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# Navigating WTP disparities: a study of tourist and resident perspectives on coastal management

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Coastal areas are increasingly exposed to environmental pressures due to mass tourism and climate change. Understanding how different user groups value coastal environmental services is essential to design effective and sustainable management strategies. This study explores differences in willingness to pay (WTP) for key coastal services—cleanliness, security, and environmental protection—between tourists and residents in two highly touristic Italian regions: Marche and Campania. Data were collected through a structured survey administered to beach users in both regions. Findings indicate that tourists are more willing to financially support initiatives related to environmental protection, while residents prioritize corrective actions aimed at mitigating the negative impacts of tourism. These preferences reflect differing perceptions and expectations regarding coastal management. The results underline the importance of tailoring coastal policies to specific stakeholder groups. Tools such as environmental tourism taxes and differentiated communication strategies could improve resource allocation, enhance stakeholder engagement, and increase the effectiveness of coastal management initiatives.

## KEYWORDS

contingent valuation, willingness to pay, beach management, pro-environmental behavior, tourism effects

## 1 Introduction

The objective of this paper is to examine the factors influencing willingness to pay (WTP) for various coastal environmental services—such as cleanliness, safety, and environmental protection—among tourists and residents in Italian coastal areas heavily affected by summer tourism.

Italian coastal zones are dynamic ecosystems shaped by ongoing interactions between human activity and natural processes, which affect their ecological balance and morphology. According to [ISPRA \(2011\)](#), the Italian coastline extends for approximately 8,300 km, of which 9% is fully artificial, while around 7,500 km retains natural features. These coastal areas are highly diverse, encompassing rocky shores, linear sandy beaches, and high cliffs framed by promontories. Beyond their ecological importance, they support local economies through tourism and the provision of environmental services.

However, these areas are increasingly under pressure from mass tourism and climate change, resulting in environmental degradation, reduced resilience, and ecosystem stress. In response, the European Union has promoted integrated governance tools such as the Integrated Coastal Zone Management (ICZM) strategy and the Marine Strategy Framework Directive (MSFD), which aim to support sustainable development and protect marine environments ([Ahlhorn, 2017](#); [Olenin et al., 2010](#); [Long, 2011](#)).

Within this framework, understanding what drives users' WTP for coastal services becomes crucial for aligning environmental goals with policy design. To this end, the study adopts the contingent valuation method (CVM), a well-established approach in environmental economics used to estimate individuals' WTP for improvements in non-market goods. CVM directly asks respondents whether they are willing to pay a specified amount to support different scenarios. In this context, WTP serves as a proxy for user engagement and has been widely used to assess the economic value of beaches (Logar and van den Bergh, 2012; Pearce et al., 2006; Peng and Oleson, 2017; Rodella et al., 2020).

By highlighting the heterogeneity in WTP between tourists and residents, this paper aims to identify the key factors shaping users' perceptions of coastal areas. In doing so, it offers policy-relevant insights that can support the development of tailored and effective management strategies, reflecting the specific priorities of each stakeholder group.

The remainder of the paper is structured as follows: Section 2 presents a review of the relevant literature. Section 3 describes the study areas and their coastal characteristics. Section 4 details the materials and methods, including survey design and descriptive statistics. Section 5 reports the WTP results, and Section 6 discusses the implications of the findings and concludes the study.

## 2 Literature review

Coastal management presents a multifaceted challenge, as it involves balancing various socio-economic interests and environmental concerns while safeguarding coastal resources. One of the key challenges lies in the diverse array of stakeholders with vested interests in coastal areas, including local communities, businesses, government agencies, environmental organizations, and indigenous groups, as well as tourists. Incorporating values, views and expectations of local communities is fundamental in coastal management, not only because they are the representatives of traditional knowledge and issues (Abecasis et al., 2013; Jarvis et al., 2015; Daily, 2000), but also because they are directly affected by environmental preservation of coastal areas (Munro et al., 2017). On the other side, tourists and visitors of littorals and coastal areas have their own interests and both the visions have to be integrated into effective management plans through new adaptive strategies that considers the needs of various stakeholder's groups (Wang and Jia, 2012; Liu et al., 2020; Cervantes et al., 2008; Pereira et al., 2003; Marzetti et al., 2016; Munro et al., 2017; Alessa et al., 2003; García et al., 2015).

Analyzing the similarities and differences between residents and non-residents in identifying public values associated with beaches, studies have shown that these stakeholder groups differ significantly in mapping preferences and policy priorities. Residents, typically more reliant on natural resources, tend to prioritize long-term sustainability and resilient policies (Oh et al., 2009), whereas non-locals place greater value on intangible qualities such as quietness and general recreational experiences (De Juan et al., 2017; Munro et al., 2017; Simpson et al., 2016). For example, in Australia's Kimberley region, residents prefer

less accessible areas for recreation, while tourists favor broader conservation of untouched environments (Munro et al., 2017).

