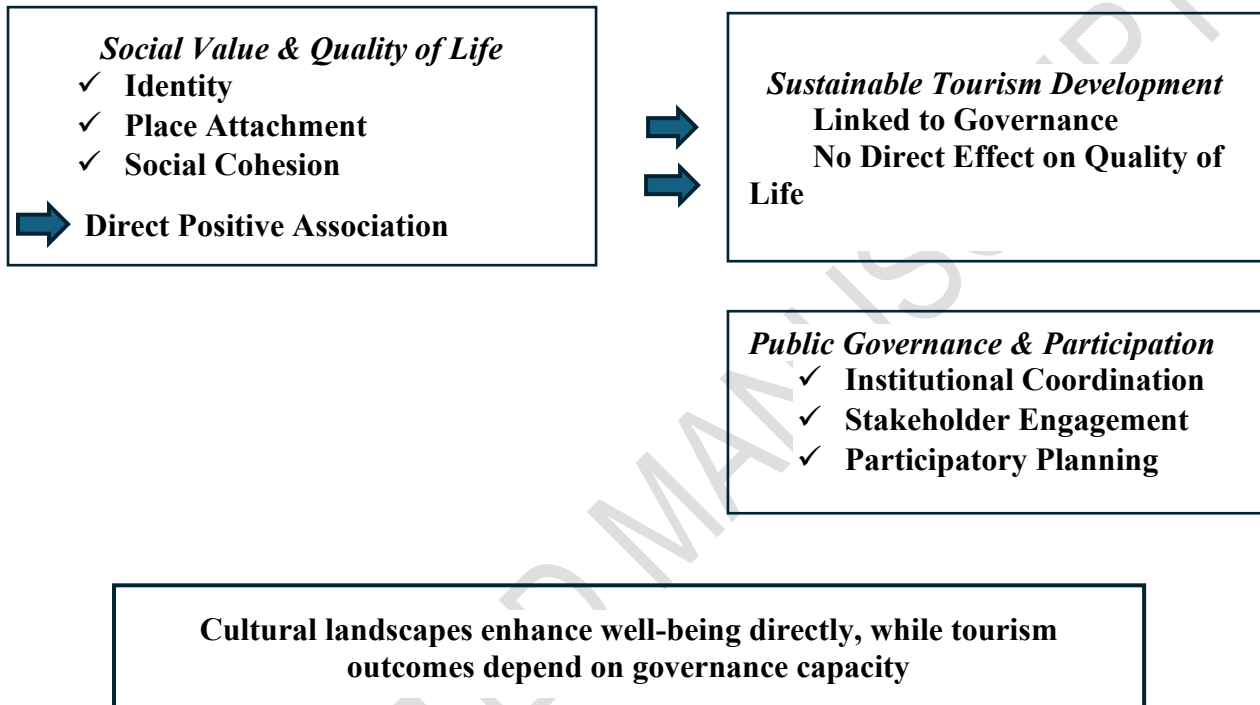


Graphical abstract

Cultural landscapes: Governance, Sustainable Tourism and Quality of Life in the Case of the Stone Built Roads of Chios (Greece)



CULTURAL LANDSCAPES: GOVERNANCE, SUSTAINABLE TOURISM AND QUALITY OF LIFE IN THE CASE OF THE STONE BUILT ROADS OF CHIOS (GREECE)

Maria P. Doumi, mdoumi@aegean.gr

Dimitris Angelis-Dimakis, dim.angelis@gmail.com

Nikolaos Iason Koufodontis, ikouf@aegean.gr

Vasilis Angelis, v.angelis@aegean.gr

Department of Tourism Economics and Management, University of the Aegean

Michalon 8, Chios, Greece

Abstract

Greek islands are widely distinguished by the central role of landscape as a primary tourism resource. This paper examines local stakeholders' perceptions of the stone-built paths of the island of Chios in Greece as a cultural landscape, their potential contribution to sustainable tourism development, their relationship with quality of life, and the role of local governance in their management. Data was obtained via a structured stakeholder survey featuring a small purposive sample of local stakeholders and was subsequently processed using exploratory descriptive and correlation analysis. Taking into account the sample size and the non-probability sampling method, the statistical findings are considered indicative. The findings show strong recognition of the stone-built paths as a valued cultural landscape and reveal a positive association between landscape perception and quality of life. Sustainable tourism development is significantly linked to governance and stakeholder participation but shows no direct relationship with quality of life. The results suggest that cultural landscapes enhance well-being mainly through social and identity values, while sustainable tourism outcomes depend on effective governance and participatory management.

Keywords: cultural landscapes; sustainable tourism; quality of life; participatory governance; stakeholder perceptions

1. Introduction

“Cultural landscape” refers to the historically evolving interaction between human societies and the natural environment, reflecting the combined imprint of cultural practices and ecological processes over time (UNESCO, 2012; Sauer, 1925). Landscape constitutes a fundamental component of the tourism product, particularly in sightseeing and place-based experiences, since tourist destinations are largely consumed visually and experientially through their environmental and cultural settings (Urry & Larsen, 2011; Terkenli, 2002). Tourism and landscape therefore form a mutually constitutive relationship: tourism depends on landscapes for attractiveness and meaning, while tourism development simultaneously reshapes and reinterprets landscapes through use, representation, and management practices (Gössling et al., 2012; Mitchell et al., 2009). This interaction is inherently complex, involving trade-offs between economic benefits and environmental and socio-cultural pressures associated with tourism growth. Residents of landscape-rich regions may benefit through employment opportunities, income diversification, and improvements in perceived well-being and living conditions, although such benefits are often unevenly distributed (Andereck & Nyaupane, 2011; Sharpley, 2014). At the same time, tourism destinations rely on the integrity and quality of their landscapes for long-term attractiveness and competitiveness; consequently, tourism planning and management play a critical role in protecting and enhancing landscape resources in order to sustain destination resilience and viability over time (Ritchie & Crouch, 2003; Terkenli, 2021; Mitchell et al., 2009).

During the last decade, cultural landscapes have increasingly been conceptualized as socio-ecological systems integrating biophysical processes, material heritage, and living social practices (Plieninger & Bieling, 2012; Berkes et al., 2008). Beyond their aesthetic and historical

value, such landscapes are frequently mobilized as strategic resources for local and regional development, particularly through heritage-based tourism that seeks to combine economic opportunities with long-term sustainability objectives (Timothy & Boyd, 2003; UNESCO, 2012). However, the relationship between tourism development and residents' quality of life is neither direct nor automatically positive. Empirical research demonstrates that tourism benefits and burdens are often unevenly distributed across communities and are strongly shaped by governance arrangements, institutional capacity, participatory mechanisms, and levels of local social acceptance (Andereck & Nyaupane, 2011; Kim et al., 2013; Bramwell & Lane, 2011). Consequently, social and cultural development outcomes in cultural landscapes depend not only on the intrinsic quality of heritage resources but also on the effectiveness of planning frameworks, governance structures, and management practices guiding tourism development. Mediterranean island regions provide particularly suitable contexts for examining these dynamics due to their ecological fragility, spatial constraints, and the strong cultural identification of resident communities with local heritage and landscapes (Briguglio, 1995; Baldacchino, 2006). Within such environments, vernacular infrastructures, including networks of stone-built paths and roads, constitute iconic structural elements of cultural landscapes, embodying long-term patterns of human mobility, agricultural production, trade, and settlement organization shaped through continuous interaction between society and environment (Sauer, 1925; Mitchell et al., 2009). Chios (Greece), for example, preserves an extensive and relatively well-maintained network of stone-built roads that materializes past socio-economic systems while continuing to define the island's cultural landscape identity. Although these structures are widely recognized locally as heritage assets, their integration into coherent development and tourism strategies remains fragmented and largely project-based, reflecting broader challenges in coordinating heritage conservation and tourism planning (Ashworth & Tunbridge, 2000; Dredge & Jenkins, 2007). This situation highlights the need for

more integrated and cross-sectoral planning approaches capable of linking heritage protection, tourism development, and community well-being within unified governance frameworks. Consequently, governance models must address the inherent trade-offs between economic development objectives and the long-term protection of cultural and environmental resources, while tourism–landscape interactions should be understood from a systems perspective in order to enhance regional resilience and sustainability (Bramwell & Lane, 2011; UNESCO, 2012).

The cultural landscape has increasingly been identified in social science and economic research as an important contributor to residents' quality of life, supporting place attachment, social identity, and everyday well-being through both material and symbolic values (Andereck & Nyaupane, 2011; Kim, Uysal & Sirgy, 2013). Heritage resources can provide strong motivations and focal points for sustainable tourism development, particularly in peripheral and island regions where cultural distinctiveness constitutes a key development asset (Timothy & Boyd, 2003; UNESCO, 2012). At its core, sustainable tourism seeks to balance economic benefits with cultural preservation, environmental protection, and the welfare of host communities, integrating long-term social and ecological considerations into tourism planning and management (UNWTO, 2013; Hunter, 1997). Nevertheless, tourism development may also generate adverse consequences for resident communities, including overtourism pressures, cultural commodification, and uneven distribution of benefits, as widely documented in empirical tourism research (Sharpley, 2014; Milano et al., 2019).

