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## Sustainable tourism: a comprehensive literature review on frameworks and applications

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This paper aims to study the progress of research on Sustainable Tourism and to outline and identify the key disciplines, journals, articles and authors. This is carried out through a wide, in-depth, and structured examination of published scholarly papers. In recent decades, sustainable tourism has been one of the most significant subjects among academics and practitioners. In this paper, a classification scheme and a comprehensive literature review are presented in order to clarify, categorise, and interpret the current research on sustainable tourism definitions and applications. The classification scheme for this review contains 132 scholarly papers from 47 journals since the year 1993 up to 2013 categorised into 14 application areas. The five major topics are Paradigm, Sustainable Tourism Development, Market research and Economic, Policy-making, and Infrastructure. The scholarly papers are also sorted by (we suggest using the exact order used later in the paper) (1) year of publication; (2) publication journal; (3) subject area citations. It is hoped that this paper provides the needs of researchers and practitioners with easy references for sustainable tourism and its definitions and applications, and also presents future research opportunities.

**Keywords:** sustainable development; tourism; sustainable tourism; literature review

**JEL classification:** Q01, Q50, Q56, L83.

### 1. Introduction

The travel and tourism industry is placed among the largest industries in the world. However, the degrading effects of tourism have become a big concern and need to be addressed quickly. With this in mind, the concept of sustainable tourism has emerged with the aim of reducing the negative effects of tourism activities, which has become almost universally accepted as a desirable and politically appropriate approach to tourism development (Sharpley, 2003). Sustainability covers all elements that constitute a complete tourism experience. According to the majority of scientists (Briguglio, Archer, Jafari, & Wall, 1996; Butler, 1991; Sharpley, 2000; Vellas & Becherel, 1999; WCED, 1987) ‘sustainable tourism development’ concerns an economic, social and environmental tourism development that aims at the continuous improvement of tourists’

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experiences. The tourism industry has the potential to contribute to sustainable development, particularly by job creating, including employment for women and marginalised groups (Cukier, 2002; Görg, 2000). The purpose of sustainable tourism is to make a balance between protecting the environment, maintaining cultural integrity, establishing social justice and promoting economic benefits, meeting the needs of the host population in terms of improved living standards both in the short and long term (Liu et al., 2013) in both developed and emerging nations (Mitchell & Hall, 2005; Swarbrooke & Horner, 2004) while emphasising both intergenerational equity and intra-generational equity (Liu, 2013) and in a form that can maintain its viability in an area for an indefinite period of time' (Butler, 1993, 1999). In community tourism, sustainable development is applied to improve the residents' quality of life by optimising local economic benefits, protecting the natural and built environment and providing a high-quality experience for visitors (Bramwell & Lane, 1993; McIntyre, 1993; Park & Yoon, 2009; Park, Yoon, & Lee, 2008; Stabler, 1997).

This research work seeks to study the progress of research on Sustainable Tourism Development (STD) by conducting a thorough and structured examination of peer-reviewed journal articles in recent years and to identify the key disciplines, journals, articles and authors.

## 2. Research methodology

The presented research aims at understanding past and current research, creating some direction for future studies, and therefore advancing the application of sustainable development in the tourism industry. In order to do such an analysis, a large set of publications is taken into consideration to have an accurate picture of STD research. For this reason, it was decided to investigate as many articles as possible in order to discover several areas of the STD domain, which was necessary to ensure the reliability and representativeness of the results. It also should be noted here that the number of citations and the popularity of publishers are the most significant criteria for publication selection to clarify the authenticity of them.

Journal articles with a high impact on the scientific community were downloaded from six online databases, including Elsevier, Springer, Kluwer, Wiley, Emerald, and Taylor & Francis. They were accessed between 5 and 16 May 2013. With guidance from the journal ranking literature, 47 refereed academic journals in the field of sustainable development and tourism were chosen for analysis, and they are presented later in Table 18.

In total, 132 journal articles from the 47 sustainability and tourism journals, published between 1993 and 2013 were examined. Therefore, the recent trends in sustainable development and tourism research have been captured, based on studies published over the last 20 years. However, this paper excludes any study whose major concepts were not directly focused on sustainable development and tourism industry. Table 16 illustrates the papers published since 1993. As it can be seen there is an overall increasing number of papers over the last 5 years with a total of 57% of the articles published in 2008–2013.

Content analysis is adopted to identify categories and produce descriptive information on the content of previous research (Silverman, 1997). The scholarly papers are sorted by (1) year of publication; (2) publication journal; (3) subject area; (4) authors' nationality; (5) region of focus; (6) number of nationality citations. It is believed that these aspects can provide information on the progress of sustainable development

research in the tourism context over the period of investigation. Moreover, it is expected that such an analysis uncovers the potential gaps in the literature and identifies future research opportunities.

Each article's subject area is investigated in the second step of the analysis. The 5 scholarly papers are classified into 14 categories of subject areas, named (1) Paradigm (Table 1); (2) Sustainable tourism development (Table 2); (3) Market research and Economics (Table 3); (4) Policy Making (Table 4); (5) Infrastructure (Table 5); (6) Modeling and Planning (Table 6); (7) Rural tourism (Table 7); (8) Environment and crises management (Table 8); (9) ecosystem and eco-tourism (Table 9); (10) Climate change (Table 10); (11) Ecology (Table 11); (12) Culture and heritage (Table 12); (13) Human resource management (Table 13); (14) Energy and material saving (Table 14).

In the third step, each article is arranged according to its focused geographic region, of which Europe, Asia, Africa, North America, Latin America, and Oceania are identified as key regions. It should be noted here that some papers could be classified into several categories as the concepts of some categories are close; however, this research focused on the main concept of each research work.

### **3. The brief review of sustainable tourism development**

Sustainable tourism development has attracted significant attention in many scientific studies particularly in tourism studies and has been one of the very fast growing areas of tourism studies research since the late 1980s. According to Buckley (2012) the specific term 'sustainable tourism' was first used almost two decades ago. During the first decade, basic frameworks from backgrounds in tourism, economics and environmental management were studied. The second decade yielded a number of reconceptualisation and a series of critiques including Sharpley (2000), Gössling (2002), Liu (2003), Saarinen (2006), Lane (2009b), and Liu (2013). According to Bramwell & Lane, the two greatest founders of these concepts in the tourism industry, sustainable tourism emerged in part as a negative and a reactive concept in response to the many tourism issues, such as environmental damage and serious impacts on society and traditional cultures (Bramwell & Lane, 1993). Gradually, tourism development has been seen as a solution capable of creating positive changes through the ideas of sustainable tourism. Sustainable tourism has played an important role in identifying ways to secure positive benefits, as well as the established approaches of regulation and development control (Bramwell & Lane, 2012).

There are a large number of definitions of sustainability and sustainable development. The best known definition of sustainable development is 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (WCED, 1987). This definition implies the connections between economic development, environmental protection and social equity, each element reinforcing the other. The World Tourism Organisation (WTO, 2001) defined sustainable development as follows:

Sustainable tourism development meets the needs of present tourists and host regions while protecting and enhancing opportunities for the future. It is envisaged as leading to management of all resources in such a way that economic, social and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems.