Recognizing these distinct preferences enables more balanced coastal management by reducing potential trade-offs between local and non-local interests. Nguyen et al. (2024) and Concu and Atzeni (2012) confirm the divergent coastal values of tourists and residents. Tourists tend to prefer natural, undeveloped beaches and are more willing to support protective measures aimed at preserving scenic quality, while residents prioritize infrastructure that supports local socio-economic needs (see also Doran et al., 2015 and Marin et al., 2009). At the same time, residents strongly oppose overdevelopment and support sustainable resource use, particularly about maintaining public access to beaches. These findings suggest that coastal management should adopt a stakeholder-specific approach that balances ecological preservation with community-centered development goals.

Besides differences between the two groups of stakeholders, there are other factors influencing WTP that can be grouped into socio-demographic, psychological, and environmental categories. Several studies have found that age, income, and gender significantly affect WTP estimates (López-Mosquera, 2016; Marzetti et al., 2016; Batool et al., 2024). For example, younger respondents and higher-income individuals are often more willing to contribute to environmental protection, while gender differences can also play a role, with men typically showing higher WTP for infrastructure improvements (López-Mosquera, 2016). Additionally, environmental awareness and values have been shown to be key predictors of WTP, as individuals who are more conscious of environmental issues tend to support conservation efforts more readily (Halkos and Matsiori, 2012).

These differences underscore the complexity of managing coastal areas in a way that satisfies both groups. Coastal policies must, therefore, balance development that attracts tourism with environmental preservation efforts that protect the long-term ecological integrity of the coast and the quality of life for residents. These studies suggest that successful coastal management must integrate both development and conservation strategies, ensuring that tourist infrastructure is balanced with environmental sustainability. This approach can help meet the diverse needs of both tourists and residents, supporting economic growth through tourism while preserving coastal ecosystems for future generations.

While tourism offers economic benefits like job creation, it also raises concerns about environmental degradation, particularly in sensitive coastal areas (Gonzales et al., 2018; Lundberg, 2015). Residents' preferences highlight the need for tailored strategies to manage overcrowding, pollution, and resource consumption (Martín et al., 2018; Lindberg and Johnson, 1997; Sheldon and Abenoja, 2001; Andereck et al., 2005; McGehee and Andereck, 2004). Sustainable practices must balance economic growth, tourism management, and environmental conservation (Petrosillo et al., 2007; Jentoft, 2000).

This paper contributes to the existing literature by exploring further the analysis of stakeholders' preferences in coastal management and offering new empirical insights on the WTP for beach ecosystem services in the Italian context, an area that remains unexplored in current research. Specifically, we examine how overtourism acts as a determinant of WTP among

residents, a topic that has not been sufficiently explored in prior studies. By focusing on Italy, a country known for its high tourism density, especially during summer season, and valuable coastal assets, we aim to expand the international and national discourse on sustainable beach use, equity in coastal access and adaptive and resilient management planning. The results of this paper will contribute to creating more effective coastal management strategies, rethinking the existing ones and designing new frameworks that integrate the needs, perceptions, and expectations of the different stakeholders groups.

### 3 Study area

This research concerns four beaches and littorals along the Italian Regions of Marche—Adriatic coastline—and Campania—Tyrrhenian coastline. Four main coastlines are under analysis, San Benedetto del Tronto in Marche and Agropoli, Battipaglia, Capaccio and Eboli in Campania (Figure 1). These sites were chosen because of their similar characteristics: linear low sandy beaches affected by heavy tourism pressure during summer seasons. Moreover, the San Benedetto del Tronto coastline shows erosion issues due to the presence of upstream structures that retain sediments and dune damages (Chiavazzo et al., 2017), storm surges and tides.

#### 3.1 Marche region—San Benedetto del Tronto

The Marche region is characterized by 180 km of coast—from the headland of Gabicce Mare to the mouth of the Tronto River. Most of the beaches have been recognized by the “Blue Flag”, a voluntary eco-label assigned every year by the Foundation for Environmental Education (FEE) —UNEP (United Nations Environmental Programme) and UNWTO (United Nations World Tourism Organization) to seaside resorts that meet criteria related to sustainable land management. The aim of this award is to direct local management policy of coastal resorts toward a process of environmental sustainability (Programma Bandiera Blu, 2022). The coastline alternates gravelly, rocky, and sandy beaches creating the perfect mix for tourists’ needs. From Ancona, the capital of the region, it is possible to see the Conero Mountain, a promontory that overlooks the Adriatic Sea. The Conero Mountain is the beginnings of the Marche coastline “Conero Riviera”, full of white bays some of them reachable only by boat or through paths in the green Mediterranean scrub (Regione Marche, 2022a). Southern area of the Conero is characterized by wide and flat sandy shores until reaching an area rich in pine forests of Porto Recanati, Porto Potenza Picena and Civitanova Marche; the “green Picena Riviera” stretches between Porto Sant’Elpidio to the “Palm Rivier” of San Benedetto del Tronto, with its 7,000 palm trees that grows on the white beaches (Regione Marche, 2022a).

