# **Tourism and Network Analysis**

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## **About the author**

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**Rodolfo Baggio** has a degree in Physics and a PhD in tourism management. He has worked for leading information technology firms for over 20 years and presently is a professor at the Bocconi University where he teaches courses in Computer Science and coordinates the Information and Communication Technologies area at the Master in Economics and Tourism. At Bocconi he is also Research Fellow at the Dondena Center for Research on Social Dynamics. Rodolfo has also held several courses and lectures at national and international level. He actively researches and publishes in the field of information technology and tourism and has consulted for many public and private institutions. His current research focuses on the application of complexity theory and quantitative network analysis methods to the study of tourism destinations.

### **1** Introduction

In any science<sup>1</sup> the study of its phenomena involves the study of relationships that may be found among them. The understanding of relationships and the p ossibility to exploit this understanding is the essence of scientific method. Connections between particles, objects or people have been investigated and modeled in order to appreciate the systems formed by them and their dynamic behaviors. The outcomes of these researches have allowed us to better realize how phenomena evolve and given us tools (even if sometimes quite limited) to predict future configurations.

The study of relationships has also allowed to find similarities in different settings extending capabilities to describe events or solve problems. The best example is the recognition that a strict analogy exists between algebra and geometry. An important innovation in 17<sup>th</sup>-century mathematics was the introduction of algebraic procedures to solve geometric problems. Two fundamental advances in mathematics were the invention of what is now called analytic geometry and the development of infinitesimal calculus. This has generated the development of sophisticated analysis methods and given us the possibility to choose the most comfortable environment in which to attempt the solution of a problem being assured that the solutions found can be translated to the other world preserving their full validity.

Tourism, probably more than any other sector of human activities, is a world of relationships. The quality and the quantity of the connections established between companies, organizations and people is a crucial element in the determination of structural and dynamic characteristics of the system and of the parte that compose it. This (obvious) realization, leads to the consideration that the application of methods and techniques developed to study a network of relationships would be able to provide a wealth of interesting outcomes on the structural and dynamic properties of these systems.

A quick search on the Web will unveil thousands of results for "tourism networks", but a closer scrutiny shows that a vast majority of the studies performed treat the concept as given and do not attempt at providing a quantitative picture or defining carefully what is meant by network in the specific case, what the elements are and what their functioning is. This, however, has been shown to be of great importance while investigating a complex system of elements and connections, and a vast literature has offered many sophisticated ways for approaching the problem.

Aim of this work is to provide an overview of how quantitative network analysis methods have been and can be used in the study of a tourism system and what kind of conclusions can be drawn.

The 'object of study' considered here is a tourism destination. A tourism destination (or more simply a destination in the following), the place towards travelers head for to spend their time, can be broadly defined as a geographical area that offers the visitor opportunities of exploiting a variety of attractions and services (Jafari, 2000). Scholars and practitioners consider it a fundamental unit of analysis for the understanding of the whole tourism sector. Essentially, it is a complex adaptive socio-economic system. It shares many (if not all) of the characteristics

<sup>1</sup> Broadly meaning with this term a systematic practice able to result in the understanding of some subject and in allowing to make predictions of some outcomes related to that.

#### **Chapter extract**

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