Quality of life has increasingly become a key indicator in the evaluation of tourism and regional development policies, reflecting a shift from purely economic assessments toward broader social sustainability criteria (Kim et al., 2013; Uysal & Sirgy, 2023). The concept encompasses not only material and economic conditions but also social cohesion, environmental quality, sense of place, and subjective everyday well-being experienced by residents (Diener et al., 2009). Within tourism research, residents' and stakeholders' perceptions are widely regarded

as essential for assessing whether development trajectories are socially sustainable, since local evaluations capture lived experiences of tourism impacts that may not be visible through economic indicators alone (Andereck et al., 2005; Nunkoo & Ramkissoon, 2011; Sharpley, 2014).

Governance in the fields of heritage and tourism has increasingly emphasized stakeholder participation as a means of enhancing both the effectiveness and legitimacy of decision-making processes (Bramwell & Lane, 2011; Hall, 2013). Consequently, heritage and tourism management systems, including institutional networks and stakeholder arrangements, are now widely understood as governance structures rather than purely administrative or managerial mechanisms (Dredge & Jenkins, 2007). Participatory approaches are closely associated with democratic legitimacy, social acceptance, and long-term sustainability outcomes, since inclusive decision-making processes foster trust, shared responsibility, and community support for development pathways (Arnstein, 1969; Reed, 2008; Nunkoo & Ramkissoon, 2011).

Based on this theoretical background, the study examines three relationships among perceived cultural landscape value, sustainable tourism development, quality of life, and local governance/stakeholder participation. The hypotheses are developed systematically in the Conceptual Background Section.

Following this introduction, Section 2 reviews the origins and evolution of the cultural landscape concept. Section 3 examines the relationship between cultural landscapes and tourism development. Section 4 presents the Greek context and the case of the stone-built roads of Chios. Section 5 outlines the research methodology, followed by the presentation of empirical findings in Section 6. Section 7 discusses the results, while Section 8 presents the theoretical and practical implications. Sections 9 and 10 conclude the paper and discuss limitations and directions for future research.

2. Cultural Landscape

The term cultural landscape is widely used in geography, ecology, and heritage studies to describe the relationship between people and the environment. The World Heritage Committee (UNESCO, 2012) defines cultural landscapes as “cultural properties which depict the combined works of nature and man” and distinguishes three broad categories: intentionally designed landscapes, organically evolved landscapes, and associative cultural landscapes. The concept was first developed in early twentieth-century through Otto Schlüter’s distinction between the “original landscape” and the “cultural landscape,” and was later formalized by Sauer (1925), who described cultural landscape as the result of cultural action upon a natural area (James & Martin, 1981; Jones, 2003). This early formulation remains important because it established cultural landscape as a relational concept, linking material environments, human activity, and historically accumulated cultural meanings.

After Schlüter and Sauer, the concept was gradually extended beyond geography into fields such as ecology, landscape architecture, archaeology, environmental management, agricultural policy, nature conservation, and heritage management (James & Martin, 1981; Antrop, 2005; Plieninger & Bieling, 2012). Its institutional importance increased in 1992, when UNESCO formally recognized cultural landscapes as a World Heritage category, thereby acknowledging heritage properties shaped by the interaction of natural and cultural processes rather than by either nature or culture alone (Fowler, 2003; Mitchell et al., 2009; UNESCO, 2012).

More recently, cultural landscape research has moved beyond classification and historical definition toward more relational, governance-oriented, and future-facing understandings of landscape. Contemporary studies increasingly approach cultural landscapes as biocultural systems in which material heritage, ecological processes, local knowledge, social practices,

memory, and living traditions interact over time. This perspective also emphasizes that cultural landscapes are not neutral physical settings but socially interpreted and sometimes contested spaces whose meanings influence collaboration, participation, and governance outcomes (Schaal-Lagodzinski et al., 2024). In parallel, recent work has highlighted the need for forward-looking conservation and planning tools, including scenario-based approaches, in order to manage cultural landscapes under conditions of environmental change, development pressure, and shifting community needs (Tang et al., 2026). Research on vernacular cultural landscapes further shows that built forms, everyday practices, local identity, and inherited knowledge are closely intertwined, making their preservation dependent not only on material conservation but also on community engagement and sustainable territorial management (Vuksanović-Macura et al., 2025). These recent perspectives reinforce the relevance of examining the stone-built roads of Chios not simply as historical infrastructure, but as elements of a living cultural landscape embedded in social, ecological, and governance processes.

3. The Relationship Between Cultural Landscape and Tourism

Landscape is central to tourism development, destination marketing, tourist consumption, and destination competitiveness, because places are experienced through their environmental, cultural, and visual qualities (Urry & Larsen, 2011; Ritchie & Crouch, 2003). Recent work further shows that tourism landscapes are being reshaped by broader macro-geographical transformations, including changing mobility patterns, cultural economies, and new forms of landscape consumption (Terkenli, 2025). At the same time, the relationship between cultural landscape and tourism is inherently ambivalent: cultural landscapes provide the resource base for tourism, but tourism can also alter, commodify, or degrade the very qualities on which destination attractiveness depends (Fowler, 2003; Mrđa, 2015; Angelis-Dimakis et al., 2024).

Tourism demand often encourages the commercialization of cultural landscapes in destination marketing (Cohen, 1988; Smith, 2006). For this reason, integrating tourism development with cultural landscape management has become an important objective in destination and spatial planning (Mrđa et al., 2015, 2016). Tourism also reshapes rural spaces by influencing recreation patterns, livelihood systems, employment, income generation, and resource management, thereby transforming traditional landscapes into tourism-oriented territories (Heslinga et al., 2020; Angelis-Dimakis & Doumi, 2024). Recent evidence from traditional village tourism also shows that tourism development can alter ecological, production, and living spaces, confirming that tourism does not merely use cultural landscapes but actively reorganizes human-land relations and land-use dynamics (Wang et al., 2025).

A comprehensive evaluation of a region's cultural landscape potential is therefore a necessary step in tourism planning (Mrđa et al., 2016). Such evaluation usually considers nativeness, authenticity, distinctiveness, uniqueness, and carrying capacity as criteria for determining whether tourism development can be compatible with landscape conservation (MacCannell, 1976; Timothy & Boyd, 2003; Wang, 1999). In cultural landscapes, tourism potential is also shaped by how residents and visitors perceive the preservation of built heritage, local identity, resource use, and sustainability regulation (Vuksanović-Macura et al., 2025). This makes cultural landscape tourism a planning and governance issue, requiring evaluation criteria, sustainable development pathways, and management tools that balance use with protection. Scenario-based planning is increasingly presented as a useful tool for cultural landscape management because it helps planners assess possible development pathways, identify priorities, and support adaptive decision-making under uncertainty (Tang et al., 2026).

Tourism destinations increasingly face social and environmental pressures that make resilience and adaptive management central to sustainable development. In social-ecological terms, resilience refers to the capacity of systems to adapt to future change (Holling, 1973; Folke,

2006). Tourism can support regional resilience through employment, income generation, and local adaptation, but these benefits depend on maintaining the landscape qualities on which destination appeal rests. The central challenge is therefore to balance conservation and tourism development while avoiding disruption to communities and landscapes (Heslinga et al., 2018; Terkenli, 2021). Recent research on nature-based cultural heritage sites shows that visitor density is shaped by artificial and natural landscape characteristics, with visitor perception also playing a secondary role, making visitor-flow management an important part of sustainable heritage-landscape governance (Jia et al., 2025).

Synergies between tourism development and landscape protection emerge when economic use and conservation are planned as mutually supportive rather than competing objectives (Heslinga et al., 2018). Excessive protection may exclude local use, while growth-oriented development may degrade the landscape resource on which tourism depends. For this reason, identifying and sustaining such synergies depends on policy, stakeholder decision-making, institutional coordination, and inclusive governance (Bramwell & Lane, 2011; Hall, 2011). Recent heritage-management research similarly argues that cultural heritage should be approached as holistic cultural landscapes rather than isolated monuments, especially because destinations face overtourism, environmental deterioration, and cultural commodification pressures that require integrated management systems (Urošević et al., 2026). Effective governance therefore requires attention to institutional context, public discourse, stakeholder engagement, shared vision-building, flexibility, and experimentation (Heslinga et al., 2018; Terkenli, 2021).

4. Conceptual Background

The landscape tradition in Greece is relatively feeble and the country lacks a strong landscape consciousness. One of the reasons behind it that Greeks did not develop a landscape

consciousness the way other Europeans had already done by the seventeenth century as they were under the Ottoman Empire. That divide in history still determines Greek landscapes today (Terkenli, 2011; Pavlis & Terkenli, 2017).