The urbanization process of ’60 and ’70 of last century, has led to the built of several infrastructures as, for example (A14 highway and minor road network) that has significantly affected the natural landscape of the region so it is possible to

state that there is a single coastal conurbation extending from the promontory of Conero Mountain as far as San Benedetto del Tronto and beyond, in Abruzzo territory (Acciarri et al., 2017).

According to Cassa Depositi e Prestiti (CdP), tourism represents around the 3,5% of regional GDP, with more than 9,000 hotels, café, restaurants, and farmhouses (Cdp, 2021).

This study is focused on San Benedetto del Tronto, a city located in the Marche region (Central Eastern Italy). San Benedetto del Tronto is one of the main holiday resorts of the southern Marche between the Tronto and Tesino rivers. San Benedetto del Tronto is characterized by fine sandy beaches (San Benedetto del Tronto., 2022). Beach has a total extension of 7.97 km, 3.29 km of them are equipped and managed by 114 beach concessions; 1.7 km encompassed by free access beaches, 1.34 km are dedicated to the port area and 1.63 km of Sentina Regional Natural Reserve. The littoral is characterized by fine sand (0.125–0.25 mm) and protected by 4.7 km of detached and emerged breakwaters reefs, on the other side, the area of Sentina Regional Natural Reserve has not natural defenses (Acciarri et al., 2017). In 2020, San Benedetto del Tronto recorded 343 accommodation facilities and 10487 beds. Due to their characteristics, San Benedetto del Tronto attracts visitors from across Italy and Europe, above all from Germany, Switzerland, Netherlands, the United Kingdom and France, drawn by its coastal charm and amenities (Regione Marche, 2022b). In 2020, San Benedetto del Tronto recorded a total of 119,000 arrivals and 532,790 tourists. Although they were influenced by the COVID-19 pandemic, they highlight a significant influx of visitors despite restrictions. The tourism sector is a crucial component of the local economy, and the dependence of the city on this sector makes it sensitive to fluctuations in tourism flows and environmental challenges such as coastal erosion and extreme weather events (Marasco et al., 2022).

#### 3.2 Campania region—Salerno Gulf: Battipaglia, Eboli and Agropoli

The Campania region is defined by 500 km of coast, counting four different Gulfs: Gaeta, Naples, Salerno and Policastro. The Salerno Gulf extends for 100 km between “Punta della Campanella” and “Punta Licosa” in Agropoli (ISPRA, 2007); Battipaglia and Eboli, for example, have coastal stretches measuring 4.34 km—of which 55% is occupied by beach establishments, and 7.97 km—17% are occupied by beach establishments—respectively (Chiavazzo et al., 2017).

More than 50 beaches in 2021 are awarded with the “Blue Flag”. The coastline alternates between gravelly, rocky, and sandy beaches. The northern and the southern area Salerno Gulf are marked by rocky coastlines, while the middle area—Sele Plain—presents a low and sandy coastline – Figure 1 shows, for example the coast of Battipaglia, characterized by a linear and sandy littoral, the same characteristics of the littoral of San Benedetto del Tronto. The Cilento Plateau descends to the sea with a high, rocky coastline, jagged with inaccessible inlets. The Sorrento Peninsula has continuous intervals of sheer cliffs overhanging the sea and small sandy or pebbly inlets enclosed between rocks. Moreover,





in 2021, the impact of tourism was related to cultural cities, 28,4% Enogastronomic tourism, 27,8% “beach&sun” tourism, and 6,0% religious tourism (ISNART, 2021). In particular, data for this research are collected in the municipalities of Battipaglia, Eboli, and Agropoli. Looking closely at the tourists’ characteristics, UnionCamere (2022) has registered that the majority of tourists are from other Italian regions (55%), while European and non-European tourists are mostly from North America, Germany and France. In 2020, the Salerno Gulf has registered 1.354.263 tourists, attracted by landscape, culinary offerings and cultural events (Marasco et al., 2022).