Table 1. Applied papers in 'Paradigm'.

	Title	Author	Field
1	Sustainable Tourism: An Evolving Global Approach	Bramwell and Lane (1993)	Paradigm
2	Perspectives on Tourism Development	Eccles and Costa (1996)	Paradigm
3	The Challenge of Sustainable Tourism	McMinn (1997)	Paradigm
4	A Framework of Approaches to Sustainable Tourism	Clarke (1997)	Paradigm
5	Sustainable Tourism: Contributing to the Debates	Bramwell and Lane (1999)	Paradigm
6	Sustainable Tourism: Learning from Indian Religious Traditions	Gupta (1999)	Paradigm
7	Environmental Changes Associated with Mass Urban Tourism and Nature Tourism Development in Hong Kong	Jim (2000)	Paradigm
8	Sustainable Tourism or Sustainable Mobility? The Norwegian Case	Høyer (2000)	Paradigm
9	Sustainable Tourism and the question of the commons	Briassoulis (2002)	Paradigm
10	Sustainable Tourism Development: A Critique	Liu (2003)	Paradigm
11	The Competitive Destination: A Sustainable Tourism Perspective	Aitchison, MacLeod, and Shaw (2004)	Paradigm
12	Operators' Attitudes Toward Sustainable Tourism Development Concept in Ghana	Okeiyi, Okrah, Okeiyi, and Bryant (2005)	Paradigm
13	conceptualising YIELD Sustainable Tourism Management	Northcote and Macbeth (2006)	Paradigm
14	Sustainable Tourism: Ethical Alternative or Marketing Ploy?	Lansing and De Vries (2006)	Paradigm
15	Performance, Conformance and Change: Towards a Sustainable Tourism Strategy for Scotland	Macleod and Todnem (2007)	Paradigm
16	4L Tourism (Landscape, Leisure, Learning and Limit): Responding to New Motivations and Expectations Of Tourists to Improve the Competitiveness of Alpine Destinations in a Sustainable Way	Franch, Martini, Buffa, and Parisi (2008)	Paradigm
17	Priorities in Sustainable Tourism Research	Bramwell and Lane (2008)	Paradigm
18	Managing Sustainable Tourism in Lithuania: Dream or reality?	Grundey (2008)	Paradigm
19	Public Understanding of Sustainable Tourism	Miller, Rathouse, Scarles, Holmes, and Tribe (2010)	Paradigm
20	The Challenge of Sustainable Tourism Development in the Maldives: Understanding the Social and Political Dimensions of Sustainability	Scheyvens (2011)	Paradigm (Social and political perspectives)
21	Crises, Sustainable Tourism and Achieving Critical Understanding	Bramwell and Lane (2011)	Paradigm
22	Sustainable Tourism: Research and Reality	Buckley (2012)	Paradigm
23	The Awareness/Attitude-Gap in Sustainable Tourism: A Theoretical Perspective	Antimova, Nawijn, and Peeters (2012)	Paradigm

*(Continued)*

Table 1. (Continued).

	Title	Author	Field
24	Towards Innovation in Sustainable Tourism Research?	Bramwell and Lane (2012)	Paradigm
25	Getting From Here To There: Systems Change, Behavioural Change and Sustainable Tourism	Bramwell and Lane (2013)	Paradigm

Source: Compiled by the authors.

Table 2. Applied papers in 'Sustainable tourism development'.

	Title	Author	Field
1	Alternative Tourism and Sustainable Development in Kenya	Sindiga (1999)	Sustainable tourism development (Eco-tourism)
2	Challenges of Sustainable Tourism Development in the Developing World: The Case of Turkey	Tosun (2001)	Sustainable Tourism development (Challenges in developing countries)
3	The Development of Indicators for Sustainable Tourism: Results of a Delphi Survey of Tourism Researchers	Miller (2001)	Sustainable Tourism development (Identifying indicators)
4	The Development of Sustainable Tourism in the Guianas	Sinclair and Jayawardena (2003)	Sustainable tourism development
5	Sustainable Tourism Development in the Caribbean: Practical Challenges	Harrison, Jayawardena, and Clayton (2003)	Sustainable tourism development (Challenges)
6	Sustainable Tourism Development In Canada: Practical Challenges	Jayawardena (2003)	Sustainable tourism development (Challenges)
7	Sustainable Tourism Development: A Case Study of North Cyprus	Altinay and Hussain (2005)	Sustainable tourism development
8	The Problems and Prospects of Sustainable Tourism Development in the Okavango Delta, Botswana	Mbaiwa (2005)	Sustainable tourism development (challenges)
9	Sustainable Tourism Development in the Red Sea of Egypt. Threats and Opportunities	Shaalán (2005)	Sustainable Tourism development (Environmental policy)
10	Sustainable Tourism Development on Kenya's Coast: A Hospitality Sector View	Irandu (2006)	Sustainable tourism development (Coast areas)
11	Sustainable Development in Tourism Municipalities: The Role of Public Goods	Torrent (2008)	Sustainable Tourism development (role of municipalities)
12	Technical Approach for a Sustainable Tourism Development. Case Study in the Balearic Islands	Fortuny, Soler, Canovas, and Sanches (2008)	Sustainable Tourism development (Technical approach)
13	Sustainable Tourism Development in Niagara Discussions, Theories, Projects and Insights	Jayawardena, Patterson, Choi, and Brain (2008)	Sustainable tourism development (Paradigm)
14	Sustainable Tourism Development in Remote Regions? Questions Arising From Research in the North Kimberley, Australia	Larson and Herr (2008)	Sustainable tourism development (Remote regions)

(Continued)

Table 2. (Continued).

	Title	Author	Field
15	Developing Sustainable Tourism: Managers' Assessment of Jamaica's Ten-Year Master Plan	Kennett-Hensel, Sneath, and Hensel (2010)	Sustainable tourism development (Strategic management)
16	Sustainable Tourism Industry Development in Sub-Saharan Africa: Consequences of Foreign Hotels For Local Employment	Fortanier and van Wijk (2010)	Sustainable Tourism development (Employment)
17	Visitor Perspectives on Sustainable Tourism Development in the Pitons Management Area World Heritage Site, St. Lucia	Nicholas and Thapa (2010)	Sustainable tourism development (Visitor perspectives)
18	Sustainable Development of Tourism Industry in China Under The Low-carbon Economy	Tang, Shi, and Liu (2011)	Sustainable Tourism development (Low carbon economy)
19	Environmental Performance Measurement of Tourism Accommodations in the Pilgrimage Urban Areas: The Case of the Holy City of Mashhad, Iran	Aminian (2012)	Sustainable Tourism development (Energy)

Source: Compiled by the authors.

Liu (2013) highlights the precise definition of 'sustainability', which implies the significant role of states in preparing a steady progress in life conditions for generations to come; 'sustainable development' is more process-oriented and associated with managed changes that cause improvement in conditions for those involved in such development; and 'sustainable tourism' is defined as all types of tourism that are compatible with or contribute to sustainable development. 'Sustainable tourism' requires both the sustainable growth of tourism's contribution to the economy and society and the sustainable use of resources and the environment, which will be gained by a deep understanding and proper management of tourism demand (Liu, 2013). Liu (1994) defined tourism development as a dynamic process of matching tourism resources to the demands and preferences of actual or potential tourists.