Following World War II, Greece experienced rapid modernization and adopted the most widely accepted European development model (Louloudis, 1992; Pettifer, 1993; Legg & Roberts, 1997; Damianakos, 2002). This rapid transformation made people lose their connection with nature, so landscapes turned out to be something that people were not always very concerned about (Pettifer, 1993; Legg & Roberts, 1997). Furthermore, it brought to the Greek landscape elements such as standardization, commodification, and homogenization (Terkenli, 2002, 2006; Antrop, 2005). Since the 1950s, intensified agriculture and lack of proper environmental management have forced the most vulnerable local populations further away in the countryside which is facing nature, demographics, technology, and economic problems (Woods, 2004). Urbanization and rural depopulation have only deepened the disconnection of people from land, nature, and culture (Kovani, 2002; Terkenli, 2010, 2011). Urban residents, in particular, did not develop a strong sense of landscape. The lack of landscape culture and consciousness in Greece is attributed more to post-war urbanization and distorted development than to globalization (Terkenli, 2001; 2010; 2011; Damianakos, 2002; Kovani, 2002). Since the mid-2000s, there have been a few signs of a reawakened interest and an increasing landscape conscience in line with the Western one mainly due to domestic tourism (Terkenli, 2011). Yet, at the same time, changes in the standards and ways of life have led to the rise of problematic human-landscape relationships. This is clearly shown in the rapid modernization in the 1980s and 1990s despite the slow progresses recently made (Damianakos, 2002). The situation has even worsened due to lack of institutional landscape policy support (Terkenli, 2011), poor implementation of the European Union's Common Agricultural Policy (CAP) and other EU programs for landscape protection (Louloudis et al., 2005), as well as the delayed ratification

(2010) and hesitant implementation of the European Landscape Convention (ELC). These concerns are mainly responsible for a wide range of problems including among other things, the illegal building for housing, second homes, tourism and recreational purposes, desertion of rural areas, as well as degradation and mismanagement of natural resources. All these phenomena taken together have led to the loss of the Greek landscape character and identity (Beriatos, 2012; Manolidis, 2009; Terkenli & Pavlis, 2012; Goltziou, 2015). Recent spatial evidence from the Southern Aegean similarly shows that built-up dispersion places measurable pressure on island cultural heritage, reinforcing concerns about the vulnerability of Greek island landscapes to fragmented development and weak spatial control (Chatzi, 2025).

While a slow progress is on the way, studies reveal that there are still some cases where rural people in Greece show a lack of respect for the landscape and at times act in ways harming the environment or ignoring it (Pavlis & Terkenli, 2017). There is no doubt that the main reason for that is the fact that there have been very few environmental and landscape-related educational initiatives and awareness rising activities. Any kind of restorative culture is totally dependent on an environmentally friendly basis (Birkeland, 2008). Soini and Birkeland (2014) emphasize that cultural change is considered necessary for sustainable practice adoption because it is during cultural practices and processes that values and ethical decisions concerning sustainable development, including social and environmental aspects, are negotiated and communicated. Thus, strategies efficient in sustainable landscape stewardship and community should consist of landscape planning, management, and protection according to the ELC as well as participatory planning and citizen involvement. Such activities ought to be supported by landscape education and by the formation of a landscape culture and conscience that recognize and value local landscape knowledge and care for the landscape (Jones & Stenseke, 2011; Pavlis & Terkenli, 2017). Recent landscape character assessment

research in rural Crete further demonstrates the value of systematic landscape identification and evaluation for sustainable rural management in Greece (Gkoltsiou, 2025).

The traditional stone-built roads in Chios constitute an important but little-studied element of the island's cultural landscape. These local infrastructures or *kalderimia*, as they are generally called, are the tangible and material results of the long-term socio-ecological relations that the human communities of the island have maintained with their environment (Plieninger & Bieling, 2012). Instead of being mere carry-over vestiges of pre-modern transportation systems, they are localized embodiments of human ingenuity in territorial management and adaptive strategies which eventually shaped human mobility, agricultural production and the settlement patterns of the island over time.

The relevant theory of cultural landscapes holds that landscapes co-evolve with human culture as dynamic systems formed through communication between the environment and culture across time (Terkenli, 2021). Within this theory, stone-built roads are interpreted as important structural elements which facilitate and mediate the relations among settlements, agricultural areas, churches and monasteries as well as seaside points. The spatial organization of the road system in Chios is the outcome of the adaptation of the inhabitants to the rugged mountainous terrain, the seasonal streams and the natural features and landscape morphology of the island. Their architectural features such as stone built dry walls for retaining the soil, stepped gradients, stone paving, and water channels for run-off, demonstrate the use of local knowledge and technologies that ensured the resilience and longevity of these roads.

The complementarity of such minor roadways with higher order territorial systems is very well exemplified in the south of Chios where the *Mastichochoria* or villages of the mastic production took the form of fortified settlements geared during a highly specialized agricultural landscape. The production of mastic has been recognised as one of the unique agricultural heritage landscapes where environmental specificity, social organisation and collective worker

interaction are all brought together (Gkoltsiou et al., 2021). The old stone road network was a means that eased the labor, product and social mobility which thus contributed to the economic and spatial integration of the villages and their fields.

In recent studies, there is a changing trend of thought which acknowledges that old paths are culturally seen as routes rather than mere physical features. Oikonomopoulou et al. (2017) argue that cultural routes in Chios should be considered as combined heritage systems which, through GIS based recording and conservation planning strategies, can connect archaeological sites, people's traditional buildings and countryside farmland. Contemporary work on multimodal tourist routes in Greece similarly highlights cultural path planning, integrated trail assets, digital mapping, seasonal extension, and community engagement, while identifying Chios GIS-mapped heritage trails as one example of digitally supported cultural path planning (Dimou et al., 2026). Consequently, the stone roads of the island become heritage roads not only linking physical and cultural aspects but also societal and spiritual values of culture.

The debate on cultural routes has been broadened to include traditional paths by looking at the Greek examples. Economou and Zikidis (2014) demonstrate that historically used everyday pathways, if reinterpreted as cultural assets and integrated with the framework of participatory planning, can become the driving force behind the sustainability of the local community's economy. Similarly, Moudopoulos (2023) points out that historical routes are not only ways of understanding the landscape but also the carriers of one's cultural memory and knowledge thus emphasizing that such paths possess the power to even transport this culture and knowledge through tangible movement. These writers underline that the importance of stone roads lies not merely in their number or physical presence but in the fact that they can bring to and from the locality very profound and essentially meaningful experiences (Ingold, 2000).

Nevertheless, the aging process of the stone roads in Chios is still evident, and the roads remain sensitive to certain pressures. The historic network is breaking up, and its continuity and

interpretative coherence are being reduced due to people leaving the island for the city, changing farming practices, getting encroached by trees and weeds, and updating of the infrastructure. Some parts have been developed into hiking and experience tourism, but these activities are generally targeted and project-based and hardly ever become a part of the entire landscape governance strategy.

Previously, the debate on Mediterranean cultural heritage and regional development stressed that if cultural heritage is to be a real force for development, it needs to be part of a well-organized policy framework (Theodora, 2020). If not, tourism valorisation will probably be only the further commodification of the visually attractive segments, while neglecting the less accessible but equally historically important paths. The key issue concerns the right balance between preservation, public use and the community share of benefits.

A strategic approach to the conservation of the stone roads of Chios would therefore entail systematic mapping, typological documentation, material analysis and participatory governance with the involvement of local communities. Integrating these paths into spatial planning tools and sustainable tourism strategies could enhance both cultural continuity and regional development. This orientation is consistent with recent heritage-management research arguing that cultural heritage should be approached not only as individual monuments or buildings, but as holistic cultural landscapes requiring integrated management, visitor management, monitoring, and governance coordination (Urošević et al., 2026). Ultimately, the recognition of stone roads as integral components of a living cultural landscape shifts the analytical focus from individual monuments to interconnected socio-ecological systems, reflecting broader developments in heritage scholarship that move beyond monument-centered classifications toward multidimensional and functionally integrated understandings of cultural heritage (Koufodontis & Karachalis, 2026).

The traditional stone-built roads of Chios are not merely infrastructural relics, but dynamic cultural artefacts embedded within agricultural, social, and environmental systems. Their study and conservation require interdisciplinary approaches that bridge heritage management, landscape studies, and sustainable tourism research. Through integrated planning and community engagement, these vernacular networks may serve as catalysts for resilient island development while safeguarding historical integrity.

4.1. Hypothesis Development

Building on the preceding review, the empirical part of the study examines three relationships among perceived cultural landscape value, sustainable tourism development, quality of life, and local governance/stakeholder participation. First, cultural landscapes are understood not only as physical or historical resources, but also as lived environments that support identity, place attachment, social cohesion, and everyday well-being. In the case of vernacular landscape infrastructures such as the stone-built roads of Chios, perceived cultural landscape value is therefore expected to be positively associated with perceived quality of life. Accordingly, the study proposes:

H1: Perceived cultural landscape value is positively associated with perceived quality of life.