## 4 Methodology and econometric model

The information was collected using a questionnaire designed in 2017 to understand visitor preferences regarding the coastal environment and safety. The primary goal was to gauge individuals’ interests in services, security, and environmental protection. The questionnaire was developed based on existing literature and previous similar studies (see Ardeshiri et al., 2019; Birdir et al., 2013; Enríquez-Acevedo et al., 2018; Peña-Alonso et al.,

2018; Roca et al., 2009; Rodella et al., 2019), as well as on the guidelines provided by the National Lifeguard Society, in collaboration with beach management specialists. The aim was to capture the characteristics of the territories under investigation and the perceptions of both residents and tourists. Following the methodology proposed in Arrow et al. (1993) and Huhtala (2004), the initial phase included a focus group discussion with 10 participants in May 2017 for a pre-test, with the aim to identify potential biases, misunderstandings, and refine the wording of the questionnaire.

The final survey is structured in three Sections: section 1 collects socio-demographic information; section 2 focuses on eliciting WTP for beach cleanliness and safety, the presence of services and facilities and environmental protection; section 3 relates to perception, asking respondents to rate their perceived presence of litter and waste, tourism’s damages and the facilities and services present on the beach.

Data collection was conducted between June and September 2017 in the Salerno Gulf and San Benedetto del Tronto. We employed convenience sampling, where tourists and residents at various seaside locations were approached between 9:30 am and 6:30 pm. We selected this method due to its practicality and the ease of accessing a broad range of respondents. To avoid duplication of

responses, only one person was interviewed in case of a group visit. A total of 387 observations were collected.

The data were analyzed using both qualitative and quantitative methods, with the CVM being the primary analytical tool, as it is well-suited for estimating WTP for environmental improvements and services. Following previous studies (e.g., Wang, 1992; Boyle, 2003; Haefele et al., 2019), the survey asked respondents to state their preferences in a hypothetical market scenario where a monetary value was attached to the protection and management of natural areas. Specifically, respondents were administered questions designed to elicit their WTP for improvements in beach cleanliness, safety, and environmental management, using a double-bounded (DB) dichotomous choice (DC) approach. They were first asked whether they would be willing to pay a specified amount (e.g., “Are you willing to pay X € per person each season in this territory if a financial fund is established for proper beach management?”); next, based on their initial yes/no response, a follow-up question adjusted the proposed amount—either halving or doubling it—to refine the estimate. This method, drawn from Loureiro and Ojea (2008), Wang (1992), and Hanemann et al. (1991), reduces statistical variability and improves the accuracy of WTP estimates. Based on the pilot group and the literature, the sets of bids (X) used in this study are: 2€, 5 €, 10 €, 20 €.

The dataset is analyzed with a dichotomous choice statistical model, which estimates the coefficient using maximum likelihood. This model suits the structure of our questionnaire and allows everyone to fall into of the following categories: yy, yn, ny, nn, depending on the relevant case for everyone: for example, if one falls in yn, they answered “yes” to the first bid and “no” to the second. This way, everyone contributes to the estimation of the WTP for the part of his/her answer that is closer to their real WTP. After the regression, the mean WTP is estimated as a non-linear combination of the coefficients of the variables.

Under the assumption of López-Feldman (2012), we regressed the bid variable as in the following equation:

$$BID_{i(z_i, u_i)} = z_i' \beta + u_i \quad (1)$$

Where  $z_i$  is a vector of the explanatory variable,  $u_i$  is the error term and  $\beta$  is the vector of estimates from which WTP is computed as:

$$E(\tilde{z}_i) = \tilde{z}' \begin{bmatrix} -\frac{\hat{\alpha}}{\hat{\delta}} \end{bmatrix} \quad (2)$$

Where  $\tilde{z}'$  is the vector of the values of interest for the explanatory variable,  $\hat{\alpha}$  is a vector of constant of the explanatory variables and  $\hat{\delta}$  the coefficient for each regressor that captures the amount of the bid.

To better account for individual-level heterogeneity, the model includes several control variables widely supported in the environmental valuation literature. These include age, gender, frequency of visits and vacation length. Age and gender are common socio-demographic predictors of environmental preferences and WTP (López-Mosquera, 2016; Batool et al., 2024). Specifically, age is negatively associated with WTP, with younger individuals being more willing to pay than older ones. Gender also plays a significant role, as women tend to exhibit

higher WTP compared to men, showing greater sensitivity toward environmental improvements. Vacation habits—captured by how often the respondents visit the beach (first-time, regular, or occasional) and the number of vacation days—are proxies for experience and intensity of beach use, which may shape perceived needs and environmental concerns (Munro et al., 2017). Familiarity with the beach environment, often associated with higher visitation frequency, tends to enhance the importance attributed to local recreational and environmental values, whereas occasional users may focus more on well-known tourist destinations. In addition to these control variables, the analysis incorporates four composite variables reflecting user perception of environmental and facility-related dimensions, namely tourism effect, waste on beach, facility quality and facility security, which are explained in the data description section.