#### 4. Application areas

This wide range of real-world applications for the Sustainable Development of Tourism is a great motivation for categorising applications across different fields and specific sub-areas. Application research studies include case studies, illustrative examples, and/or practical experiences. To show the specific areas of these papers, 132 papers are categorised into 14 areas: (1) Paradigm, (2) Sustainable tourism development, (3) Market research and economics, (4) Policy making, (5) Infrastructure, (6) Modelling and planning, (7) Rural tourism, (8) Environment and crises management, (9) ecosystem and eco-tourism, (10) Climate change, (11) Ecology, (12) Culture and heritage, (13) Human resource management, (14) Energy and material saving.

The first two categories – 'Paradigm' and 'Sustainable tourism development' – contain over 50% of the total published applications.

Table 3. Applied papers in 'Market research and economics'.

	Title	Author	Field
1	Marketing, Sustainable Development and International Tourism	Eccles (1995)	Market research
2	Assessing Tourists' Preferences for Recreational and Environmental Management Programmes Central to the Sustainable Development of a Tourism Area in the Dominican Republic	Mercado and Lassoie (2002)	Market research
3	Optimising Tourism Destination Development in Canada	Joppe (2003)	Market tourism
4	Tourism and the General Agreement on Trade in Services Sustainability and Other Developmental Concerns	George & Henthorne (2007)	Market research
5	Sustainable Transport, Market Segmentation And Tourism: The Looe Valley Branch Line Railway, Cornwall, UK	Dallen (2007)	Market research (Transport)
6	Sustainability in Tourism Destinations: Exploring the Boundaries of Eco-Efficiency and Green Communications	Holleran (2008)	Market research
7	Sustainable Tourism Rapid Indicators for Less-developed Islands: An Economic Perspective	Reddy (2008)	Economic
8	Selective Marketing for Environmentally Sustainable Tourism	Dolnicar and Leisch (2008)	Market research
9	Destination and Enterprise Management for a Tourism Future	Dwyer et al. (2009)	Market Research (Future global trends)
10	Economic Cycles, Times of Change and Sustainable Tourism	Bramwell and Lane (2009)	Economic
11	The Assessment of Sustainable Tourism: Application to Spanish Coastal Destinations	Blancas, Gonzalez, Lozano-Oyola, and Perez (2010)	Market research
12	Whole Life Sustainability in the Design of Tourist Resorts a Coastal Alteration Prediction Model (CAP) Using GIS and Statistical Tools	Ismail and Khalil (2010)	Market research
13	The Evaluation of Tourism Destination Competitiveness by TOPSIS & Information Entropy. A Case in the Yangtze River Delta of China	Zhang, Gu, Gu, and Zhang (2011)	Market research
14	(No) Competitiveness and Sustainable Development of Serbian Tourism	Petrović-Randelović and Miletić (2012)	Market research
15	Tourism in Kenya: An Analysis of Strategic Issues and Challenges	Mayaka and Prasad (2012)	Market research
16	Monitoring and Evaluation Tool for Tourism Destinations	Rio and Nunes (2012)	Market research
17	Implementation of a Sustainable Business Cycle: The Case of a Tourism Project in Puerto Rico	Santos-Corrada and Figueroa (2012)	Market research

Source: Compiled by the authors.



Table 4. Applied papers in 'Policy making'.

	Title	Author	Field
1	Attitudes Towards 'Sustainable Tourism' in the UK: A View from Local Government	Godfrey (1998)	Policy Making (Local Government)
2	Improving Tourism Policy Implementation and the Use of Hybrid MCDM Models	Liu et al., (2013)	Policy Making
3	Assessing a Voluntary Environmental Initiative in the Developing World: The Costa Rican Certification For Sustainable Tourism*	Rivera (2002)	Policy-making
4	Policy Coherence and Sustainable Tourism in the Caribbean	Clayton (2003)	Policy-making
5	Stakeholders in Sustainable Tourism Development and their Roles: Applying Stakeholder Theory to Sustainable Tourism Development	Byrd (2007)	Policy-making
6	Requirements for Sustainable Nature-Based Tourism in Transfrontier Conservation Areas: A Southern African Delphi Consultation	Spenceley (2008)	Policy-making
7	Social Learning and Sustainable Tourism Development; Local Quality Conventions in Tourism: A Greek Case Study	Koutsouris (2009)	Policy-making
8	Taxing Tourism: Enhancing or Reducing Welfare?	Sheng and Tsui (2009)	Policy-making
9	Implementing Sustainable Tourism in Scotland: An Interview	Lane (2009a)	Policy-making (Review)
10	Sustainable Performance Index for Tourism Policy Development	Castellani and Sala (2010)	Policy-making (Tourism policy development)
11	Sustainable Tourism and the Evolving Roles of Government Planning	Bramwell and Lane (2010)	Policy-making (Governance)
12	Policy Learning and Policy Failure in Sustainable Tourism Governance: from First- and Second-order to Third-order Change?	Hall (2011)	Policy-making
13	A Combined ANP-Delphi Approach to Evaluate Sustainable Tourism	García-Melón, Gómez-Navarro, and Acuña-Dutra (2012)	Policy-making (Participatory decision-making)

Source: Compiled by the authors.

The following sections present an extensive review of the 132 scholarly papers classified into 14 application areas and their specific sub-areas. Each topic is further explained and then summarised in specific tables corresponding to their sub-areas.

## 5. Paradigm

In science and epistemology, *paradigm* describes distinct concepts or thought patterns. The historian of science Thomas Kuhn gave it its contemporary meaning when he adopted the word to refer to the set of practices that define a scientific discipline at any particular period of time. In his book, *The Structure of Scientific Revolutions*, Kuhn

Table 5. Applied papers in 'Infrastructure'.

	Title	Author	Field
1	Sustainable Tourism: The Role of the Small Firm	Horobin and Long (1996)	Infrastructure (Role of small firms)
2	Voluntary Carbon Offsetting Schemes for Aviation: Efficiency, Credibility and Sustainable Tourism	Gössling et al. (2007)	Infrastructure (Eco-system in transportation)
3	Environmental Supply Chain Management in Tourism: The Case of Large Tour Operators	Adriana (2009)	Infrastructure in Environmental management (Supply Chain Management)
4	Managing Dive Tourism for the Sustainable Use of Coral Reefs: Validating Diver Perceptions of Attractive Site Features	Uyarra, Watkinson, and Cote (2009)	Infrastructure (Dive tourism)
5	Ecological Footprint Analysis of Road Transport Related to Tourism Activity: The Case for Lanzarote Island	Martin Cejas and Ramirez Sanchez (2010)	Infrastructure in Environmental management (Ecological footprint)
6	Environmental Governance for Sustainable Tourism Development: Collaborative Networks And Organisation Building in the Antalya Tourism Region	Ozturk and Eraydin (2010)	Sustainable Tourism development (Environmental governance)
7	Evaluation on Sustainable Development of Scenic Zone Based on Tourism Ecological Footprint: Case Study of Yellow Crane Tower in Hubei Province, China	Sanagustin Fons et al. (2011)	Infrastructure in Environmental management (Ecological footprint)
8	A Sustainable Tourism Mobility Passage	Verbeek et al. (2011)	Infrastructure (Transport)
9	Sustainable Tourism Certification and State Capacity: Keep it Local, Simple, and Fuzzy	Bowman (2011)	Infrastructure (Planning)
10	Application of Corporate Social Responsibility Approach in Bulgaria to Support Sustainable Tourism Development	Matev and Assenova (2012)	Sustainable tourism development (corporate social responsibility)
11	Improving Metro–Airport Connection Service for Tourism Development: Using Hybrid MCDM Models	Liu, Tzeng, Lee, and Lee (2013)	Infrastructure in Environmental management (Transport)

Source: Compiled by the authors.

defines a scientific paradigm as: 'universally recognised scientific achievements that, for a time, provide model problems and solutions for a community of researchers'.