Second, the reviewed literature shows that sustainable tourism development in cultural landscapes depends on planning capacity, stakeholder engagement, institutional coordination, and participatory governance. Because tourism can both valorize and threaten cultural landscapes, its sustainable development requires management arrangements that balance conservation, local use, visitor flows, and community benefits. Therefore, positive perceptions of sustainable tourism development are expected to be associated with positive evaluations of local governance and stakeholder participation. Accordingly, the study proposes:

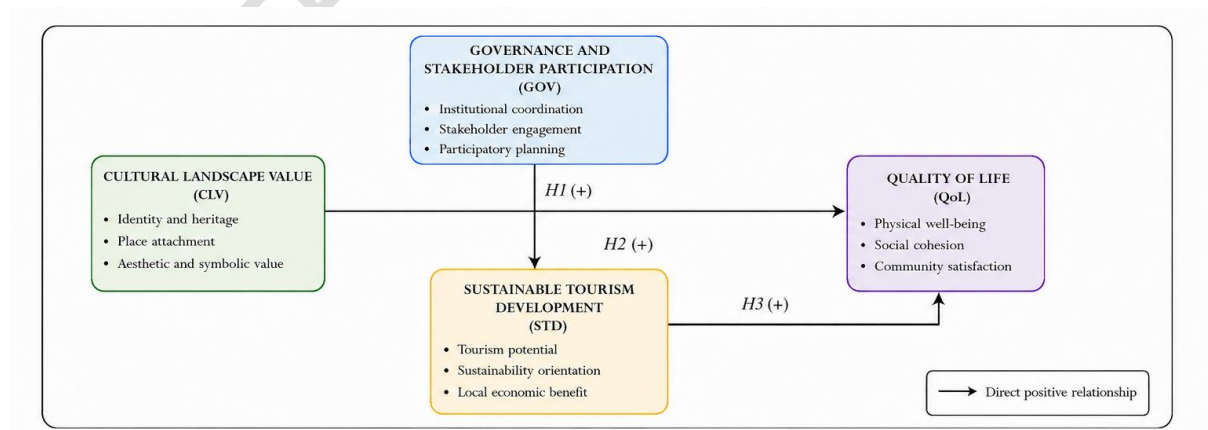
H2: Perceived sustainable tourism development is positively associated with local governance and stakeholder participation.

Third, tourism development is often expected to improve residents' quality of life through employment, income opportunities, local revitalization, and enhanced destination infrastructure. However, the literature also shows that these benefits are not automatic and may be weakened by uneven benefit distribution, commodification, environmental pressure, or weak governance. For this reason, the study tests whether perceived sustainable tourism development is positively associated with perceived quality of life in the specific context of the stone-built roads of Chios. Accordingly, the study proposes:

H3: Perceived sustainable tourism development is positively associated with perceived quality of life.

Figure 2 illustrates the conceptual framework of the study, which visually represents the potential connections between perceived cultural landscape value, development of sustainable tourism, governance and stakeholder participation, and perceived quality of life.

Figure 2: Conceptual model of the study.



(+): Indicates positive association
Source: Authors' elaboration.

5. Methodology

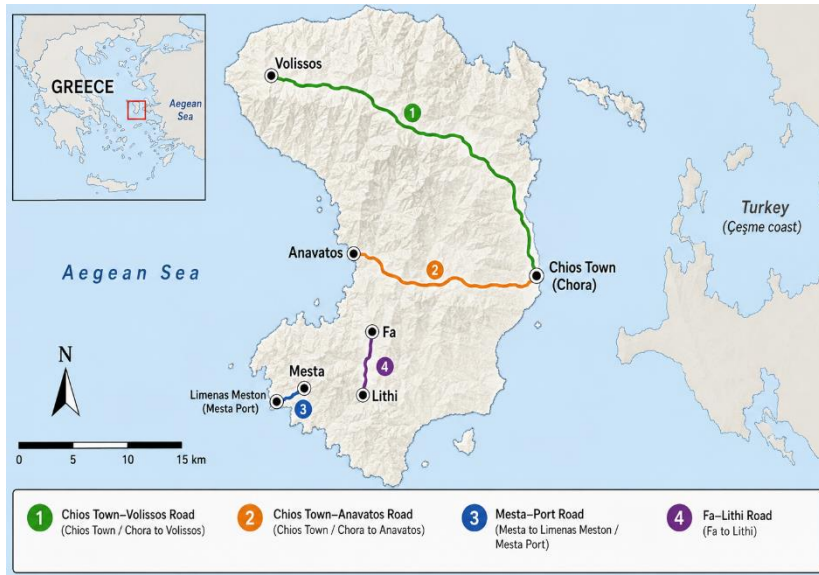
A field study was carried out in Chios, concentrating on four carefully chosen stone-built roads which, in different historical, spatial, and functional aspects, represent the island's cultural landscape (Figure 1). These roads have been tried out as they portray, among others things, historical mobility, settlement connectivity, agricultural circulation, and heritage-tourism potential. The main features of the chosen roads have been summarized in Table1.

Table 1. Selected stone-built roads included in the study (*)

Selected stone-built road	Area	Historical and functional relevance
Chios Town–Volissos Road	Northern Chios	Historical mobility corridor connecting Chios Town with Volissos; associated with military movement, trade circulation, and agricultural transport.
Chios Town–Anavatos Road	Central-western Chios	Route associated with the medieval settlement of Anavatos, pilgrimage, local mobility, and adaptation to steep terrain through stone-built path engineering.
Mesta–Port Road	Southern Mastichochoria	Traditional route linked to the movement of mastic and other goods between the fortified village of Mesta and its port.
Fa–Lithi Road	Central-southwestern Chios	Nineteenth-century stone-paved route connecting agricultural communities and reflecting post-1822 rural reconstruction and territorial reorganization.

* The historical and functional information summarized in Table 1 is based on secondary sources on the selected routes and settlements, including Georgallidis (2007), Kavvadia (2012), Thymianoudis (2002), and the Cultural Organization of the Prefecture of Chios (2004).

Figure 1: Location map of the selected stone-built roads in Chios, (Greece).



Source: Authors' elaboration.

This research employed an exploratory, quantitative, cross-sectional study method supported by a structured survey questionnaire. The questionnaire was developed with a reference to the latest, survey-based study on the perceptions of different stakeholders of sustainable tourism development, participation of stakeholders in tourism planning, and residents' perceptions of heritage-related tourism. For instance, Gao et al. (2024) advocate structured questionnaires for the study of stakeholder perceptions of sustainable tourism development, Al Mahrizi et al. (2024) highlight the importance of stakeholder participation in tourism planning and governance, and He et al. (2025) show a recent example of questionnaire-based research on residents' perceptions of heritage-related tourism development. During the consultation stage with practitioners, a list of the leading issues was formulated. These issues were raised during personal communication with the main actors of the tourism sector in Chios, including the municipality, tourist board, tourism businesses, and key players. In doing so, the research targeted the actors who are essentially in charge of the tourism sector in Chios and made the questionnaire more relevant with a focus on the issues that these key players are dealing with. A series of preliminary questions to them served as the basis for the content of the questionnaire. The practitioners confirmed that these questions are of concern to all the key

stakeholders in the area. Besides, the research team invited key players to participate in the pilot study three times. In one of them, the practitioner who participated asked several questions and raised a number of points that have improved the content of the questionnaire directly or indirectly. The questionnaire maybe found in Appendix A and can be used in similar studies so as to ensure transparency and replicability.

Data was collected from 30 local stakeholders in Chios, including residents and individuals with professional or institutional involvement in local development and tourism related activities. To clarify stakeholders' route-specific knowledge, respondents were asked which of the selected roads they knew and which they had walked at least once. As multiple responses were allowed, Table 2 reports familiarity and walking experience separately for each route.

Table 2. Stakeholder familiarity with and walking experience.

Selected route	Respondents familiar with the route	Respondents who had walked the route
Fa–Lithi	29	28
Chios–Volissos	23	19
Chios–Anavatos	23	13
Mesta–Port	7	2

Source: Authors' elaboration.

A non-probability purposive sampling approach was employed, which is appropriate for exploratory research focusing on informed actors with contextual knowledge of the study area and subject matter (Etikan et al., 2016). Even so, the relatively limited number of cases partially undermines the reliability, external validity and representativeness of the statistical findings. Hence, the results must be interpreted as a mirror to the viewpoints of the participating stakeholders, i.e. here, the pilot and exploratory evidence could be very indicative whereas the population-level conclusions would still require further validation.

The internal consistency of the scales was assessed using Cronbach's alpha. The main purpose

of reporting these reliability estimates is to present a first insight into internal consistency. However, the small number of participants is a limitation that requires one to be careful in interpreting the reliability coefficients and certainly do not consider them as conclusive psychometric validation of the scales. The Cultural Landscape Perception scale demonstrated high reliability ($\alpha = 0.876$), as did the Quality of Life scale ($\alpha = 0.812$). The Local Governance and Participation scale showed acceptable reliability ($\alpha = 0.711$). By contrast, the Sustainable Tourism Development scale exhibited relatively low internal consistency ($\alpha = 0.484$), indicating a heterogeneous or potentially multidimensional construct. Consequently, results related to this index should be interpreted with caution (Nunnally & Bernstein, 1994).

