120 Threats to natural world heritage sites from visitors, climate change and transportation: A management perspective

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The UNESCO list of World heritages includes both cultural and natural sites. Nature parks and cultural landscapes can assigned to the latter group. These sites are often located in sensitive areas and could be threatened by environmental pressures, climate change and crowds of visitors. Despite this, natural (as well as cultural) heritage sites are increasingly used as tools for national tourism marketing campaigns. This in in combination with signs of strong visitor growth raises the discussion of over-visitation (Adie, 2017; Job, Becken and Lane, 2017; Scuttari, and Orsi, Bassani, 2019). Subsequently, there are suggestions that the social and environmental carrying capacity of WHSs should be carefully monitored including an emphasis on information on visitor density (Shelby, Vaske and Heberlein; 1989; Kaltenborn et al., 2013). Previous research show that inclusion of natural areas in the UNESCO WHS list has a significant impact on tourism (Buckley, 2004). However, the management perspective of these aspects is still unknown.

The aim of this study is to examine the management perspective on presumptive environmental issues relating to Natural World Heritage sites. The analysis focuses on four perceptions: (i) visitor accommodation (buildings) and associated infrastructure, (ii) ground transportation infrastructure, (iii) visitor impact (iv) climate change and severe weather events. An ordered Probit model is used to estimate the perceptions of the management. Data is based on the UNESCO World Heritage Management Report 2014 and encompass 90 World Heritage sites that are either purely natural or mixed. Cultural landscapes are also included. The explanatory factors include year of inscription, size (measured as land area in hectares), type (full natural site, mixed natural site or archaeological or cultural landscape), covered by the danger list (with risk of losing the inscription) and country of location. Indicators at the country level capture the general environmental performance and attitudes.

The theoretical starting point for the analysis is the tourist carrying capacity of natural parks or sites (Manning, 2013; McCool and Lime, 2001). This capacity can be defined in different ways (McCool and Lime, 2001), by visitor density, that is, the number of visitors in a given area being a common measure (Shelby et al., 1989) or by the perception of managers or visitors.

Those natural parks that were inscribed early are long since commercialised and presumably also better known to potential visitors and thus more likely to be at environmental risk. Examples of early UNESCO listings are national parks in the United States (Everglades National Park, Grand Canyon National Park, Yellowstone National Park, all inscribed before 1980) and in Europe (Plitvice Lakes National Park in 1979). Some of these parks are now also present on the danger list (reference).

Descriptive statistics show that negative impacts from “Ground transportation infrastructure” is considered a significant problem by 26 per cent of site managers. Large visitor accommodation and associated infrastructure is slightly less negative, with 20 per cent of the managements of natural World Heritage sites or WHS cultural landscapes finding this significant. Almost a third of managers consider that there are significant negative impacts from tourism/visitors/recreation. There is, however, rare that the managers express strong negative views. The perception formulated as "insignificant impact" is the one most commonly appearing in the questionnaire.

The ordered Probit estimates show that perceptions related to tourism increase with the number of years since inscription and it decrease by size of the site. Environmental progress at the country level (growth of emissions and air pollution) also have an influence on the manager perceptions. The empirical results indicate that the commitment of society and government to corporate environmental sustainability goals is of great importance for the recognition of environmental problems and climate change. As a robustness check,

the Multilevel Ordered Probit model is used where the error term is allowed to vary across the country location of the World Heritage Site.

Several implications emerge from the empirical analysis. The major finding is that managements of natural world heritage sites in general are less concerned about the possible negative environmental impacts than for instance what is highlighted in recent research. Alternatively, they have an alternative view on the carrying capacity. Only half of the natural heritage site managers consider climate change as a significant threat, despite an ongoing rise in temperatures, for instance. One explanation behind this could be that the short term-view on operations, including economic prospects, is dominating. Environmental pressure occurring from ground transportation, visitors and accommodation are only seen as a problem by a minority of managers. This contrasts the fact that visitor pressure is one possible reason for ending up on the danger list and eventually also lose the World Heritage Site inscription.

References

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