Bramwell and Lane founded the *Journal of Sustainable Tourism* with the aim of the journal providing interdisciplinary perspectives, being international in outlook and being a useful tool for the implementers. In their 1993 paper, they discussed the origins of the concept of sustainable development and its extension and evolution. Bramwell and Lane, in their 1999 article, also argued for the exploration of many dilemmas and difficulties associated with sustainable tourism and emphasised the necessity of the development of tourism sustainability indicators to measure progress. In their other paper, in 2008, they insisted on the necessity of devoting research time to other dimensions of tourism and sustainable development and climate change. For instance, they contend

Table 6. Applied papers in 'Modelling and planning'.

	Title	Author	Field
1	Planning, Changing Landscapes and Tourism in Singapore	Henderson (2005)	Planning
2	Creating and Implementing a Model for Sustainable Development in Tourism Enterprises	Kernel (2005)	Sustainable Tourism development (modelling)
3	Partial Industrialization in Tourism: A New Model	Leiper, Stear, Hing, and Firth (2008)	Modelling
4	Modelling Sustainable International Tourism Demand to the Brazilian Amazon	Divino and McAleer (2009)	Modelling (Tourism demand)
5	Developing Sustainable Tourism, Using a Multi-criteria Analysis on Renewable Energy in Mediterranean Islands	Michalena, Hills, and Amat (2009)	Sustainable Tourism development (Energy)
6	A Sustainable Tourism Planning Model: Components and Relationships	Padin (2012)	Planning
7	Sustainable Tourism Development Strategy by SWOT Analysis: Boujagh National Park, Iran	Reihanian, Binti Mahmood, Kahrom, and Hin (2012)	Sustainable Tourism development (Strategic planning)
8	A Multi-layer Matrix Model of Sustainable Tourism Process, Measurement Areas, Gap and Reconnection Analyses	Padin and Svensson (2013)	Modelling
9	A Spatial Decision Support System (SDSS) for Sustainable Tourism Planning in Johor Ramsar Sites, Malaysia	Aminu et al. (2013)	Sustainable tourism planning

Source: Compiled by the authors.

Table 7. Applied papers in 'Rural tourism'.

	Title	Author	Field
1	Market Integration And Ecosystem Degradation: Is Sustainable Tourism Development in Rural Communities a Contradiction in Terms?	Gossling (2003)	Rural tourism (Sustainable development)
2	Entrepreneurship Development and Tourism in Rural African Communities	Austin (2003)	Rural tourism
3	The Impact of Tourism on Agriculture in Lugu Lake Region	Liu, Liu, Hu, Wu, and Dai (2008)	Rural tourism
4	Rural Tourism in China	Su (2011)	Rural tourism
5	Rural Tourism: A Sustainable Alternative	Huiqin and Linchun (2011)	Rural tourism
6	Developing Sustainable Rural Tourism Evaluation Indicators	Park and Yoon (2011)	Rural Tourism
7	Sustainable Rural Tourism In Iran: A Perspective from Hawraman Village	Ghaderi and Henderson (2012)	Rural tourism
8	Finding the Crucial Factors for Sustainable Development of Rural-based Tourist Destinations: Using Nanzhuang, Taiwan as a Case Study	Tan, Liu, and Hu (2012)	Rural tourism (Sustainable development)

Source: Compiled by the authors.

Table 8. Applied papers in ‘Environment and crises management’.

	Title	Author	Field
1	Tourism and the Environment: A Geographical Perspective	Butler (2000)	Environmental management
2	Sustainable Development in Small Island Developing States: The Case of the Maldives	Ghina (2003)	Environmental management
3	Mountain Tourism: Toward a Conceptual Framework	Nepal and Chipeniuk (2005)	Environmental management
4	Sustainability Indicators For Managing Community Tourism	Choi and Sirakaya (2006)	Tourism management
5	Crisis Management, Tourism and Sustainability: The Role of Indicators	de Sausmarez (2007)	Crises management
6	Managing Protected Areas for Sustainable Tourism: Prospects for Adaptive Co-management	Plummer and Fennell (2009)	Environmental management
7	Tourism and Hospitality Small and Medium Enterprises and Environmental Sustainability	Alonso and Ogle (2010)	Environmental management
8	Environmental and Energy-Related Challenges to Sustainable Tourism in the United States and China	Day and Cai (2012)	Environmental management

Source: Compiled by the authors.

Table 9. Applied papers in ‘Eco-system and eco-tourism’.

	Title	Author	Field
1	Celestial Ecotourism: New Horizons in Nature-based Tourism	Jie, Kezun, and Guiqin (2000)	Eco-tourism
2	Forest Parks and Sustainable Development of Ecotourism in China	Sasidharan, Sirakaya, and Kerstetter (2002)	Sustainable tourism development (eco-tourism)
3	Developing Countries and Tourism Ecolabels	Gibson, Dodds, Joppe, and Jamieson (2003)	Protects the natural capitals (Ecosystems)
4	Ecotourism in the City? Toronto’s Green Tourism Association	Knowd (2006)	Eco-tourism (Green tourism)
5	Tourism as a Mechanism for Farm Survival	Viducic (2008)	Eco-system
6	Sustainable Development of Maritime Tourism in Croatia 2007–2015	Weaver (2011b)	Sustainable tourism development (maritime tourism)

Source: Compiled by the authors.

Table 10. Applied papers in ‘Climate change’.

	Title	Author	Field
1	Developing an Approach for Tourism Climate Change Assessment: Evidence from Four Contrasting Australian Case Studies	Turton et al. (2010)	Climate change
2	Can Sustainable Tourism Survive Climate Change?	Weaver (2011a)	Climate change
3	Why Sustainable Tourism Must Address Climate Change	Scot (2011)	Climate change
4	Climate Change and Tourism: An Overview	Pang, McKercher, and Prideaux (2013)	Climate change
5	Tourism, climate change and Adaptation: A Review	Kaján and Saarinen (2013)	Climate change

Source: Compiled by the authors.

Table 11. Applied papers in 'Ecology'.

	Title	Author	Field
1	The Eco-efficiency of Tourism	Gossling et al. (2005)	Ecology (Transportation)
2	Ecologically Sustainable Tourism Management	L. Lim and M. McAleer (2005)	Ecology
3	The Ecological Footprint as a Key Indicator of Sustainable Tourism	Hunter and Shaw (2007)	Ecological indicator (Footprint)

Source: Compiled by the authors.