Because the study was pilot in nature, the sample size of the stakeholders was small, the data were ordinal, and non-parametric statistical methods were used. Composite indices were described statistically, and relationships between variables were analyzed with Spearman's correlation coefficient. The purpose of the correlation analysis was to detect potential patterns of associations among variables, but it was not intended at all to establish causal relationships or to confirm hypotheses that can be generalized.

6. Findings

The demographic characteristics of the respondents reveal that 61.1% were male and 38.9% were female. Regarding age distribution, most participants were between 36 and 45 years old (44.4%), followed by those aged 56 years and above (38.9%). The 46–55 age group accounted for 16.7% of the sample. This distribution indicates suggests that most respondents belong to mature and professionally active age categories.

In terms of educational attainment, 55.6% of respondents held a tertiary education degree, while 29.8% possessed a postgraduate qualification. Participants with secondary education represented 14.6% of the sample. Overall, the educational level of the respondents can be

considered relatively high.

When asked about formal education in tourism, 36.4% reported having received tourism-related training, whereas 63.6% indicated no formal education in the field. However, 54.5% of respondents stated that they are professionally engaged in tourism activities, while 45.5% reported no direct involvement. These findings suggest that professional engagement in tourism exceeds formal academic specialization in the sector.

Regarding institutional affiliation, the largest proportion of respondents (44.8%) belonged to professional tourism associations, federations, or unions. Cultural associations accounted for 28% of the sample, Social Cooperative Enterprises represented 16.8%, and public tourism bodies accounted for 10.4%. This distribution reflects a diverse stakeholder representation, with strong participation from organized tourism actors alongside cultural and cooperative organizations.

Descriptive analysis revealed a very strong recognition of the stone-built roads as a cultural landscape ($M = 4.39$, $SD = 0.42$), as well as highly positive perceptions regarding their contribution to quality of life ($M = 4.08$, $SD = 0.43$). In contrast, respondents expressed more moderate and ambivalent attitudes toward sustainable tourism development ($M = 3.05$, $SD = 0.44$) and toward local governance and participation ($M = 2.99$, $SD = 0.59$).

Three exploratory hypotheses were examined to identify indicative relationships between the core constructs of the study:

Hypothesis 1 (H1): proposed that perceived cultural landscape value is positively associated with perceived quality of life. The Spearman correlation analysis revealed a statistically significant and moderately strong positive association between these two variables ($\rho = 0.49$, $p = 0.006$). Therefore, H1 receives exploratory support within the present sample. This result suggests that the stronger the recognition of the stone-built roads as a valuable cultural landscape, the more positively respondents evaluate their contribution to broader dimensions

of everyday well-being, social identity, and place attachment (Kim et al., 2013; Uysal & Sirgy, 2023).

Hypothesis 2 (H2): proposed that perceived sustainable tourism development is positively associated with local governance and stakeholder participation. The results confirmed a statistically significant positive relationship between these variables ($\rho = 0.43$, $p = 0.018$). Consequently, H2 also receives exploratory support within the present sample. This finding may suggest that, in the eyes of local stakeholders, the prospects of tourism development are closely linked to issues of institutional coordination, management capacity, and participatory governance rather than being viewed merely as a technical or economic matter (Bramwell & Lane, 2011; Nunkoo & Ramkissoon, 2011).

Hypothesis 3 (H3): proposed that perceived sustainable tourism development is positively associated with perceived quality of life. However, the analysis did not reveal a statistically significant relationship between these two variables ($\rho = 0.18$, $p = 0.341$). As a result, H3 is not supported by the exploratory evidence of the present sample. This outcome implies that local stakeholders do not perceive tourism development as automatically or necessarily translating into improvements in quality of life (Andereck et al., 2005; Sharpley, 2014). Instead, any potential social benefits appear to be considered conditional upon the existence of appropriate governance frameworks, impact management mechanisms, and fair distribution of benefits.

Overall, the empirical data support the idea that the stone-built roads as a cultural landscape have two different types of value: the social and symbolic value which is inherent, and the instrumental value which is used as a tourism resource. Because of the exploratory nature and the small-sized sample, this difference should be seen as a lead to the pattern needing more research rather than a final conclusion. (Hall, 2011).

7. Discussion

These findings suggest that cultural landscapes may function primarily as lived social infrastructures supporting identity and well-being rather than as tourism resources. Nevertheless, one should treat this interpretation cautiously as it derives from a small purposive sample and an exploratory correlation analysis. Thus, the results might be better understood as pointing to possible patterns in stakeholder perceptions, rather than as identifying generalizable relationships. Their close connection with quality of life highlights the importance of symbolic, social, and experiential dimensions of heritage within lived cultural landscapes (Ingold, 2000; Plieninger & Bieling, 2012).

Moreover, the absence of a statistically significant direct association between sustainable tourism development and quality of life in this sample may suggest that local stakeholders do not necessarily perceive tourism as automatically generating social benefits. (Andereck et al., 2005; Kim et al., 2013). They view local governance as a necessary condition for socially sustainable and locally supported outcomes, which explains the strong association identified between tourism development and governance structures, participation, and institutional coordination (Bramwell & Lane, 2011; Nunkoo & Ramkissoon, 2011).

This interpretation aligns with research emphasizing governance capacity, stakeholder participation, and social processes as central determinants of successful heritage-based tourism development rather than purely economic or promotional strategies (Hall, 2011).

8. Theoretical and Practical Implications

Theoretically speaking the results might be taken to indicate, if not wholly at least to some extent, that cultural landscapes can create and produce perceived social value even in the absence of their tourism usage. So, through the notion that cultural landscape perception leads to a better quality of life, a case can be made that vernacular landscape infrastructures have the

potential to foster place attachment, identity and even everyday well-being, at least on the part of the stakeholders involved. This line of reasoning is obviously based on the fact that we also observed some experimental evidence for H1 where cultural landscape value perception was positively correlated with quality of life perception.

The findings show that the stone-built roads of Chios are primarily understood as elements of local identity and everyday lived environments rather than as economic tourism assets, supporting conceptualizations of cultural landscapes as dynamic socio-ecological systems shaped through continuous human–environment interaction (Plieninger & Bieling, 2012; Terkenli, 2021).

The findings also provide some tentative clues for tourism impact studies. The lack of a statistically significant relationship between the perceived sustainable tourism development and perceived quality of life of the current sampling implies that the benefits, which are tourism-related, should not be taken for granted that they will lead to local well-being improvements. However, the positive correlation of sustainable tourism development and governance/stakeholder participation signals that governance capacity might be one of the main factors that determine how tourism potential is perceived. This is consistent with the exploratory finding for H2 and H3. H2 was given exploratory support and showed a positive relationship between sustainable tourism development and governance/stakeholder participation. On the other hand, H3 was not supported, as sustainable tourism development did not have a significant association with perceived quality of life. Thus, the paper does not confirm that tourism development is a direct means to advance quality of life; rather, it posits that governance and participation could be key elements in the evaluation of tourism-related opportunities by the local stakeholders.

The study also contributes to heritage scholarship by reframing vernacular infrastructure as interconnected cultural systems embedded within social practices and territorial organization

rather than isolated historical remnants, aligning with multidimensional approaches that move beyond monument-centered understandings of heritage (Koufodontis & Karachalis, 2026).

The results may practically imply that decision-makers and the managers of the destination may think of enhancing their governance capabilities and encouraging the participation of stakeholders ahead of implementing tourism development plans connected with the stone-built roads of Chios.

Since tourism development is not perceived as automatically improving quality of life, inclusive decision-making processes and institutional coordination become essential conditions for socially sustainable outcomes (Hall, 2011).

Secondly, the findings highlight the benefit of planning methods that consider vernacular infrastructures like stone-built roads, not simply as local attractions, but as parts of broader territorial systems.

. Embedding these heritage elements within spatial planning and cultural route networks can enhance both conservation effectiveness and local development potential (Timothy & Boyd, 2003).

Thirdly, a careful reading of the results, shows that it might be best if tourism projects at culturally sensitive sites, like the stone-built roads of Chios, focus on small-scale, low-impact activities that will not only match the local landscape character but also meet community expectations.

Forms of slow and experiential tourism, such as walking and heritage interpretation activities, are more likely to support long-term destination sustainability while preserving landscape integrity (Heslinga et al., 2020).

Lastly, the exploratory findings suggest that participatory governance that includes local associations, cultural organizations, and community stakeholders may enhance stewardship and social acceptance of heritage-based development. Nevertheless, this practical implication

should be considered a context-specific recommendation that calls for testing in larger and more diverse samples.

Collaborative management approaches help balance conservation objectives with economic opportunities by fostering shared responsibility for landscape resources (Reed, 2008).