## 4.1 Data description

Table 1 reports descriptive statistics for the variables used to estimate the average willingness to pay (WTP) for the overall sample, as well as for the resident and tourist sub-samples. On average, the first bid across the entire sample is approximately €8, while the second is slightly lower at around €7. Figure 2 illustrates the distribution of bids across the two groups, showing that tourists offer higher amounts, with a mean first bid of €8.95 and a second of €7.99, compared to residents, whose averages are €6.92 and €6.75, respectively.

The perception variables used in the analysis capture key aspects of beach users' experiences and concerns. Tourism Effect measures the perceived intensity of environmental pressures attributed to tourism activities, averaging respondents' evaluations (on a scale from 0 = absent to 5 = very high) of impacts such as pollution, natural area changes, coastal anthropisation and hardening, soil erosion, traffic, biodiversity loss, excessive resource consumption, and coastal dune degradation. Waste on Beach reflects the perceived presence of litter on the littoral, including organic debris (such as algae, wood, and shells), cigarette butts, glass bottles and cans, plastic, paper, metal, rubber, and mixed waste. Facility Quality represents satisfaction with the condition of facilities like parking areas, beach access, beach cleanliness (smell and noise levels), crowding, bars and restaurants, toilets, sunbeds and umbrellas, and recreational or sports activities. Finally, Facility Security captures the perceived safety while using the beach, considering factors such as surveillance, lifeguard presence, drowning risks, sea floor conditions (holes or dangerous structures), the strength of marine currents, and availability of first aid kits.

Figure 2 compares the average values of the first and second bids between tourists and residents. Tourists initially display a higher willingness to pay (first bid) than residents, but their WTP declines with the second bid, indicating a degree of price sensitivity. In contrast, residents show more stable bid values, suggesting a more consistent valuation of coastal services. This pattern implies that while tourists may initially express strong support for beach management initiatives, their commitment weakens upon reconsideration, whereas residents maintain a steady, possibly more deliberated, perspective on coastal investments.

TABLE 1 Summary statistics and description of the variables.

Variable	Description	Observations	Mean	SD	Min	Max
First bid	First offer in €	356	7.95	7.30	2	20
Second Bid	Second offer in €	356	7.21	10.28	1	40
Age	Age of the respondent	351	36.51	14.29	18	75
Gender:	Gender of the respondent	345	1.48	0.50	0	1
Male	1	181				
Female	2	164				
First time visiting:	How often the respondent visits	346	2.16	0.77	1	3
Yes	1	78				
Usually come here	2	134				
Sometimes come here	3	134				
Number of vacation days:	Vacation length	335	2.81	1.13	1	4
1	1	61				
2–7	2	68				
7–15	3	78				
15+	4	128				
Tourism effects	Perception of tourism on the resort environment	348	2.94	1.03	0	5
Waste on beach	Perception of waste left on the beach	284	2.16	1.27	0	5
Facility quality	Perceived quality of the beach facility	350	2.94	0.99	0	5
Facility security	Perceived security of the beach facility	351	3.02	0.88	0	5

Tourism effect is the average perception from 0 (absent) to 5 (very high) of the following environmental damages: Pollution, natural area changes, coastal anthropisation and hardening, soil losses, traffic, biodiversity losses, excessive resource consumption, coastal dunes degradation. Waste on beach is the average perception from 0 (absent) to 5 (very high) of the presence of the following waste: organic litter (algae, wood, shells), discarded cigarettes, glass bottles and cans, plastic, paper, metal, rubber, mixed litter. Facility quality is the average perception from 0 (absent) to 5 (very high) of the quality perceived for the following facilities: parking, beach access, beach smell noise, crowding, bar and restaurant, toilets, sun beds/umbrellas, sport/fun, recreational activities. Facility security is the average perception from 0 (absent) to 5 (very high) of the respondent's perception of security regarding: surveillance, safety, drowning danger, presence of holes on the sea floor, presence of dangerous structures, presence of strong marine currents, presence of lifeguard towers, first aid kits.

Figure 3 shows the distribution of perception variables for tourists and residents. Tourists report a higher median perception of the impacts of tourism, indicating greater sensitivity to the environmental pressures caused by overtourism. They also perceive a greater presence of beach waste compared to residents, although for both groups the distribution skews toward lower values, suggesting that waste is a relatively less critical issue. Additionally, tourists express higher satisfaction with the quality and security of beach facilities, pointing to a more positive overall perception of coastal services compared to residents. Understanding these differences in user perceptions is crucial, as attitudes toward the environment significantly influence the acceptance of coastal management policies and programmes (Gelcich et al., 2005; De Juan et al., 2017).

