since they can be utilised to demonstrate some effort to manage consumption, as well as emissions and littering. Egypt currently has 24 national nature parks and plans to increase that number to 40 natural protectorates by 2017. These areas represent another way to increase average tourism stays and to attract new forms of tourism that have a higher value, such as ecotourism, and not just the typical sand-and-beach tourists. To promote the development of ecotourism, white spots, promotion and marketing activities need to ensure sustainable tourism through the environmental protection of natural assets and the archaeological protection of heritage sites, and to integrate tourism planning around natural assets. Of course, these procedures can decrease the level of costs and externalities, and so improve tourism quality. Integrating tourism into planning and green marketing will also improve tourism competitiveness in Egypt. The Egyptian national parks need to be seen and managed not as separated island and local communities; other stakeholders and the wider natural environment beyond their boundaries must be linked. Natural parks should ensure the effectiveness of their management plans against set criteria to evaluate their progress and to minimise the level of externalities.

An underdeveloped domestic air and land transport network is also hindering the future growth of Egypt's travel and tourism industry. Transport networks do not effectively facilitate multideestination travel for long-stay tourists. Because tourists cannot easily travel around the country, they tend to stay in one city for the entire duration of their visit. Tourists are spending more time in Egypt with a very little incremental increase in money. The underdeveloped transportation networks represent a lost opportunity to showcase Egypt's diverse tourism offerings and generate repeat visits. It reinforces the price pressure from tour packages to stay in the same destination for extra days at a marginal value (for example, to extend a vacation for five days at half the price for a hotel room).

Local participation and involvement are interrelated with educational policies, such as informing local people of the processes and the impacts of tourism. Although in already developed resorts, it is likely that the host community residents will have some experience, it is important that they have the right information about the needs for the long-term impacts and the long-term viability of the industry.

However, the sustainable tourism strategy in Egypt achieved a number of positive records in the fields of yielding a suitable level of economic benefits, access for local people, waste minimising and recycling, preserving the local environment and wildlife protection. The Chi² values for these records are high; they range from 6.145 to 39.600 and their significant $p \leq 0.05$ is shown in Table 2. Cultural changes are inevitable when people from different sociocultural backgrounds come together in some degree of interaction. Growth in tourism is only one part of the development process. Although it appears that tourism accelerates cultural changes, it is definitely not the only driving force of changes and these changes are not necessarily negative or undesirable (Inskeep, 1991). This positive change in the sociocultural environment has resulted in the increasing awareness of and concern about the continuing degradation of the environment and the role that tourism plays in the equation of environmental exploitation. With this increase in awareness, the link between sustainable development and tourism has become a reality. An overdependence on tour operators and a mismatch between the supply and demand for hotel rooms are reasons why Egypt is not maximising its travel and tourism competitiveness. While the average length of stay for a tourist in Egypt is high and increasing, the revenue per hotel room is low. This is due in part to aggressive resort package promotions offered by tour operators and a high rate of hotel room overcapacity. To address these challenges, it is important to balance hotel capacity investments with demand characteristics, transfer knowledge from global hotel and airport operators to the local market, and capture more value from long average stays per tourist to maximise the benefits from tourism and guarantee tourist satisfaction in the long run. Although profit is not the primary motive for establishing projects of sustainability, strategies of sustainable tourism development will not realise their primary objectives without a strong financial muscle and good governance.

4.2 *Regression analysis*

Regression analysis is used to explain how much all of the IQM criteria can interpret the degree to which sustainable tourism has been achieved in Egypt. Table 3 shows the main characteristics of the regression model.

4.2.1 *Regression model*

$$Y = 0.30 + 0.09 \times 1 + 0.27 \times 2 + 0.17 \times 3 + 0.01 \times 4 - 0.17 \times 5 + 0.04 \times 6 + 0.2 \times 7 + 0.19 \times 8 + 0.18 \times 9 + 0.07 \times 100$$

$$(F. \text{ test} = 3.071 \text{ with } F \text{ sig.}, p \leq 0.05 \text{ and } R. \text{ square} = 24 \%)$$

where:

Y = sustainable tourism has been achieved

X1 = local involvement

X2 = costs and externalities

- X3 = economic and social benefits
- X4 = transport efficiency has been improved
- X5 = access for local people
- X6 = the economic use of resources
- X7 = waste minimising and recycling
- X8 = preserving the local environment
- X9 = wildlife protection
- X10 = quality of visit than visitor numbers.