9. Conclusion

This paper provides exploratory evidence that cultural landscapes, such as the stone-built roads of Chios, are strongly valued by the participating stakeholders for their social, symbolic, and identity-related functions. Rather than being understood mainly as tourism resources, these vernacular infrastructures operate as lived components of everyday environments, reinforcing place attachment and collective meaning within the cultural landscape (Ingold, 2000; Plieninger & Bieling, 2012). The findings therefore support the view that heritage landscapes generate social value independently of their economic utilization and that their contribution to well-being is closely linked to experiential and cultural dimensions of place. However, the exploratory results also imply that sustainable tourism development might not have a direct impact on the concept of perceived quality of life that was obtained from the current sample. In other words, it seems that tourism-related social benefits also depend on governance capacity, institutional coordination, and participatory decision-making processes.

Instead, tourism outcomes appear to depend strongly on governance capacity, institutional coordination, and participatory decision-making processes. This reinforces existing research emphasizing that successful heritage-based tourism relies less on promotional or growth-oriented strategies and more on inclusive governance arrangements capable of balancing conservation, community interests, and development objectives (Bramwell & Lane, 2011; Hall, 2011; Nunkoo & Ramkissoon, 2011).

The study further suggests that effective management of cultural landscapes requires integrated planning approaches that recognize heritage assets as interconnected socio-ecological systems rather than isolated monuments. Within such frameworks, tourism development is more likely to be socially accepted when it remains context-sensitive, small-scale, and aligned with local landscape character and community priorities. These findings align with broader debates in sustainable tourism research highlighting the importance of adaptive governance and locally grounded management strategies in maintaining long-term destination resilience and social sustainability (Heslinga et al., 2020; Terkenli, 2021).

In general, examining the stone-built roads of Chios can be considered as an initial indication that vernacular landscape infrastructures, when combined with participatory governance and cultural landscape management, could be a basis for resilient regional development. Nevertheless, this result is just a perception of a very limited purposive sample and a larger empirical study is needed.

Recognizing and managing such heritage elements as living systems offers a pathway toward reconciling conservation goals with community well-being and sustainable tourism development.

10. Limitations and Future Research

The study has several limitations. The first issue is that a small, non-probability purposive sample limits the statistical generalization and the strength of the inferential claims. These findings represent perceptions of knowledgeable local stakeholders instead of the entire population of Chios. Secondly, despite the fact that the reliability measures and correlation coefficients were computed, one should interpret these statistical results with caution because of the small sample size and the exploratory character of the study. Thirdly, a cross-sectional

approach measures perceptions only at one point in time and does not take into consideration the possibility that they might change as the governance or tourism scenarios develop.

(Etikan et al., 2016). In addition, cross-sectional design captures perceptions at a single point in time and does not account for possible changes as governance or tourism conditions evolve.

Although the questionnaire was inspired from earlier survey-based studies and where it was feasible, internal consistency was evaluated, factor analysis was not performed as the sample size was small in comparison to the number of items. Next studies should check the validity of the questionnaire with bigger samples and present factor loadings or confirmatory measurement models. Future research should employ larger and more diverse samples, longitudinal designs, and mixed-method approaches to better examine how cultural landscape valuation, governance, and quality of life interact over time. Further refinement of measurement scales, particularly for sustainable tourism development, and the inclusion of visitors' perspectives would also strengthen understanding of cultural landscape dynamics.

References

- Al Mahrizi, A. S. K., Gray, T., Gregory-Smith, D., & Stead, S. M. (2024). The role of stakeholder participation in Oman's tourism planning system. *Tourism Planning & Development*, 21(6), 881–916. <https://doi.org/10.1080/21568316.2024.2379904>
- Andereck, K. L., & Nyaupane, G. P. (2011). Exploring the nature of tourism and quality of life perceptions among residents. *Journal of Travel Research*, 50(3), 248-260. <https://doi.org/10.1177/0047287510362918>
- Andereck, K. L., Valentine, K. M., Knopf, R. C., & Vogt, C. A. (2005). Residents' perceptions of community tourism impacts. *Annals of Tourism Research*, 32(4), 1056-1076. <https://doi.org/10.1016/j.annals.2005.03.001>
- Angelis-Dimakis, D., & Doumi, M. (2024). The role of the landscape-tourism relation in the

transformation of the rural space of Greece and Spain into tourist destinations from the 1950 to date: A comparative analysis. In 1st INTOCUS International Conference: Tourism and Cultural Heritage: Resilience, Sustainability and Transformation. Proceedings: 8th and 9th of March 2024 (pp. 179–185). International Master's programme in Sustainable Tourism Development: Heritage, Environment, Society.

Angelis-Dimakis, D., Begeja, F., Doumi, M., Spatharidou, D., Bithas, G., & Angelis, V. (2024). The delicate landscape-tourism balance: The case of Aoos-Vjosa. In 1st INTOCUS International Conference: Tourism and Cultural Heritage: Resilience, Sustainability and Transformation. Proceedings: 8th and 9th of March 2024 (pp. 186–194). International Master's programme in Sustainable Tourism Development: Heritage, Environment, Society.

Antrop, M. (2005). Why landscapes of the past are important for the future. *Landscape and Urban Planning*, 70(1-2), 21-34. <https://doi.org/10.1016/j.landurbplan.2003.10.002>

Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners*, 35(4), 216-224. <https://doi.org/10.1080/01944366908977225>

Ashworth, G. J., & Tunbridge, J. E. (2000). *The tourist-historic city*. Routledge.

Baldacchino, G. (2006). Managing the hinterland beyond: Two ideal-type strategies of economic development for small island territories. *Asia Pacific Viewpoint*, 47(1), 45-60. <https://doi.org/10.1111/j.1467-8373.2006.00295.x>

Beriatos, E. (2012). Greek landscape: Problems, policies, perspectives. In Papayannis, T. & Howard, P. (eds.) *Reclaiming the Greek Landscape*, (pp. 123–132). Athens: Med-INA.

Berkes, F., Colding, J., & Folke, C. (Eds.). (2008). *Navigating social-ecological systems: building resilience for complexity and change*. Cambridge University Press.

- Birkeland, I. (2008). Cultural sustainability: Industrialism, placelessness and the re-animation of place, *Ethics, Place and Environment* 11, 283–297.
<https://doi.org/10.1080/13668790802559692>
- Boone Jr, H. N., & Boone, D. A. (2012). Analyzing Likert data. *The Journal of extension*, 50(2), 48. <https://doi.org/10.34068/joe.50.02.48>
- Bramwell, B., & Lane, B. (2011). Critical research on the governance of tourism and sustainability. *Journal of Sustainable Tourism*, 19(4-5), 411-421.
<https://doi.org/10.1080/09669582.2011.580586>
- Briguglio, L. (1995). Small island developing states and their economic vulnerabilities. *World Development*, 23(9), 1615-1632. [https://doi.org/10.1016/0305-750X\(95\)00065-K](https://doi.org/10.1016/0305-750X(95)00065-K)
- Butler, R. W. (1980). The concept of a tourist area cycle of evolution: Implications for management of resources. *Canadian Geographies*, 24(1), 5–12.
<https://doi.org/10.1111/j.1541-0064.1980.tb00970.x>
- Chatzi, E. (2025). The impact of built-up area dispersion on the cultural heritage of the Southern Aegean islands. *ISPRS International Journal of Geo-Information*, 14(3), 97.
<https://doi.org/10.3390/ijgi14030097>
- Cohen, E. (1988). Authenticity and commoditization in tourism. *Annals of tourism research*, 15(3), 371-386.
- Cultural Organization of the Prefecture of Chios, (2004). *Traditional paths of Chios*.
- Damianakos, S. (2002). *From peasant to farmer: Greek rural society in the face of globalization*. Athens, Greece: Exandas.
- Diener, E., Oishi, S., & Lucas, R. E. (2009). 187 subjective well-being: The science of happiness and life satisfaction. *The Oxford handbook of positive psychology*, 1. Oxford University Press
- Dimou, V., Tsagkalidou, E., Vasiliadis, C., & Chrysostomou, G. (2026). A Proposal for a