Table 12. Applied papers in 'Culture and heritage'.

	Title	Author	Field
1	Urban Management and Heritage Tourism for Sustainable Development the Case of Elmina Cultural Heritage and Management Programme in Ghana	Ato Arthur and Mensah (2006)	Sustainable tourism development (Urban management)
2	Environmental, Cultural, Economic and Socio-Community Sustainability: A Framework for Sustainable Tourism in Resort Destinations	Richins (2009)	Environmental, cultural, economic and socio-community Sustainability
3	Sustainable Conservation of Cultural Heritage: A Global Responsibility. Sichuan Towers Case Study	Bordignon et al. (2009)	Cultural

Source: Compiled by the authors.

Table 13. Applied papers in 'Human resource management'.

	Title	Author	Field
1	Skills Development in Tourism: South Africa's Tourism-led Development Strategy	Kaplan (2004)	Human Resource Management (Empowerment)
2	Information and Empowerment: The Keys to Achieving Sustainable Tourism	Cole (2006)	Human Resource Management (Empowerment)

Source: Compiled by the authors.

Table 14. Applied papers in 'Energy and material saving'.

	Title	Author	Field
1	Transport and Tourism: Cycle Tourism – A Model for Sustainable Development?	Lumsdon (2000)	Sustainable tourism development (transport)
2	Contribution of the Solar Energy in the Sustainable Tourism Development of the Mediterranean Islands	Michalena and Tripanagnostopoulos (2010)	Sustainable Tourism development (Energy)

Source: Compiled by the authors.

that environmental risks are also strongly connected with social inequalities. In 2012, Bramwell and Lane stated that ‘there is considerable evidence that tourism is becoming less sustainable, primarily as a result of the sector’s rapid growth and limited progress towards implementing more environmentally friendly operations on a global scale’ and they stress the role of the state on pushing forward the required policies and they emphasise the need for social systems to be changed. Since 1991, Bramwell and Lane have attempted to introduce new aspects of sustainability into tourism, to pose a new concern, direct and encourage researchers to carefully investigate the issues related to these concepts and to broaden the understanding pertaining to the issues as well as implementing the required practices in order to achieve the sustainability purposes in all of its dimensions including the environmental, social, economic, and cultural in a perfect manner.

## **6. Sustainable tourism development**

Over the last two decades, the concept of sustainable tourism development has become almost universally accepted as a desirable and politically appropriate approach to tourism development (Sharpley, 2003). The tourism industry should be encouraged to embrace ‘clean green’ tourism, which means that firms should do their best to decrease the environmental impacts of their operations. If a destination is to achieve sustainable tourism development then the actions of its constituent firms must be consistent with and support this objective. Dwyer and colleagues in a study stated that tourism firms should adopt a Triple Bottom Line (TBL) approach to sustainable development to ensure that firms integrate social, environmental and economic information into managerial decision-making. Firms must aim to achieve sustainability in their operations if the destination as a whole is to conform to sustainability principles (Dwyer, Edwards, Mistilis, Roman, & Scott, 2009).

## **7. Market research and economic**

In terms of achieving sustainability, it is apparent that there is a great need to maximise the economic benefits to the local community while simultaneously minimising the environmental and social costs. However, this is not an easy access solution as it is ‘enormously difficult to achieve’ (Tosun, 2001).

Reddy (2008) studied some economic impacts of the tourism industry through indicators such as Foreign exchange/leakage, Taxes/leakage, Beneficial sub-industries (the industries indirectly supporting tourism, e.g. fishing, agriculture), Park entry revenue, Job creation and seasonality, Job balance, Wages evolution, Local souvenirs, and Infrastructure development in order to evaluate the sustainability indicators for rapid assessment of tourism development. Ensuring viable, long-term economic operations, providing socio-economic benefits to all stake-holders that are fairly distributed, including stable employment and income-earning opportunities and social services to host communities, and contributing to poverty alleviation, are the parameters of sustainability (UNWTO, 2004).

UNWTO (2002) asserted that destination marketing will be broadly oriented to one or a combination of three E-words: Entertainment, Excitement and Education (UNWTO, 2002). Database marketing should be used to understand, communicate and build relationships with key target markets. It was agreed that future marketing efforts must go

beyond mere descriptions of the diverse and individualised attractions of the destination to emphasise the emotional benefits associated with a valued set of experiences (Dwyer et al., 2009). One of the big challenges in marketing is dealing with the ever increasing and diversifying array of desires, interests and tastes on one hand, and the tourism products offered in response, on the other hand (Dwyer et al., 2009). This perspective is consistent with the view increasingly espoused in the management and marketing literature wherein 'customer orientation' is considered to be a major factor in successful innovation of new products and new services (Cooper, 2001). Theorists have argued that firms need to identify changes in technology that will affect the growth, quality, and marketing of tourism. In particular, they should monitor the extent to which new telework and video communication technologies affect routine forms of business and personal travel (Buhalis, 2003).

## **8. Policy making**

Sustainable tourism has become an area of academic interest and has been adopted into tourism policy-making by both the public and private sectors at all levels of governance and in organisations such as United Nations Environment programme (UNEP), United Nations World Tourism Organisation (UNWTO), and the World Travel and Tourism Council (WTTC) (Hall, 2011). By the late 1990s, governments and international organisations were clearly interested in regulating the tourist industry and educating both hosts and participants. Community leaders and other local stakeholders also began to exert pressure from below to alter the tourism product in order to preserve the environment, maintain local culture and products, and share tourism revenues with local communities. Green, sustainable, and eco-friendly are now prevalent terms in tourism policy papers, regulations, and promotional materials (Bowman, 2011). Development and implementation of sustainable tourism certification is a process that can result in an important dialogue and policy-making process about the type of tourism development that a country wishes to pursue, greater awareness in the business community of the needs and contributions of the local communities, and a shift in attitudes across sectors and generations (Bowman, 2011).

Institutional pressures have a key driving role in stimulating the adoption of environmental legislation by life-cycle considerations for reducing negative impacts and by demanding specific performances, such as the elimination of toxic substances from the production of electronic goods or restricting industrial discharges and emissions to nature. Moreover, for successfully implementing the sustainable development strategies, having the top management's formal commitment and the maturity of inter-organisational relations are critical (Adriana, 2009).

The consultation and involvement of local stakeholders in strategies development definitions contribute to highlighting new perspectives about the local situation and to ensuring that all the priorities of different actors and their opinions about possible measures of intervention are considered in the evaluation of scenarios and the definition of a strategy for local development (Logar, 2010; Stagl, 2006; Tosun, 2000). For instance, Castellani and Sala (2010) in a study proved that the European Charter procedure meets the necessity of widening the concept of participation, from pure consultation to the active involvement of local stakeholders, both in the planning process and in the implementation process; it can help to make an overall evaluation of environmental, social

and economic contexts of the area, whilst also considering the perception of the local community.