According to the previous model, the main variable negatively affecting the Egyptian sustainable tourism program is X2 (costs and externalities has the highest value of standardised Beta 0.321 (Table 3)). This means that the environmental costs to community (*e.g.*, traffic congestion, accidents, air pollution, noise, light pollution) are high and need to be removed or minimised. This result seems to be true, because the other important measures that need to be improved are X9 (wildlife protection), X8 (preserving the local environment) and X3 (economic and social benefits), according to the value of their standardised Beta (Table 3). However, all IQM criteria interpret/explain about 24% of total Y (sustainable tourism has been achieved); according to the results of ANOVA, $F = 3.071$, $p \leq 0.05$. The overall ANOVA explains that F . test = 16.059 and F . sig. = 0.000, $p \leq 0.05$ and this supports the results of the regression model. To summarise, the overall result claims that tourism development in Egypt needs to be more sustainable for the purpose of competitiveness enhancement. The IQM system, in other words, should be coherent with the notion of sustainable tourism by adhering to the carrying capacity of the destination and the scientific auditing of tourism impacts on the environment, and by being accepting, and supportive of the ratio of explanation/interpretation of variable ‘Y’, thus improving the competitiveness of Egypt as a macro tourist destination.

Table 3 Regression model characteristics*

<i>IQM criteria</i>	<i>Model variables</i>	<i>Beta</i>	<i>Standardised beta</i>
Constant of the model	(Constant)	0.30	
Local involvement	X1	0.09	0.101
Costs and externalities	X2	0.27	0.321
Economic and social benefits	X3	0.17	0.164
Transport efficiency has been improved	X4	0.01	0.015
Access for local people	X5	-0.17	-0.193
The economic use of resources	X6	0.04	0.045
Waste minimising and recycling	X7	0.2	0.020
Preserving local environment	X8	0.19	0.201
Wildlife protection	X9	0.18	0.203
Quality of visit is more important than visitor numbers	X10	0.07	0.080
R square		0.237	

Notes: *The model dependent variable: Y: sustainable tourism has been achieved.

5 Conclusions and implications

The IQM criteria indicate that the level of achieving sustainable tourism in Egypt is still less than the suitable level. This is because the level of externalities and the environmental costs are still high. There is insufficient use of tourism resources. To improve the situation, there should be a kind of cooperation between tourism companies in Egypt in the field of quality-measurement and in designing their quality systems. Any design and implementation of a quality-supporting system should be based on the need to establish its own quality approach and the quality type, level and convenience of obtaining an independent audit and certification. IQM has to be recognised as an essential element in a strategy for actions aiming at the competitiveness of Egyptian tourism. Egypt has to back the diversity of its natural, cultural and human heritage to modernise its infrastructures and its tourist facilities and to innovate through new products and alternative forms of tourism. Tourism companies in Egypt, especially the Small- and Medium-Sized (SMS) companies, can play a significant role in this respect. Quality in tourism cannot be achieved without the skill and motivation of those employed in tourism, hence, lifelong learning and social dialogue (internal customer satisfaction) are important.

To achieve a suitable level of sustainable tourism development in Egypt, according to the IQM system, the environmental costs need to be minimised. Local communities need more social and economical benefits, and need to be more involved. It is essential that all forms of tourism based on natural or man-made resources contribute to the sustainable use of resources within an integrated management system for tourism product/service quality and its continuous improvement. To improve the competitiveness of Egypt, sustainable tourism development needs to be considered as a form of planning and management, whereby tourism is viewed in a holistic manner and different interests such as ecological, financial, community and tourism satisfaction are taken into account. External customer (tourists) satisfaction and internal customer (employees) satisfaction are the most important goals of IQM for improving the competitiveness of the tourist destination.

To conclude, there are a number of barriers to tourism development in Egypt, such as poor and expensive transportation, a difficult operating environment, weak promotional activity and difficulties of preserving cultural heritage. These barriers need to be removed through a suitable IQM system to improve the competitiveness of Egypt as a macro tourist destination. If these constraints are neglected, it may pose significant problems for the long-term sustainability of tourism as a driver for economic development in Egypt. IQM has to be recognised as an essential strategy for actions aiming at improving the competitiveness of Egypt in order to contribute to economic growth, employment and a sustainable and balanced development.

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