



Weighing and realizing the environmental, economic and social goals of tourism development using an analytic network process-goal programming approach



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ABSTRACT

Although the sustainable development philosophy has been widely recognized, it is still necessary to weigh the economic, environmental and social implications of tourism development. The decision is often difficult involving typically complex multi-criteria decision making problems. This study aims to contribute a theoretical framework and approach for the determination of top priorities in tourism development and making decisions based upon that approach. Taking Xizang as a case, this study explores the means to weigh and realize tourism development goals during the '13th Five-Year Plan' period, using the analytic network process within a goal programming model. Results show that there are 10 criteria and nine decision variables determined in Xizang's sustainable tourism development and the priorities in Xizang's tourism development should be: 1) economic goals, 2) social goals, and 3) environmental goals. In addition, using the analytic network process-goal programming model, this paper provides the solution of the decision problem for two years, namely 2016 and 2020, and discusses the significance of the results. This study concludes that in a newly-emerging tourism but otherwise economically and socially backward region like Xizang, considering the economy first and the environment last is both appropriate and practicable. It is suggested that Xizang's tourism managers should implement specific strategies to raise the GDP, encourage higher levels of consumption by tourists and appropriately restrict the growth in the number of tourist coming to the area. Other goals should be to improve tourism research and the treatment of tourism employees and provide more support for tourism enterprises. The interdisciplinary approach from a systems perspective used in this study can be used to judge, queen and select numerous goals and criteria to make decisions in sustainable tourism development.

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1. Introduction

Xizang, better known as Tibet, is considered to be the last "pure land" in China, and as such, the area is becoming one of the most important tourism destinations (Cui et al., 2014). Xizang consists of areas of great ecological, cultural, and economic value, which also happen to be highly attractive at the same time. Especially since the implementation of the Western Development Strategy in China, the tourism industry in Xizang has become the most fundamental driving force of social progress (Wu and Pearce, 2012). In the past decade, Xizang has seen an enormous expansion in the number of visitors coming to the region and increased recognition of the financial significance of tourism (e.g. In 2014, Xizang was visited by

15.53 million tourists (27 times the number of tourists who visited in 2000), and tourism revenue amounted to 20.4 billion Yuan (32 times the number realized in 2000) (National Tourism Administration of PRC (NTAPRC), 2015). However, due to historical and geographical reasons, Xizang has been one of the slowest provinces in China in terms of social and economic development. Thus there have been intense debates regarding whether the sustainable development strategy should be implemented in full in Xizang. For example, Zhang (2006) argues that the process of damaging the ecological environment in Xizang is irreversible. Therefore, we have to guarantee protection of the environment and develop tourism conservatively. On the other hand, Zhang et al. (2013) point out that in the context of the construction of a world famous tourism destination, economic priorities need to be emphasized in Xizang's tourism development. At the same time, still other studies indicate that it is important to maintain social

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stability and govern Xizang in such a way as to upgrade the level of social development in tourism development, thus implying the core role of social goals (Wang, 2013; Yeh, 2007). Therefore, the priorities of economic, environmental, and social goals become key issues in the Xizang's current tourism development. Although the essence of sustainable tourism development is to promote the coordinated development of the economy, the environment and society (Bramwell and Lane, 2013; Edgell, 2013; Yuan et al., 2014), Xizang's practice shows different views on the three tourism development goals. This can be clearly illustrated through interviews with some of the key stakeholders:

"The fundamental purpose of tourism development in Xizang is to promote the coordinated development of the society, economy and environment, and we should follow the sustainable development ideas at any time"-A tourism official.

"We want to improve the financial rewards. Our participating in tourism is just to earn more money and gain a livelihood for every family member"- Some native people.

"For Xizang, the coordinated development of the society, the economy and the environment is naturally the best development route. However, we may have to determine the priorities of the social, economic and environmental goals due to the lower level of social economy and an immature market economy" - Xizang's tourism expert group.

"Admittedly, the basic motivation for my engagement in the tourism industry is making money, but as a tourism entrepreneur in Xizang, I have more responsibility for protecting the environment and enlarging employment"- A tourism entrepreneur.