## 5 Results

Tables 2, 3 report the results of our analysis, showing estimates for the overall sample as well as for tourists and residents separately.

Our results confirm the heterogeneity of interests and priorities between stakeholders, aligning with the existing literature.

In Table 2, presenting estimates for the full sample, we computed that the WTP for the three different domains is 6.33€ for beach cleanliness, 6.57€ for beach security and 6.05€ for environmental protection; with a value of almost 7€, promoting a higher beach security is generally more valuable for the beach users than focusing on cleanliness or environmental protection.

One of the most influential factors for the three domains is Age, which is significant at the 1% level and shows a negative sign. In other words, the older the interviewee the lower their WTP. This implies that youngest generation are more likely to pay a higher amount rather than middle-aged or elder people, a result aligned with the literature (see for example Marzetti et al., 2016). This could be explained with elder individuals not placing the same emphasis on environmental conservation as younger generations, particularly if they have not grown up with the same level of awareness of ecological issues (see for example, Wright et al., 2003). Moreover, over time people may become less enthusiastic about

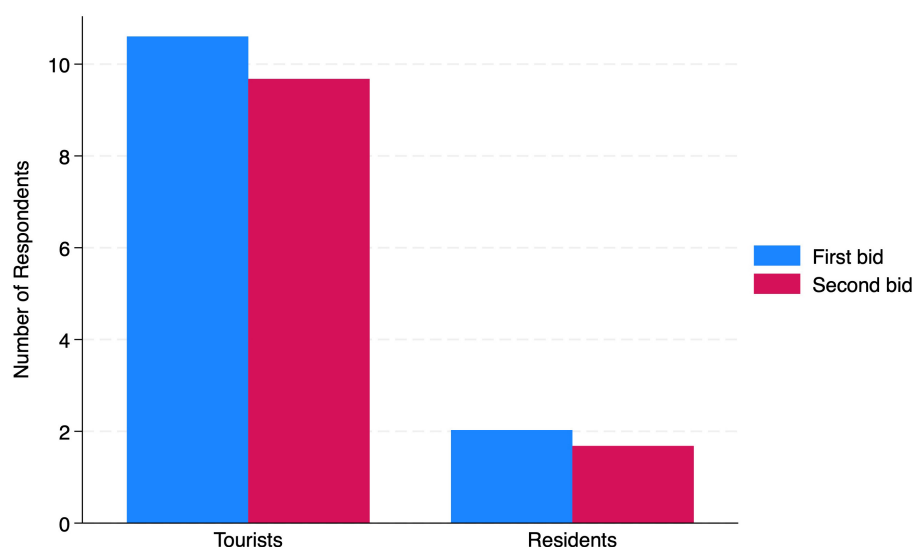


FIGURE 2  
Distribution of the average values of first and second bids by tourists and residents.

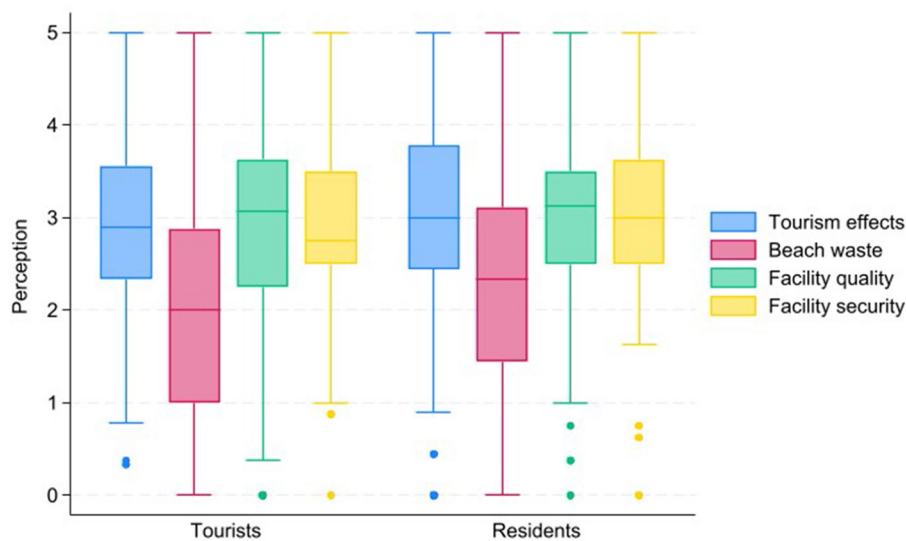


FIGURE 3  
Box plots of the distribution of the perception variables of the tourists and residents subsamples.

new experiences, particularly if they have been already exposed to nature (Li and Ando, 2020).