- Multimodal Tourist Route. In *The International Conference on Strategic Innovative Marketing and Tourism* (pp. 65-72). Cham: Springer Nature Switzerland.
https://doi.org/10.1007/978-3-032-12968-0_8
- Dredge, D., & Jenkins, J. M. (2007). *Tourism planning and policy*. John Wiley & Sons.
- Economou, A., & Zikidis, N. (2014). Traditional daily used paths as cultural trails: The case of Ikaria in Greece. *Journal of Sustainable Development, Culture, Traditions*, 1a(2a), pp. 29–49. <https://doi.org/10.26341/issn.2241-4002-2014-1a-3>
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1–4.
<https://doi.org/10.11648/j.ajtas.20160501.11>
- Field, A. (2018). *Discovering statistics using IBM SPSS statistics*. Sage.
- Folke, C. (2006). Resilience: The emergence of a perspective for social–ecological systems analyses. *Global environmental change*, 16(3), 253-267.
- Fowler, P.J. (2003). *World Heritage Cultural Landscapes 1992 - 2002*. UNESCO World Heritage Centre. Paris, France.
- Gao, J., Sakcharoen, T., Suwanteep, K., & Niyommaneerat, W. (2024). Stakeholder perceptions of sustainable tourism development: A case study in Haikou, China. *Sustainability*, 16(16), 6742. <https://doi.org/10.3390/su16166742>
- Georgallidis, P. (2007). *The castle of Volissos and the fortification structures of Chios*. Municipality of Omiroupolis.
- Gkoltsiou, A., Athanasiadou, E., & Paraskevopoulou, A. T. (2021). Agricultural heritage landscapes of Greece: Three case studies and strategic steps towards their acknowledgement, conservation and management. *Sustainability*, 13(11), 5955.
<https://doi.org/10.3390/su13115955>

- Gkoltsiou, A. (2015). Greek and tourist concepts of landscape. Bruns, D., Kühne, O., Schönwald, A. & Theile, S. (eds.) *Landscape Culture – Culturing Landscapes: The Differentiated Construction of Landscapes*, 161–172. Wiesbaden: Springer.
- Gkoltsiou, A. (2025). Landscape Character Assessment for Sustainable Rural Development in Border Insular Areas: A Case Study of Ano Mirabello, Crete. *Agriculture*, 15(10), 1020. <https://doi.org/10.3390/agriculture15101020>
- Gössling, S., Peeters, P., Hall, C. M., Ceron, J. P., Dubois, G., Lehmann, L. V., & Scott, D. (2012). Tourism and water use: Supply, demand, and security. An international review. *Tourism Management*, 33(1), 1-15. <https://doi.org/10.1016/j.tourman.2011.03.015>
- Hall, C. M. (2013). A typology of governance and its implications for tourism policy analysis. *In Tourism governance*, 27-47. Routledge.
- Hall, C. M., Prayag, G., & Amore, A. (2017). *Tourism and resilience: Individual, organisational and destination perspectives* Vol. 5. Channel View Publications.
- He, Q., Tan, G., & Zhang, W. (2025). Residents' perceptions and behaviors regarding the policy of integrating intangible cultural heritages into the tourism industry: Evidence from Dali, China. *Sustainability*, 17(2), 795. <https://doi.org/10.3390/su17020795>
- Heslinga, J.H.; Groote, P.D.; Vanclay, F. (2018). Understanding the historical institutional context by using content analysis of local policy and planning documents: Assessing the interactions between tourism and landscape on the Island of Terschelling in the Wadden Sea Region. *Tourism Management*, 66, 180–190. <https://doi.org/10.1016/j.tourman.2017.12.004>
- Holling, C. S. (1973). Resilience and stability of ecological systems. *Annual Review of Ecology and Systematics*, 4, 1-23. <https://doi.org/10.1017/9781009177856.038>
- Hunter, C. (1997). Sustainable tourism as an adaptive paradigm. *Annals of Tourism Research*, 24(4), 850-867. [https://doi.org/10.1016/S0160-7383\(97\)00036-4](https://doi.org/10.1016/S0160-7383(97)00036-4)

- Ingold, T. (2000). *The perception of the environment: Essays on livelihood, dwelling and skill*. Routledge.
- James, P.E & Martin, G. (1981). *All Possible Worlds: A History of Geographical Ideas*. John Wiley & Sons. New York.
- Jia, X., Xu, Y., Zhao, B., Li, H., Li, L., & Zhang, J. (2025). Sustainable tourism at nature-based cultural heritage sites: visitor density and its influencing factors. *Heritage Science*, 13(1), 175. <https://doi.org/10.1038/s40494-025-01761-4>
- Jones, M. (2003). The Concept of Cultural Landscape: Discourse and Narratives. In: Palang, H., Fry, G. (Eds.) *Landscape Interfaces. Landscape series*, vol 1. Springer, Dordrecht.
- Jones, M. & Stenseke, M. (2011). *The European Landscape Convention: Challenges of Participation*. Dordrecht: Springer.
- Kavvadia, A. (2012). The medieval settlement of Anavatos in light of recent archaeological research. In *Proceedings of the international conference: Fortification architecture in the Aegean and the medieval settlement of Anavatos*, 239–248.
- Kim, K., Uysal, M., & Sirgy, M. J. (2013). How does tourism in a community impact the quality of life of community residents?. *Tourism management*, 36, 527-540.
- Kovani, E.T. (2002). *Λιμνών αποξήρανσεις: μελέτη αειφορίας και πολιτιστικής ιστορίας*. Athens: National Center of Social Research – EKKE.
- Koufodontis, N. I., & Karachalis, N. (2026). Towards a Multidimensional Taxonomy of Intangible Cultural Heritage: Integrating National Frameworks, Functional Classifications, and Digital Heritage. *Heritage & Society*, 1-21. <https://doi.org/10.1080/2159032X.2026.2629723>
- Legg, K.R. & Roberts, J.M. (1997). *Modern Greece: A Civilization on the Periphery*. Boulder, CO: Westview Press.

- Louloudis, L. (1992). Agricultural modernization and transformation of the rural landscape. *Topos: Review of Urban and Regional Studies*, 4, 135–155.
- Louloudis, L., Beopoulos, N., & Troumbis, A. (2005). *The rural landscape: A palimpsest of centuries of agricultural labour*. Athens, Greece: Merkouri.
- MacCannell, D. (2013). *The tourist: A new theory of the leisure class*. Univ of California Press.
- Manolidis, K. (2009). The countryside and the traumas of post-war Greece. In K. Manolidis & T. Kanarelis (Eds.), *Claiming the countryside* 63–82. Athens, Greece: Indiktos.
- Milano, C., Cheer, J. M., & Novelli, M. (Eds.). (2019). *Overtourism: Excesses, discontents and measures in travel and tourism*. CABI.
- Mitchell, N., Rössler, M., & Tricaud, P.-M. (2009). *World Heritage Cultural Landscapes: A Handbook for Conservation and Management*. Paris: UNESCO World Heritage Centre. <https://whc.unesco.org/en/culturallandscape/>
- Monioudi-Gavala, T. (2019). The old paths of central and northern Chios as a unified hiking route: Highlighting architectural heritage. In *Proceedings of the interdisciplinary conference: Vision, planning and policies for the integrated development of mountainous and remote areas*. National Technical University of Athens & Metsovo Center for Interdisciplinary Research.
- Moudopoulos, F. (2023). Pathways to know and sidetracks to forget: Walking and the montane cultural landscape of Zagori (Northwestern Greece). *Journal of Eastern Mediterranean Archaeology & Heritage Studies*, 11(1). <https://doi.org/10.5325/jeasmedarcherstu.11.1.0001>
- Mrđa, A., & Bojanić Obad Šćitaroci, B. (2015). Relationship between tourism and cultural heritage in the spatial planning of tourist destinations on Croatian islands. *Prostorne i razvojne mogućnosti kulturnog naslijeđa: Zbornik radova (Cultural Heritage—Possibilities for Spatial and Economic Development: Proceedings)*, 472-477.

- Mrđa, A., Bojanić, B., & Šćitaroci, B. B. O. (2016). Relationship between tourism and cultural landscape—a new sustainable development model. *In Proceedings of Tcl 2016 Conference Infota*, (Vol. 2016, pp. 376-384).
- Nunnally, J., & Bernstein, I. (1994). *Psychometric Theory* 3rd edition. MacGraw-Hill, New York.
- Nunkoo, R., & Ramkissoon, H. (2011). Developing a community support model for tourism. *Annals of tourism research*, 38(3), 964-988.
- Oikonomopoulou, E., Delegou, E. T., Sayas, J., & Moropoulou, A. (2017). An innovative approach to the protection of cultural heritage: The case of cultural routes in Chios Island, Greece. *Journal of Archaeological Science: Reports*, 14, 742–757.
<https://doi.org/10.1016/j.jasrep.2016.09.006>
- Palacio, R. D., & Goli, S. (2025). Bridging the nature-culture divide: A biocultural reclassification of the World Heritage Sites. *Ecology and Society*, 30(1), Article 31.
<https://doi.org/10.5751/ES-15827-300131>
- Pavlis, E., & Terkenli, T. (2017). Landscape values and the question of cultural sustainability: Exploring an uncomfortable relationship in the case of Greece. *Norsk Geografisk Tidsskrift - Norwegian Journal of Geography*, 71(3), 168–188.
<https://doi.org/10.1080/00291951.2017.1345977>
- Pettifer, J. (1993). *The Greeks: The Land and People Since the War*. London: Penguin.
- Plieninger, T., & Bieling, C. (Eds.). (2012). *Resilience and the Cultural Landscape: Understanding and Managing Change in Human-Shaped Environments*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9781139107778>
- Reed, M. S. (2008). Stakeholder participation for environmental management: a literature review. *Biological Conservation*, 141(10), 2417-2431.
<https://doi.org/10.1016/j.biocon.2008.07.014>