Obviously, different stakeholders have different expectations regarding tourism development in Xizang. Just as Hatipoglu et al. (2016) claims, stakeholder involvement might not lead to sustainable tourism development. Therefore, it is a critically important but difficult problem to determine the priorities of the economic, social and environmental goals leading to specific decisions regarding modern-day sustainable tourism development in Xizang.

The objective of this study is to provide a theoretical framework and methods for the determination of top priorities in tourism development and making decisions based on those methods. This study suggests an integrated approach for interdependent tourism development goal selection and of solving associated problems using the Delphi technique, analytic network analysis and goal programming. We argue that in a newly-emerging tourism but otherwise economically and socially backward region, considering the economy first and the environment last is both appropriate and practicable.

The study is divided into six sections. Section 2 is the literature review. In Section 3, we describe the main methods used: the Delphi technique, analytic network process and goal programming. Section 4 uses the specific case of Xizang to illustrate the approach to the determination of influencing criteria and the decision variables of different tourism development goals. In particular, Section 4 shows how to obtain the priorities and how to model goal programming. Section 5 presents the results and discussions. The conclusions are put forward in Section 6.

2. Literature review

For many years, the need to improve sustainability in the tourism industry has been widely recognized (Graci, 2013) and there is extensive literature that indicates the predominance of

sustainable development in tourism destinations (see e.g. Buckley, 2012; Rodrigues et al., 2014; Budeanu et al., 2016). Sustainable tourism development is defined by the UNWTO as follows: "Sustainable tourism development ... is envisaged as leading to management of all resources in such a way that economic, social and esthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems." Generally, the goals of tourism development include economic, social and environmental aspects, according to Castellani and Sala (2010), Northcote and Macbeth (2006) and others. Therefore, Hall (2000) asserts that a sustainable tourism industry requires the attainment of the long-term integration of social, environmental and economic goals, which challenges managers to understand the complex interrelationships between economic, environmental, and social performance in tourism development.

However, the fact that the development of tourism has traditionally had a negative impact on the environment (Alipour and Kilic, 2005; Butler, 1991), underscores the need for environmental protection which restricts tourism development (McKercher, 1993; Coria and Calfucura, 2012). In addition, the complex relationships between society, tourism and the environment (García-Melón et al., 2012; Guan et al., 2011) typically result in problematic implementation of the integration of tourism and the environment. That is to say, in spite of considerable academic and practical debate on sustainable tourism development, the job of scientifically-based decision-making in sustainable tourism development is always difficult (Mihalic, 2016). Therefore, managers are always confused by how to weigh and realize the environmental, economic and social goals of tourism development.

Some studies have highlighted the tradeoff of the economy, environment and society in other areas. For example, Gradus and Smulders (1993) explore the trade-off between environmental care and economic growth. Another, the possible intervention policies developed to achieve a balanced sustainable economy are highlighted by Camagni et al. (1998). Subsequently, Figge and Hahn (2012) also assess the trade-off between economic and environmental aspects. In addition, the tradeoff between economy, environment and society is investigated by Valentinov (2014) and Yue et al. (2014). However, as far as the authors are aware, very few published studies contribute to the tradeoff of tourism development goals, especially in terms of specifically addressing the questions of setting and realizing their priorities. As previously mentioned, it is obvious that such considerations have tremendous practical importance, especially in newly-emerging tourism destinations, where tourism serves as a pillar industry. The priorities of tourism development goals deserve a more meticulous and specific study, in order to scientifically guide modern-day tourism development, which this paper aims to provide.

Due to the complex nature of tourism (Wang and Ap, 2013), the assigning of priorities to tourism development goals is a typically Multi-Criteria Decision Analysis (MCDA) problem, meaning that there are multiple conflicting criteria that need to be explicitly considered in making decisions, regarding the selection of top-priority tourism development goals. There are also complex interdependent relationships among these criteria, implying that it is very difficult to make scientific decisions. Given these problems, this study explores the problem of selection of top-priority tourism development goals in Xizang, which is a newly-emerging tourism destination, using the analytic network process (ANP) within a goal programming (GP) model. The ANP takes into account both the complexity of related criteria and interdependence among them, and GP fully considers the mutual conflict and compromise among tourism development goals, influencing criteria and system constraints.

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