The other socio-economic variables are not significant in determining the WTP, except for Number of vacation days in relation to beach security, that is significant at the 10% level and with a positive sign, meaning that as the length of the holidays increases so do the value attributed to beach security. Our findings show that the variable gender is negative but not statistically significant, suggesting that women may exhibit lower WTP in environmental or tourism contexts. Previous literature has attributed this heterogeneity to differences in the prioritization

of financial resources and to socio-economic constraints across genders (Loureiro and Hine, 2002; Yoo et al., 2008); however, due to the lack of income data, we are unable to test this hypothesis.

Facility quality is highly significant and with a negative sign for the beach cleanliness domain: an increase in the perceived quality of the beach results in a decreasing WTP for cleanliness. We hypothesize that this counterintuitive result could stem from a cognitive bias, as described by Kahneman et al. (1993), where customers might understate their WTP to avoid a higher payment. Alternatively, it could be that respondents do not perceive a need to pay for beach cleanliness because they evaluate the beach



TABLE 2 Regression results for the overall sample.

Variable	(1)	(2)	(3)
	Beach cleanliness	Beach security	Environmental protection
Age	−0.159***	−0.200***	−0.170***
	(0.0463)	(0.0504)	(0.0491)
Gender	−1.675	−1.252	−1.302
	(1.257)	(1.383)	(1.286)
First time visiting	0.172	0.598	0.784
	(0.795)	(0.883)	(0.852)
Number of vacation days	0.622	1.173*	0.568
	(0.580)	(0.636)	(0.590)
Tourism effects	1.155	1.020	0.912
	(0.778)	(0.806)	(0.773)
Waste on beach	−0.847	−1.026	−0.522
	(0.602)	(0.633)	(0.610)
Facility quality	−1.851***	−1.173	−0.285
	(0.684)	(0.776)	(0.761)
Facility Security	0.911	1.721*	0.461
	(0.878)	(0.898)	(0.995)
Constant	13.60***	8.587*	8.775*
	(4.580)	(4.619)	(4.477)
Observations	144	135	127
Log-likelihood	−316.7	−297.3	−276.1

\* $p < 0.10$ .  
\*\* $p < 0.05$ .  
\*\*\* $p < 0.01$ .  
Standard errors in parentheses.

they frequent as already sufficiently clean. While this remains speculative, it is possible to consider that the higher the quality of the beach establishment, the less the respondent is convinced of having to bear the cost of its maintenance and, therefore, the lower their WTP.

The perceived safety of the facility significantly influences the WTP for the beach security domain, at the 10% level. This outcome aligns with expectations, considering that security is a fundamental human need, and thus, customers may assign a higher value to it (see, for example, [Halkos and Matsiori, 2012](#) and [Kontogianni et al., 2014](#)).

The results in [Table 3](#) reveal significant differences between tourists’ and residents’ WTP for beach cleanliness, security, and environmental protection. Tourists show a higher WTP across all domains, with a WTP of €7.10 for environmental protection, compared to residents’ WTP of €6.28. Similarly, tourists are willing to pay €7.15 for beach security, while residents offer a slightly lower amount of €6.89. These findings align with the literature, where

tourists are generally found to value the immediate recreational benefits more highly, while residents show a greater attachment to the long-term sustainability of their local environments.

One of the key findings regarding residents, is their higher WTP in response to perceived tourism damage. The regression analysis indicates that residents’ WTP increases with their perception of negative impacts from tourism, such as pollution and resource depletion. This suggests that residents, while generally having lower WTP than tourists, are more willing to contribute financially to mitigating the negative effects of tourism when they perceive significant environmental degradation. This response highlights a prioritization of corrective measures to restore or protect their local environment. Therefore, the results indicate that residents’ WTP is not merely a reaction to environmental protection in general but is specifically driven by a desire to mitigate the negative impacts of tourism on their communities.

For tourists, the results show a clear preference for investing in services that improve their overall beach experience. Their WTP is more significantly influenced by facility quality and safety. This is consistent with tourists seeking immediate benefits during their visit, rather than long-term conservation efforts.

## 6 Implications for governance and conclusions

Coastal zones are intricate socio-ecological systems where environmental, social, and economic dimensions are deeply interconnected. They play a crucial role in supporting biodiversity, maintaining environmental balance, and sustaining local economies through services and tourism. However, they are increasingly under pressure from mass tourism and the exacerbating effects of climate change.