## **9. Infrastructure**

The basic physical systems of a business or nation is called infrastructure. It includes administrative, telecommunications, transportation, utilities, and waste removal and processing facilities. Some definitions also include education, health care, research and development, and training facilities. These systems tend to be high-cost investments; however, they are vital to a country's economic development and prosperity. The highly complex and fragmented structure of the tourism sector remains a key challenge in achieving consensus and developing coherent sustainable tourism strategies (Papatheodorou, 2004). The main goal of the tourism association should be to develop an integrated, continuous passage for sustainable tourism mobility, which improves the possibilities for smooth, problem-free and environmentally friendly travel (Verbeek, Bargeman, & Mommaas, 2011).

Improving fundamental infrastructures, such as roads, transportation systems, energy facilities (water, electricity, gas, etc.), health care centres and educational institutions, is efficient for both the community's residents and tourists.

## **10. Modelling and planning**

Tourism planning is unlikely to be conducted in isolation and is part of the broader planning process, which incorporates physical and economic plans, in addition to socio-cultural programmes. Political and commercial forces impact on all types of planning, and decisions are based on value judgements grounded in prevailing ideologies (Kong & Yeoh, 2003). Coordinated and comprehensive planning is seen as the key to sustainable tourism, which requires a comprehensive approach in both urban and rural settings around the world (Pearce, 1995). In order to succeed, the development needs to be carefully planned, so as to extend and harness its life cycle (Eccles, 1995). It seems that tourism enterprises are too focused on the short-term rather than long-term planning; however, they will need to engage in long-term planning in order to be capable of meeting future challenges. Modelling is able to propose the process of sustainable tourism, but it also incorporates essential areas of measurement interconnected through a series of gap and reconnection analyses.

## **11. Rural tourism**

Rural tourism actors are conscious that the main ingredient for success is the environment. Everybody is conscious that one must be respectful and careful with the environment. One should preserve Nature in its original form as much as possible, which is the same as keeping authenticity or diversity. Rural tourism is growing and developing as an integral part of the environment, in a sustainable way, keeping the identity of the locality and recovering lost activities, such as subsistence farming. Rural tourism is tourism in the country, not in the town (Sanagustin Fons, Mosene Fierro, & Gomez y Patino, 2011). The viability of rural tourism lies in the fact of its being compatible and complementary to traditional activities, and not being a substitute to previous incomes. Moreover, it is preserving all the countryside habitats, values and lifestyle. Regarding



how hectic urban life has become in recent decades, rural tourism has become a favourable and suitable alternative among tourists, particularly in developed countries.

In our twenty-first century society, large hotel chains or entertainment centres are all rather similar and lack of identity, without the special added value of the landscape or environment. That is where the rural environment has the advantage, as it shows the value of reality, no matter how advanced the hotels. It is a great opportunity for country people to complement traditional ways of agriculture and livestock as a source of incomes. Furthermore, the increase in demand for services and infrastructure that is arising in any kind of rural area benefits people living in these natural areas all the year round (Sanagustin Fons et al., 2011).

## **12. Environment and crises management**

Tourism is a major global economic sector and is increasingly making a contribution to national economies by creating income, taxes, hard currency, generating employment, and stimulating regional development (de Sausmarez, 2007). However, despite the positive impacts of tourism, such as economic benefits, it has significantly contributed to environmental degradation, negative social and cultural impacts and habitat fragmentation. These undesirable side-effects have led to the growing concern for the conservation and preservation of natural resources, human well-being and the long-term economic viability of communities (Choi & Sirakaya, 2006). Sustainable development emerged as a solution to optimise the residents' standards of living conditions by promoting local economic benefits, by protecting the environment and meeting visitors' needs to have a high-quality experience.

As a resource-dependent industry, tourism must recognise its responsibility to the environment. Tourism development that consistently ignores environmental concerns is unlikely to remain viable in the longer term (Pigram, 1990). Environmental benefits include support for preservation of the landscape and a stimulus for the preservation, protection and improvement of the natural environment. In this sense, new environmental regulations have been applied to protect the environmental assets, and adopt new laws in order to control the use of the landscape and to reduce damage (Sanagustin Fons et al., 2011).

The conceptual basis for natural resource management has fundamentally changed because of shifting attitudes for addressing societal challenges and encouraging interactive activities among public-private institutions in the process of governance. Plummer and Fennell (2009) stated that adaptive co-management is very logical as it combines the collaborative and adaptive narratives and 'orientates social-ecological systems towards sustainable trajectories' (Armitage, Berkes, & Doubleday, 2007; Fennell, Plummer, & Marschke, 2008; Folke et al., 2002; Folke, Hahn, Olsson, & Norberg, 2005; Olsson, Folke, & Berkes, 2004).

## **13. Eco-system and eco-tourism**

Ecotourism is one of the fastest growing sectors of the tourism industry worldwide (WTO, 2003). Ecotourism is often seen as a type of nature-based tourism and has attracted a lot of attention from tourists as an alternative type of tourism. Ayala (1995) defines ecotourism as 'tourism that allows for the enjoyment and understanding of the nature and culture of a destination while producing economic benefits and actively promoting environmental conservation.' Ecotourism management encounters many

challenges, including establishing a profitable and ecologically sustainable industry, while simultaneously achieving a satisfying experience for visitors and increasing standards of living in the host community (Lim & McAleer, 2005).

The growth of the tourism industry particularly in developing countries has not been planned and predicted accurately and is poorly organised, which has consequently resulted in the degradation, depletion and, in some cases, total destruction of essential economy-supporting natural resources (Baker, 1997; Obua & Harding, 1997; Shackley, 1996). Therefore, it is logical to stress the sustainability enhancement since it contributes to environmentally sensitive tourism development and protection of natural resources from the detrimental environmental impacts of tourism.

#### **14. Climate change**

The tourism industry, particularly nature-based tourism activities, is seen as being sensitive to the effects of climate change (Saarinen & Tervo, 2006; Scott, 2006; Scott, Jones, & Konopek, 2007). This issue needs to be investigated thoroughly and then some applicable strategies and policies need to be presented to deal with climate change. While the need to adapt to climate change is imperative, it is believed that this need is still not fully understood in the tourism sector (Bramwell & Lane, 2008; Weaver, 2011a). Moreover, tourist perceptions have an important part to play regarding climate change impacts on the tourism industry and destination choice, although consumer choice is mostly influenced by the perceived environmental changes that may or may not have to do with actual conditions (UNWTO–UNEP–WMO, 2008).

#### **15. Ecology**

Environmental protection became a major issue in the 1990s after the introduction of the concept of sustainable development by the Brundtland Commission (WECD, 1987). Regarding the fact that the environment is an indispensable asset to the tourism industry, it is vital to take the right actions for protection and conservation of environmental, natural, cultural and historical resources as the primary inputs in the production of the tourist output. Praiseworthy attempts have been made to internationalise the environmental awareness through organisations such as Green Globe, which has led to the gradual restructuring of the tourist industry to adopt strategies and policies in support of environmental quality, based on the sustainable use of environmental resources (Lim & McAleer, 2005). To mention some environmental and ecological side effects of tourism practices, greenhouse gas emissions are the most controversial external effects of the transportation sector, and result in global warming. Changes in the water cycle, noise level, higher energy consumption, pollutant emission, and the spread of diseases are some other examples of the environmental impacts of the tourism industry. This shows the need both to alleviate the use of natural non-renewable resources and to substantially decrease global warming, and implies radically different economic planning compared with the current pattern. In order to guarantee the long-term survival of the tourism industry, it is essential that tourism's inputs, such as transport and the environment be combined in a sustainable way (Martin-Cejas & Ramirez Sanchez, 2010).