- Ritchie, J. B., & Crouch, G. I. (2003). *The competitive destination: A sustainable tourism perspective*. CABI.
- Sauer, C. (1925). The Morphology of Landscape. *University of California Publications in Geography*, 22, 19-53. University of California Press.
- Schaal-Lagodzinski, T., König, B., Riechers, M., Heitepriem, N., & Leventon, J. (2024). Exploring cultural landscape narratives to understand challenges for collaboration and their implications for governance. *Ecosystems and People*, 20(1), 2320886. <https://doi.org/10.1080/26395916.2024.2320886>
- Sharpley, R. (2014). Host perceptions of tourism: A review of the research. *Tourism management*, 42, 37-49.
- Smith, M. K. (2015). *Issues in cultural tourism studies*. Routledge.
- Soini, K. & Birkeland, I. (2014). Exploring the scientific discourse on cultural sustainability. *Geoforum*, 51, 213–223. <https://doi.org/10.1016/j.geoforum.2013.12.001>
- Tang, Y., Xie, J., Luo, S., & Furuya, K. (2026). Scenario techniques for cultural landscapes: A systematic review and framework. *Landscape Research*. <https://doi.org/10.1080/01426397.2025.2516016>
- Terkenli, T. S. (2001). Towards a theory of the landscape: The Aegean landscape as a cultural image. *Landscape and Urban Planning* 57, 197–208.
- Terkenli, T. S. (2002). Landscapes of tourism: Towards a global cultural economy of space? *Tourism Geographies* 4, 227–254.
- Terkenli, T. S. (2006). Landscapes of a new cultural economy of space: An introduction. Terkenli, S.T. & d’Hauteserre, A.-M. (eds.) *Landscapes of a New Cultural economy of Space*, 1–18. Dordrecht: Springer.
- Terkenli, T. S. (2010). The human–landscape relationship in contemporary Greece: A cultural approach In T. Papayannis & A. Sorotou (Eds.), *In search of the Greek landscape*, pp.

37–52, Athens, Greece: Med-INA.

- Terkenli, T.S. (2011). From landscape to tourism and back: The emergence of a Greek landscape conscience. In Roca, Z., Claval, P. & Agnew, J. (Eds.) *Landscapes, Identities and Development*, 227–242. Farnham: Ashgate.
- Terkenli, T. S. (2021). Landscape and tourism: European perspectives. In C. Butler & W. Sun-
tikul (Eds.), *Tourism and the Anthropocene*. Routledge.
- Terkenli, T. S. (2025). Landscapes of tourism in the era of a new cultural economy of space: A reformulated analytical framework. *Annals of the American Association of Geographers*, 115(3), 725–741. <https://doi.org/10.1080/24694452.2024.2447508>
- Terkenli, T.S. & Pavlis, E. (2012). Landscape conscience: Awareness raising, training and education. In Papayannis, T. & Howard, P. (Eds.) *Reclaiming the Greek Landscape* (pp. 245–254). Athens: Med-INA.
- Theodora, Y. (2020). Cultural heritage as a means for local development in Mediterranean historic cities—The need for an urban policy. *Heritage*, 3(2), 152–175. <https://doi.org/10.3390/heritage3020010>
- Thymianoudis, N. (2002). *The mastichochoria of Chios and the Genoese settlement organization*. Chios Research Center.
- Timothy, D. J., & Boyd, S. W. (2003). *Heritage Tourism*. Prentice Hall.
- UNESCO (2012). *Operational Guidelines for the Implementation of the World Heritage Convention*. Paris: UNESCO World Heritage Centre. <https://whc.unesco.org/en/guidelines/>
- UNWTO (2013). *Sustainable tourism for development guidebook*. World Tourism Organization, European Commission, Madrid.
- Urošević, N., Afrić Rakitovac, K., & Legović, M. (2026). Heritage management and sustainable tourism: A systematic literature review. *Encyclopedia*, 6(4), 78. <https://doi.org/10.3390/encyclopedia6040078>

- Urry, J., & Larsen, J. (2011). *The Tourist Gaze 3.0*. Sage.
- Uysal, M., & Sirgy, M. J. (Eds.) (2023). *Handbook of Tourism and Quality of life Research II*. Springer: Cham, Switzerland.
- Vuksanović-Macura, Z., Ljubenov, G., & Gajić, T. (2025). Preservation of vernacular cultural landscape and sustainable tourism: A case study from the Western Carpatho-Balkan Region. *Heritage*, 8(12), 493. <https://doi.org/10.3390/heritage8120493>
- Wang, N. (1999). Rethinking authenticity in tourism experience. *Annals of Tourism Research*, 26(2), 349–370.
- Wang, S., Liping, Y., & Arif, M. (2025). Evolutionary analysis of ecological-production-living space-carrying capacity in tourism-centric traditional villages in Guangxi, China. *Journal of Environmental Management*, 375, 124182. <https://doi.org/10.1016/j.jenvman.2025.124182>
- Woods, M. (2004). *Rural Geography: Processes, Responses and Experiences in Rural Restructuring*. London: Sage.

Appendix A. Questionnaire

	Question	Response format
Q1	To what extent are you familiar with the stone-built roads of Chios?	Multiple response
Q2	Which of the following stone-built roads of Chios are you familiar with?	
Q3	For how long have you been familiar with these stone-built roads?	
Q4	To what extent are you familiar with the historical significance of these roads?	
Q5	Which of the following stone-built roads have you walked at least once?	
Q6.1	The stone-built roads are harmoniously integrated into the natural landscape of the area.	5-point Likert scale
Q6.2	The stone-built roads are characterized by distinctive architecture.	
Q6.3	The rich flora, such as wild tulips and several orchid species, in the area of the stone-built roads is of exceptional beauty.	

	Question	Response format
Q6.4	The stone-built roads highlight and contribute to the tourism development of the island.	
Q6.5	Tourists visiting the stone-built roads contribute to the diversification of the local economy.	
Q6.6	Tourism development in the area would promote positive cultural ethics among all parties involved in tourism.	
Q6.7	The stone-built roads are located near settlements of historical significance.	
Q6.8	The stone-built roads constitute an example of historical heritage.	
Q6.9	The stone-built roads constitute a rare example of integrating such historical heritage into hiking routes.	
Q6.10	The stone-built roads constitute a tourism resource for new forms of selective tourism.	5-point Likert scale
Q7.1	Alteration of the stone-built roads due to tourism activity.	
Q7.2	Indifference of the tourism industry toward the stone-built roads.	
Q7.3	Disruption of community quality of life due to tourists.	
Q7.4	Negative impacts on other sectors of the economy due to tourism development.	
Q7.5	Difficulty in maintaining rules for the use of the natural, built, and cultural environment.	
Q7.6	Difficulty in accessing the stone-built roads.	
Q7.7	Maintenance of the stone-built roads.	
Q7.8	Limited accessibility, which affects the attractiveness of the stone-built roads for tourists.	
Q7.9	Problems arising from the geographical location of the stone-built roads.	
Q7.10	Limited technological infrastructure in planning the promotion of the stone-built roads.	
Q8.1	Tourism development can promote tourists' familiarization with the stone-built roads.	
Q8.2	The development of the roads can generate significant economic benefits for the community.	
Q8.3	Promotion of sustainable tourism development in the area.	
Q8.4	Highlighting the cultural significance of the area.	
Q8.5	The stone-built roads and the rich natural and cultural environment can constitute an important hiking destination.	
Q8.6	The development of cultural tourism can support the economic development of the area.	
Q8.7	Creation of sustainable tourism packages based on the stone-built roads.	

	Question	Response format
Q8.8	Use of the stone-built roads for the creation of environmental programs and activities.	
Q8.9	Promotion of the historical significance of the area through the stone-built roads.	
Q8.10	Creation of educational programs that make use of the stone-built roads.	
Q9.1	Quality of life is degraded due to tourism.	
Q9.2	Tourism development of the stone-built roads may cause crowding in the community.	
Q9.3	Tourism is developing in an uncontrolled manner.	
Q9.4	Lack of coordination for the development of the stone-built roads.	
Q9.5	Abandonment of the stone-built roads results in poor-quality experiences for future visitors.	5-point Likert scale
Q9.6	Climate change may affect the lifespan of the stone-built roads.	
Q9.7	Destruction of the stone-built roads due to lack of protection measures.	
Q9.8	Increased tourism activity may affect the authenticity of the stone-built roads.	
Q9.9	Economic barriers may prevent proper maintenance of the roads.	
Q9.10	Natural disasters may affect the stone-built roads.	
Q10-Q13	Educational level, Gender, Age, Marital status.	Multiple choice
Q14	Have you received any form of education or training in tourism?	Yes/No
Q15	Are you involved in tourism-related activities in any way?	Yes/No
Q16	Which organization or body do you represent?	Multiple choice