Coastal governance is undergoing significant change and is increasingly managed by a variety of actors—public institutions, private stakeholders, and voluntary organizations—each with their own interests. This diversity often leads to a fragmented system, making coordination more difficult but also highlighting the need for more integrated and collaborative approaches to address the complex challenges facing coastal areas ([Nicholson-Cole and O’Riordan, 2009](#); [Luisetti et al., 2011](#); [Chang and Yoon, 2017](#)). In this context, economic valuation techniques, such as WTP surveys, provide valuable insights into stakeholder preferences and can guide decision-making in this fragmented landscape. The purpose of this study was to highlight the differences in WTP between tourists and residents in Italian coastal areas heavily affected by tourism. By capturing beach users’ WTP for cleanliness, safety, and environmental protection in two key tourism regions in Italy—Marche and Campania—this study provides a baseline on stakeholder perceptions and expands the literature on coastal WTP dynamics in Italy.

The survey results reveal distinct priorities: tourists prioritize environmental quality and beach security, whereas residents place greater emphasis on mitigating the negative impacts of tourism. This heterogeneity suggests that tailored interventions, aligned with specific stakeholder sensitivities, can enhance the effectiveness of coastal management strategies. For instance, tourists’ higher WTP for environmental protection could be



TABLE 3 Results for residents and tourists' subsamples.

Variable	Residents			Tourists		
	(1)	(2)	(3)	(1)	(2)	(3)
	Beach cleanliness	Beach security	Environmental protection	Beach cleanliness	Beach security	Environmental protection
Age	−0.0682	−0.112**	−0.117**	−0.220***	−0.260***	−0.272***
	(0.0484)	(0.0565)	(0.0522)	(0.0741)	(0.0784)	(0.0839)
Gender	−4.976***	−4.202***	−3.863***	2.528	2.354	2.542
				(1.887)	(2.075)	(2.049)
First time visiting	-	-	-	−1.078	−1.385	−0.489
				(1.215)	(1.363)	(1.401)
Number of vacation days	-	-	-	0.910	0.620	0.908
				(0.868)	(0.925)	(0.904)
Tourism effects	2.156***	1.743*	1.714**	−0.407	0.0859	0.183
	(0.830)	(0.891)	(0.842)	(1.190)	(1.284)	(1.250)
Waste on beach	−1.036	−0.952	−0.581	−0.635	−1.181	−0.770
	(0.750)	(0.812)	(0.784)	(0.836)	(0.889)	(0.917)
Facility Quality	−1.106	−0.398	−0.0539	−2.013*	−1.451	−1.046
	(0.708)	(0.902)	(0.801)	(1.064)	(1.169)	(1.294)
Facility Security	0.0804	0.949	−0.385	1.419	2.109	1.365
	(0.894)	(0.945)	(1.039)	(1.286)	(1.433)	(1.621)
Constant	15.24***	12.27**	13.67***	15.17**	14.59**	11.84*
	(4.746)	(4.839)	(5.125)	(6.565)	(6.947)	(7.023)
Observations	90	87	76	74	67	64
Log-Likelihood	−213.9	−206.6	−182.9	−137.8	−124.2	−114.5

\**p* < 0.10.  
\*\**p* < 0.05.  
\*\*\**p* < 0.0.  
First time visiting and Number of vacation days do not apply for the resident's sample. Standard errors in parentheses.

leveraged through environmental tourism taxes to fund climate mitigation and preservation efforts, while residents' concern for tourism-related damages calls for corrective measures and sustainable management practices. Different communication strategies—framing environmental protection for tourists and corrective action for residents—could further increase stakeholder engagement.

Furthermore, contributions of between €5 and €7 per person, as indicated by the survey, could establish sustainable financing mechanisms for beach governance and improvement initiatives, helping to address the challenges posed by limited resources. This approach not only strengthens the financial sustainability of coastal management but also fosters broader community engagement and supports the long-term resilience of coastal ecosystems and economies.

Importantly, the study's findings offer actionable insights for policymakers and local administrations. Integrating stakeholder perceptions into coastal management plans can enable more efficient resource allocation and the design of cost-effective funding channels. Although this research focuses on Italian coastal areas, the broader implication is clear: understanding

user heterogeneity and crafting targeted management strategies are crucial for improving both environmental sustainability and local economic development. This advocates for the application of choice architecture approaches, aligning management efforts with the distinct values and expectations of different user groups. By doing so, local authorities can foster a more inclusive and resilient model of coastal governance, capable of addressing current pressures while promoting sustainable development.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Author contributions

FO: Data curation, Formal analysis, Methodology, Software, Writing – original draft, Writing – review & editing. IR: Conceptualization, Formal analysis, Investigation, Methodology, Project administration, Supervision, Validation, Writing – original

draft, Writing – review & editing. MG: Funding acquisition, Methodology, Supervision, Validation, Writing – original draft, Writing – review & editing.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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## Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/frevc.2025.1497532/full#supplementary-material>

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