Making optimal use of environmental resources is a key element in tourism development, and maintaining essential ecological processes and helping to conserve the natural heritage and bio-diversity are the core foundational concepts for sustainable development (UNWTO, 2004).

## **16. Culture and heritage**

Culture is a highly complicated term. It has long been a popular concept in academic research and has been studied in many different fields. Yaprak (2008) considers the ‘values, beliefs, norms, and behavioural patterns of a national group,’ as defined by Leung, Bhagat, Buchan, Erez, and Gibson (2005), as an illustration of the concept of culture at the national or societal level.

A wide variety of factors, including social, cultural and economic considerations at each level of the tourism system, affects the implementation of sustainable tourism practices (Day & Cai, 2012). Individual attitudes – often influenced by culture – play an important role in understanding resident and other stakeholder perspectives about sustainable tourism (Chen & Jim, 2010; Liu, Ouyang, & Miao, 2010). As an example, the Chinese can be considered as having a ‘harmony approach characterised by respecting nature and loving people’ (Wang & Heikki, 2009). Moreover, cultural and heritage priorities are reflected in sustainable development approaches in cities and villages in China (Zhao, Wang, Fu, Wang, & Zhang, 2011).

## **17. Human resource management**

Each enterprise needs to have skilled and knowledgeable labour in order to succeed in an ever-increasing competitive business world. The tourism industry is not exceptional in this respect but it is influenced more as it potentially has more interactions with people. Therefore, if tourism companies are to survive, training and educating the workforce is of great importance. In this context, when tourism destinations are well managed, skill development can provide important benefits to local communities and contribute directly or indirectly to nature conservation. However, when destinations are poorly managed, tourism can have a serious impact on the ecosystems and contribute to the loss of cultural integrity and identity of the destination (Charters & Saxon, 2007).

## **18. Energy and material saving**

Energy is one of the vital factors being influenced in the tourism industry. In this regard, it needs much more attention, as tourism activities in natural resources have led to negative consequences such as severe degradation of natural landscapes, a lack of water provisions, pollution of coastal zones, and the construction of massive transport and building infrastructure. The realisation of the degradatory effects of tourism has led to the concept of sustainable tourism (Michalena & Tripanagnostopoulos, 2010). Regarding the importance of energy as an indispensable constituent in economic and social development, governments and other tourism authorities should continuously review the energy policy to ensure long-term reliability and security of energy supply and also undertake efforts to ensure the sustainability of energy resources, both depletable and renewable. To do so, countries should plan energy programmes and strategies in line with sustainable development goals and objectives (Mohamed & Lee, 2006). It is clear that there is a close connection between renewable energy and sustainable development particularly in tourism sustainable development.

Table 15. Distribution by categories and the references.

Category	Reference
1 Paradigm	Briassoulis (2002); Northcote and Macbeth (2006); Miller et al. (2010); Buckley (2012); Lansing and De Vries (2006); McMinn (1997); Jim (2000); Scheyvens (2011); Macleod and Todnem (2007); Gupta (1999); Eccles and Costa (1996); Antimova et al. (2012); Franch et al. (2008); Grundey (2008); Bramwell and Lane (2012); Bramwell and Lane (2013); Bramwell and Lane (2011); Høyer (2000); Liu (2003); Bramwell and Lane (2008); Bramwell and Lane (1993); Clarke (1997); Bramwell and Lane (1999); Aitchison et al. (2004); Okeiyi et al. (2005)
2 Sustainable tourism development	Tosun (2001); Miller (2001); Torrent (2008) Shaalan (2005); Fortuny et al. (2008); Fortanier and van Wijk (2010); Kitnuntaviwat & Tang (2008); Larson and Herr (2008); Nicholas and Thapa (2010); Sinclair and Jayawardena (2003); Harrison et al. (2003); Jayawardena (2003); Altinay and Hussain (2005); Jayawardena et al. (2008); Kennett-Hensel et al. (2010); Irandu (2006); Mbaiwa (2005); Sindiga (1999); Aminian (2012)
3 Market research and economics	Dolnicar and Leisch (2008); Dwyer et al. (2009); Zhang et al. (2011); Petrović-Randelović and Miletić (2012); Mayaka and Prasad (2012); Rio and Nunes (2012); Blancas et al. (2010); Mercado and Lassoie (2002); Santos-Corrada and Figueroa (2012); Eccles (1995); George and Henthorne (2007); Joppe (2003); Ismail and Khalil (2010); Holleran (2008); Dallen (2007); Reddy (2008); Bramwell and Lane (2009)
4 Policy making	Liu, Tzeng, and Lee (2012); Godfrey (1998); Castellani and Sala (2010); Rivera (2002); Byrd (2007); Clayton (2003); Hall (2011); Koutsouris (2009); Sheng and Tsui (2009); Bramwell and Lane (2010); Lane (2009a); Spenceley (2008); García-Melón et al. (2012)
5 Infrastructure	Adriana (2009); Martin Cejas and Ramirez Sanchez (2010); Liu et al. (2013); Sanagustin Fons et al. (2011); Uyarra et al. (2009); Horobin and Long (1996); Verbeek et al. (2011); Bowman (2011); Gössling et al. (2007); Ozturk and Eraydin (2010); Matev and Assenova (2012)
6 Modelling and planning	Henderson (2005); Kernel (2005); Leiper et al. (2008); Michalena et al. (2009); Divino and McAleer (2009); Padin (2012); Reihanian et al. (2012); Padin and Svensson (2013); Aminu et al. (2013)
7 Rural tourism	Su (2011); Ghaderi and Henderson (2012); Huiqin and Linchun (2011); Tan et al. (2012); Gossling (2003); Park and Yoon (2011); Liu et al. (2008); Austin (2003)
8 Environment and crises management	Ghina (2003); Alonso and Ogle (2010); Day and Cai (2012); Plummer and Fennell (2009); Butler (2000); Nepal and Chipeniuk (2005); Choi and Sirakaya (2006); de Sausmarez (2007)
9 Eco-system and eco-tourism	Sasidharan et al. (2002); Gibson et al. (2003); Knowd (2006); Weaver (2011b); Jie et al. (2000); Viducic (2008)
10 Climate change	Scot (2011); Pang et al. (2013); Kaján and Saarinen (2013); Weaver (2011a); Turton et al. (2010)
11 Ecology	Dolnicar and Leisch (2008); Gossling et al. (2005); C. Lim and M. McAleer (2005); Hunter and Shaw (2007)
12 Culture and heritage	Richins (2009); Bordignon et al. (2009); Ato Arthur and Mensah (2006)
13 Human resource management	Kaplan (2008); Cole (2006)
14 Energy and material saving	Michalena and Tripanagnostopoulos (2010); Lumsdon (2000)

Source: Compiled by the authors.

### 19. Categories and the references

Table 15 presents the 14 categories with their related references, which is helpful for easy access to the references pertaining to each category.

