Northumbria Research Link

STAKEHOLDER CAUSAL SCOPE ANALYSIS–CENTERED BIG DATA MANAGEMENT FOR SUSTAINABLE TOURISM

S. M. Riad Shams ⓘD
Northumbria University
Demetris Vrontis
Michael Christofi
University of Nicosia

Sustainability concerns in the tourism industry are underresearched, although both stakeholder relationship management and data analytics knowledge streams have implications to underpin sustainability research and practice. Scholars argue that we have limited knowledge of the potential for analyzing diverse stakeholder relationship management issues from different tourism-related socioeconomic and ecological settings to fully exploit stakeholders' contribution to tourism sustainability. Big data, as a research field, could offer varied cross-disciplinary implications for sustainable development. However, data analytics research is concerned with simplifying the overall management structure of data. In this context, at the intersection of these three research streams (tourism, stakeholder relationship management, and big data), this research note offers insights into how analyzing stakeholder causal scopes would be instrumental in simplifying tourism data management structure to support sustainability research and practice in the tourism industry.

KEYWORDS: *stakeholder relationship; big data; sustainable development; sustainability pillars; sustainable tourism*

INTRODUCTION

Key stakeholders in the tourism industry argue that sustainability issues of their industry are underresearched (Bramwell et al., 2017). However, both stakeholder relationship management (RM) and data analytics knowledge streams have implications to underpin sustainability research and practice (Boley et al., 2017; Vassakis et al., 2018; Waligo et al., 2013). Scholars also claim that we have limited knowledge of the potential for analyzing diverse stakeholder relationships and interactions, as well as the causes of and consequences from different

tourism-related socioeconomic and ecological settings to fully exploit stakeholders' contributions to sustainable tourism development (Ellis & Sheridan, 2014; McComb et al., 2017; Shams, 2016). Furthermore, big data, as a research field, has attracted the interest of researchers from different knowledge streams because of its cross-disciplinary scope and cross-functional implications for sustainable development in various industries (Vassakis et al., 2018). Nevertheless, big data researchers are concerned with simplifying the overall management structure of data (Bikakis et al., 2018; Couture, 2018). In this context, at the intersection of these three research streams (tourism, stakeholder RM, and big data), this research note offers insights into how analyzing stakeholder causal scopes (SCSs) would be instrumental in simplifying tourism data management structure to support sustainability research and practice in the tourism industry.

BACKGROUND

The former United Nations World Tourism Organization Secretary General, Taleb Rifai, described "the three pillars of sustainability—economic, social and environment—while raising awareness of the true dimensions of a sector which is often undervalued" (United Nations World Tourism Organization, 2015; cited in Bramwell et al., 2017, p. 4). However, scholarly research highlights that these three tourism sustainability pillars are undervalued in terms of research and management, especially in the tourism sector despite of their importance. For example, the residents of a place that is both an international and a local tourist destination are key stakeholders of this industry; however, "little research has examined residents' perceptions of sustainable tourism initiatives" (Boley et al., 2017, p. 66).

"Tourism-related businesses require a multitude of resources, in order to operate successfully and given these resources can be accrued from more than one source, bases of power become complex" (Hazra et al., 2017, p. 278). Based on stakeholders' shared power, risk, uncertainty, and dependency (Gummesson, 2002; Kurtz, 2009), the network of key stakeholders would be resources for tourism management. In tourism research, stakeholder networks could be analyzed from the relationship contexts (Del Chiappa & Presenza, 2013; McComb et al., 2017) of the associated stakeholders who have "an interest in the outcomes of the actions taken by others" (Tomsett & Shaw, 2015, p. 115)—for example, tourism firms. Stakeholder RM reinforces value co-creation, based on a network approach of relationships and interactions, where stakeholders collaborate to improve management efficiency in order to meet their mutually beneficial multifarious goals (Grönroos, 2012; Gummesson & Mele, 2010; Hsiao et al., 2015). Thus, analyzing stakeholder relationships and interactions within tourism networks becomes crucial to enrich research and management of the three undervalued tourism sustainability pillars.

Unfortunately, there is little critical consideration about the role and influence of stakeholders and their relationships in tourism strategy (Ellis & Sheridan,

2014). In terms of tourism destination management, researchers (Del Chiappa & Presenza, 2013; Shams, 2016; Strobl & Peters, 2013) have claimed that tourism destination management from a network perspective is not well-researched. Regarding analyzing market competition in the tourism industry, "there has been limited research that considers the perspective of stakeholders involved in developing competitiveness for a tourist destination" (Aqueveque & Bianchi, 2017, p. 447). McComb et al. (2017) stated that "stakeholder collaboration has been deemed critical for the success of sustainable tourism. . . . However, successful attempts to implement stakeholder collaboration (from this context) have been limited" (p. 286). As for tourism sustainability research, Waligo et al. (2013) said that "the lack of or ineffective stakeholder participation is a major obstacle to ST (sustainable tourism) realisation and there is little clarity as to how best to resolve this problem" (p. 342). The existing research of tourism management planning and infrastructure development does not sufficiently prioritize stakeholder relationships and interactions in the tourism network (Kristjánsdóttir et al., 2017).

