

# A MODEL OF WASTE MANAGEMENT IN ISLAND TOURIST DESTINATIONS

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## SUMMARY

### Purpose

In island destinations, significant seasonality in tourism leads to the generation of large quantities of waste, negative environmental consequences as well as challenges and threats to sustainable tourism development. The distance of the island tourist destinations from the mainland is a challenging waste management issue. This doctoral thesis deals with addresses waste management issues in island tourist destinations. Croatian islands are attractive summer tourist destinations that are isolated in winter. Long-term tourism success and sustainability are only possible by supporting and respecting the local population's needs, in line with the Strategy for the Development of Sustainable Tourism of the Republic of Croatia until 2030.

The purpose of this doctoral dissertation is to gain a better understanding of waste management systems, investigate the waste management principles at island tourist destinations in the Republic of Croatia, and to evaluate the effectiveness of such principles. The aim is to empirically examine attitudes towards waste sorting, subjective norms and the local population's perception towards waste sorting, and also investigate whether there exists a positive relation between the behavior of residents towards waste sorting, environmental protection, the attractiveness of a tourist destination and sustainable tourism development. The final research goal is to present a proposed model based on quantitative (empirical) and qualitative research and to provide waste management guidelines for island tourist destinations.

### Methodology

The theoretical framework of the area researched is defined on the basis of studied literature using scientific methods, while the analytical part of the thesis is based on the analysis of primary and secondary data. The analysis of secondary data shows the differences between various waste management systems in different areas, i.e., at the European, national and local level. The research, as part of the doctoral dissertation, covers larger and smaller Croatian islands from three counties (regions): four Kvarner and four Dalmatian islands were selected. The Kvarner islands included in the research are Krk, Cres, Lošinj and Rab. The Dalmatian islands are Ugljan and Pašman, belonging to northern Dalmatia, and the islands of Brač and Vis, in central Dalmatia.

The quantitative part of the research refers to primary data collected from surveying the local population on eight larger populated Croatian islands (Krk, Cres, Lošinj, Rab, Ugljan, Pašman, Brač and Vis) using a structured questionnaire and applying a five-point Likert scale. A total of 964 residents were surveyed in the period from September 2022 to January 2023. The questionnaire was validly filled out by 955 respondents. The hypotheses were empirically tested by application of a non-parametric structural equation modeling method using the partial least squares technique (PLS-SEM).

The qualitative part of the research consists of semi-structured in-depth interviews conducted with people familiar with the waste management system and working in 11 utility companies in the period from September 2021 to February 2023. Ten interviews were conducted in municipal waste management companies located on eight analysed islands. An additional interview was conducted in a utility company from inland Croatia, which, according to the established system and results, stands out as a national example of best practice in Croatia. The respective utility company is located in northern Croatia, where it manages waste in 14 local self-government units.

## Findings

All the hypotheses of the doctoral thesis have been confirmed. The results of empirical research show that the elements of the Theory of Planned Behavior (attitudes, subjective norms and perceived behavioral control) are positively and statistically significantly related to the behavior of residents towards waste sorting in an island tourist destination. Furthermore, it has been established that the behavior of residents towards waste sorting is positively and statistically significantly related to environmental protection, the attractiveness of the tourist destination and the sustainable development of tourism. It has also been established that environmental protection in the island destination is positively and statistically significantly related to the attractiveness of the tourist destination on the islands. The research results also show that environmental protection in an island tourist destination and its attractiveness are positively and statistically significantly related to the sustainable development of tourism. The inhabitants of the respective Croatian islands participate in the sustainable development of tourism based on their ecological behavior towards waste sorting. The respondents expressed a high level of interest in environmental protection and consider it important for making tourist destination attractive, i.e., attracting tourists and tourism development.

The conducted in-depth interviews, in addition to specific waste management problems faced by island tourist destinations, also provide examples of good practices in the field of waste management that less successful areas should emulate in the long term.

The analyzed islands differ in the efficiency and level of established waste management infrastructure. With this in mind, some islands are establishing dedicated waste collection systems, while the more advanced islands are improving already established systems and making them more efficient. For the establishment of an efficient waste management system at the island and local level, the cooperation of the local population, utility companies and local self-government units is essential. The proposed waste management model for island tourist destinations does not require amending the existing Waste Management Act and Waste Management Plan, but supports the current guidelines. The approach is based on better cooperation and organization of certain areas at the local level in order to establish a more efficient system and more advanced waste management infrastructure. It implies a larger number of projects for attracting funds to implement the mentioned more advanced infrastructure. Key infrastructure for successful waste management in the observed environments includes containers and trucks for separate waste collection, recycling yards, sorting facilities, composting stations, transfer stations and waste management centers. The "door-to-door" model of separate waste collection has proven to be successful in communities that implement it, primarily as it relieves the burden on local landfills. Accordingly, significant amounts of usable waste are collected and not disposed of like unusable municipal solid waste, which is certainly a more environmentally friendly option in preserving materials and environmental protection.

## Originality of the research

The contribution of the doctoral thesis can be viewed through a conceptual, methodological and applicative context. The thesis also provides a better understanding of waste management systems in specific and ecologically sensitive environments, such as island tourist destinations. Research based on quantitative and qualitative methodology has been able to interpret an important topic for managing specific destinations, such as island tourist destinations. For this reason, the dissertation is particularly suitable for those who plan and make decisions on the sustainable development of destinations. The proposed model is widely applicable in establishing more efficient waste management systems.

## Keywords

waste management, sustainable development, local population, utility companies, island tourism destinations, destination attractiveness, environmental protection

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