### 20. Distribution by publication year

Table 16 gives valuable information regarding the frequency distribution by publication year. Since 2008, there has been a considerable growth in the number of papers published on STD. Just over half (56.8%) of the total number of papers were published since 2008.

### 21. Distribution by publishers

Table 17 shows the number and percentage distribution of articles by publisher. Taylor & Francis and Elsevier are the most popular publishers, as they have published 84 papers (64%) of the total STD papers. Emerald and Springer which respectively published 26 and 12 papers on STD, are two other popular publishers.

### 22. Distribution by journals

Table 18 shows the number and percentage distribution of scholarly papers by journal publication. Twenty-five of 47 journals have just one paper on STD. According to Table 18, the *Journal of Sustainable Tourism* is the most popular one, as it has published 28 papers (21.3%) of the total STD papers. *Tourism Management* and the *International Journal of Contemporary Hospitality Management*, which respectively published 15 and 13 papers on STD, are two other popular journals.

### 23. Discussions

Tourism is a substantial global system that both impacts the environment and is impacted upon by the environment. As such, tourism must address the challenges of environmental conservation in all aspects of the system. This requires a system-wide approach to environmental issues based on an understanding of the complexity of the tourism system and the interrelated nature of its components. This study is categorised in 15 sections. It seems that all aspects of sustainability are covered in researches, but if we look deeply, some gaps can still be found in the literature of sustainable tourism. The social, economic and environmental dimensions are very extensive and it seems that sustainability in tourism is multi-dimensional. The essence of sustainability and sustainable development is that they are dynamic. Developments should be considered in different aspects and perspectives of the dynamic framework of sustainability.

Concept and application of this new perspective in tourism are developed in many countries and the presented literature would play a key role not only in having a healthy and sustainable tourism industry but also in the economic growth of countries and their present and future stakeholders. The authors believe that sustainable tourism sustainability in sustainable tourism has taken the very first steps and needs more study and research. All of the research is based on local situations, while, in the future, sustainable tourism will change to a transnational issue. Generally, tourism is a kind of green

Table 16. Distribution by publication year.

Years	N	Percentage
1993–1995	2	1.52
1996–1998	5	3.78
1999–2001	11	8.34
2002–2004	17	12.88
2005–2007	22	16.66
2008–2010	40	30.3
2011–2013	35	26.52
	132	

Source: Compiled by the authors.

Table 17. Distribution by publishers.

Publisher	Number of articles	Percentage
Elsevier	41	31
Springer	12	9
Kluwer	6	4
Wiley	4	3
Emerald	26	20
Taylor & Francis	43	33
Total	132	

Source: Compiled by the authors.

Table 18. Distribution by journals.

Journal publisher and proceedings	Number of articles	Percentage
Elsevier		
1 <i>Annals of Tourism Research</i>	4	3
2 <i>Tourism Management</i>	15	11.4
3 <i>Journal of Cleaner Production</i>	4	3
4 <i>Ecological Economics</i>	1	0.75
5 <i>Renewable Energy</i>	1	0.75
6 <i>International Business Review</i>	1	0.75
7 <i>Energy for Sustainable Development</i>	1	0.75
8 <i>Environmental Modelling &amp; Software</i>	2	1.52
9 <i>Tourism Management Perspectives</i>	5	3.85
10 <i>Energy Procedia</i>	2	1.52
11 <i>Procedia - Social and Behavioural Sciences</i>	2	1.52
12 <i>Ecological Indicators</i>	1	0.75
13 <i>Applied Energy</i>	1	0.75
14 <i>Environmental Impact Assessment Review</i>	1	0.75
Springer		
15 <i>Journal of Forestry Research</i>	1	0.75
16 <i>Transit Stud Rev</i>	2	1.52
17 <i>Environmental Management</i>	1	0.75
18 <i>Clean Techn Environ Policy</i>	1	0.75

(Continued)

Table 18. (Continued).

Journal publisher and proceedings		Number of articles	Percentage
19	<i>Reg Environ Change</i>	1	0.75
20	<i>Journal of Business Ethics</i>	1	0.75
21	<i>Environ Dev Sustain</i>	2	1.52
22	<i>Serv Bus</i>	1	0.75
23	<i>Environ Earth Sci</i>	1	0.75
24	<i>The Environmentalist</i>	2	1.52
Kluwer			
25	<i>Environment, Development and Sustainability</i>	3	2.28
26	<i>Policy Sciences</i>	1	0.75
27	<i>GeoJournal</i>	1	0.75
Wiley			
28	<i>International Journal of Tourism Research</i>	2	1.52
29	<i>Sustainable Development</i>	1	0.75
30	<i>Asia Pacific Viewpoint</i>	1	0.75
Emerald			
31	<i>International Journal of Contemporary Hospitality Management</i>	13	9.9
32	<i>Tourism Review</i>	4	3
33	<i>European Business Review</i>	3	2.28
34	<i>International Journal of Social Economics</i>	1	0.75
35	<i>Management Research Review</i>	1	0.75
36	<i>Management of Environmental Quality: An International Journal</i>	2	1.52
37	<i>International Journal of Culture Tourism and Hospitality Research</i>	2	1.52
Taylor & Francis			
38	<i>Technological and Economic Development of Economy</i>	1	0.75
39	<i>Journal of Sustainable Tourism</i>	28	21.3
40	<i>Asia Pacific Journal of Tourism Research</i>	1	0.75
41	<i>Anatolia: An International Journal of Tourism and Hospitality Research</i>	1	0.75
42	<i>International Journal of Sustainable Development &amp; World Ecology</i>	2	1.52
43	<i>Current Issues in Tourism</i>	2	1.52
44	<i>Journal of Hospitality &amp; Leisure Marketing</i>	1	0.75
45	<i>Tourism Geographies: An International Journal of Tourism Space, Place and Environment</i>	4	3
46	<i>Journal of Ecotourism</i>	1	0.75
47	<i>Journal of African Business</i>	2	1.52
Total		132	

Source: Compiled by the authors.

industry and appropriate management can leverage the ongoing economic development of countries.

Decisions and policy-making in the tourism industry should be multi-dimensional and consider causal relations of issues.

## 24. Conclusion

This paper has presented an extensive review of the literature on sustainable tourism definitions and applications. The literature consists of 132 papers from 47 scholarly journals published since 1993. For this purpose, each paper was categorised into 15 application areas based on a developed classification scheme. Moreover, the papers are sorted by year of publication, publication journal, authors' nationality, subject area, region of focus, and number of nationality citations. This review attempts to create a window of opportunity to help researchers' and practitioners' efforts and also to meet their requirements for easy access to sustainable tourism publications.

This research has some limitations. The first limitation is that the data used in this review are collected from scholarly journals, which exclude conference proceeding papers, master's dissertations, doctoral theses, textbooks, and unpublished working papers in the Sustainable Tourism literature. The second limitation is that just English journals are considered in this research work; hence, journals in other languages were not examined. This may imply that this review is not thorough; however, the authors believe that it provides a comprehensive review since the majority of papers published by scholarly journals are included. Therefore, this paper offers to academic researchers and practitioners a framework for future research.

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