More researchers are becoming interested in big data, because of its varied cross-disciplinary scope and cross-functional implications for sustainable development in different industries. Therefore, reinforcing big data research and its management in the tourism industry would be instrumental in supporting sustainability research and practice in this industry. However, scholars in big data research are still focusing on simplifying the overall management structure of data. For example,

- There is a lack of common terms in data management, which impedes users from different departments (e.g., marketing, HR, strategy) to gain value and insights from data as rapidly as possible, minimizing the role of the IT expert
- Big data analysis must encourage user comprehension, offering customization/individualization capabilities to different user-defined exploration scenarios (for the right data at the right time and from the right context) and preferences (Bikakis et al., 2018; Couture, 2018)

In this context, this research note aims to develop insights into how analyzing SCSs would help in analyzing tourism and hospitality data, based on common business terms that offer organization-specific customization to explore the right data from the right/particular context in sustainability research and practice in the tourism industry.

STAKEHOLDER CAUSAL SCOPE

"In practice, organizations need to continuously realign work . . . (with) stakeholder interests in order to reap the benefits from big data" (Günther et al., 2017, p. 191). Since an organization attempts to explore and analyze data about its stakeholders, developing a strategic data mining pattern, based on analyzing

the "cause and consequence of stakeholder relationships and interactions as a stakeholder causal scope (SCS)" (Shams, 2016, p. 141) would contribute to establishing noncomplex and customized data exploration methods from multiple data streams. For example, based on service encounters or other types of business encounters between an organization and its customers or suppliers, the organization generally collects data about its customers', suppliers', and other stakeholders' behaviors/perceptions. In such business encounters, focusing on different stakeholder RM constructs would be instrumental to collect/explore, store, and visualize a specific dataset, where the different RM constructs would be used to categorize different tourism data in order to abstract/conceptualize insights to undertake stakeholder-specific tourism management decisions. Agariya and Singh (2011) have presented a literature review on established RM constructs, which include trust, satisfaction, commitment, communication, cocreation, reliability, responsiveness, bond, loyalty and so forth.

For instance, under the "satisfaction" RM construct, tourism data could be categorized according to the data related to customers' remarks/perceptions/behaviors regarding their satisfaction or dissatisfaction. Similarly, under the "commitment" RM construct, data could be categorized depending on suppliers' devoted or apathetic behaviors/perceptions/interactions. Furthermore, "stakeholder privacy" would be a useful RM construct under which multinational tourism firms (e.g., hotels and motels groups) could categorize the extent of the responses/behaviors/perceptions of stakeholders from different countries on the privacy of their personal data. These tourism firms could then develop country-specific insights into data privacy.

A single dataset would be relevant to different RM constructs while we categorize tourism data. Analyzing SCS vis-à-vis different RM constructs will explore specific data from different data streams (e.g., the remarks made by diverse stakeholders from different countries about privacy) as per the particular tourism management concerns depicted in the aforementioned three examples of RM constructs (i.e., satisfaction, commitment, and privacy). The data exploration scenario will be customized for the specific stakeholder relationship context. Since data would be categorized based on such RM constructs, common terms (e.g., reliability, trust) will be used in the analysis (e.g., data sampling, abstracting, and summarizing insights) for a specific tourism management concern (e.g., customer loyalty). Also, an organization-specific customization and generalization of such stakeholder-based strategic management of big data would be centered on the particular types of stakeholders and the specific context(s) of their stakeholder relationships and interactions with the organization.

CONCLUSIONS AND TOURISM RESEARCH VISION

Based on the arguments thus far, the following tourism research vision is proposed to be pursued in order to underpin its three undervalued sustainability pillars (economic, social, and environmental):

SCS analysis-centered tourism and hospitality data management for sustainable socio-economic and ecological tourism development.

Since big data research and management have varied cross-disciplinary scopes and cross-functional implications for sustainable development (Vassakis et al., 2018), and stakeholder RM has significant implications for sustainable tourism development (Shams, 2016; Waligo et al., 2013), pursuing the afore-mentioned research vision will have favorable impacts on the three pillars to ensure sustainable tourism development. The cross-disciplinary and cross-func-tional nature of tourism research and management will be well-supported by this tourism research, as, in general, stakeholder RM has implications for almost all tourism business and management knowledge streams and functional areas. Therefore, the SCS analysis-centered tourism and hospitality data management concept will be instrumental in exploring tourism data, based on the common terms that come from different RM constructs and focused on different stake-holder-specific customized contexts of a particular tourism firm. In this context, the insights, related to the background discussion, from SCS-centered tourism data analysis and the tourism research vision will be valuable for tourism researchers to better align their tourism sustainability propositions/hypotheses for future research on sustainable tourism development. Tourism researchers are cordially invited to join this debate in order to pursue this tourism research vision.

ORCID ID

S. M. Riad Shams ⓘD https://orcid.org/0000-0001-8007-7400

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S. M. Riad Shams (corresponding author; e-mail: Riad.Shams@northumbria.ac.uk) is a lecturer in marketing at the Newcastle Business School, Northumbria University, UK.

Demetris Vrontis is the vice rector for Faculty and Research and a Professor of Strategic Marketing Management at the University of Nicosia, Cyprus.

Michael Christofi is a faculty member at the Department of marketing, School of Business at the University of Nicosia.