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Balancing tourism and conservation: analysing the sustainability of tourism in the city of Naples through citizen perspectives

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Abstract
This research aims to assess how residents perceive the impact of tourism on different dimensions, including the economy, environment, culture, society, and politics. Tourism plays a key role in stimulating a city's economy. Nevertheless, it also presents challenges for residents, influencing their quality of life and mobility. Recently, the city of Naples (South of Italy) has emerged as a favorite destination for tourists in search of art, history, and landscapes. By gathering insights from the community through the administration of a questionnaire, the study provides a comprehensive understanding of the multifaceted effects of tourism development in Naples. A theoretical model was estimated using a Structural Equation Model (SEM) to validate the formulated hypotheses regarding the relationship between six factors used to measure residents' perception of tourism. Results provide a valuable resource for public administrations, helping them adopt effective strategies to address the impact of tourism on residents and mitigate its negative effects.

Keywords Tourism impact · Citizens' perceptions · Tourism development · Tourism sustainability · Structural equation models

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1 Introduction

The tourism industry is a rapidly expanding and substantial sector that makes a significant contribution to the global GDP (Morrison 2023; Dileep and Pagliara 2023). While tourism can bring benefits such as increased income, employment opportunities, improved infrastructure, and the promotion of local culture, it can also lead to adverse effects such as rising living costs, escalating property prices, congestion, and crime (Deery et al. 2012; Látková and Vogt 2012). Previous research has deeply explored residents' perspectives on tourism development, highlighting their recognition of both the positive and negative impacts (Vareiro et al. 2013). These perceptions significantly influence residents' support or opposition to tourism. Factors influencing these perceptions, such as economic gains, economic involvement, community attachment, environmental attitudes, and participation in the planning process, have been thoroughly examined in existing literature (Andereck and Nyaupane 2011; Nicholas et al. 2009).

According to the Tourism Forecast 2023 report (Demoskopika 2023) published by the Demoskopika Institute, a research institute with over 20 years of expertise in economic and social research, market surveys, and opinion polls conducted on behalf of businesses, public and private entities, as well as local and national institutions, Italy is expected to reach a record-breaking 442 million overnight stays. The tourism industry in Campania, a region in southern Italy, is set to surpass pre-pandemic levels, with Pompeii standing out as a notable case. The archaeological site has already surpassed its visitor numbers from 2019 within the first two months of this year. Overall, tourism success is growing in 2023, following the national trend. As tourism remains the primary source of income for the region, signs of recovery are evident. The Demoskopika Institute predicts nearly 6 million arrivals for the current year, representing a 13.1% increase compared to the previous year.

Actually, the city of Naples serves as the main attraction for regional tourism. Naples serves as a major regional tourist attraction, drawing visitors from both Italy and around the world. Its allure lies in the city's distinctive blend of art and daily life. Despite the pandemic's challenges, CNN acknowledged Naples as one of the 22 dream destinations for 2022, highlighting the need to understand residents' perspectives on tourism development. Given tourism's significant role in Naples' economy, policymakers and developers must assess its impact on residents.

This research significantly contributes to the theoretical literature by providing a valuable understanding of the implications associated with tourism development. It aims to analyze the impact of tourism on Naples by investigating the perceptions of its residents from economic, environmental, cultural, social, and political viewpoints. To accomplish this, a survey was conducted, involving the administration of a questionnaire to the citizens of Naples. Insights from residents' opinions hold significant value in shaping policies and services aimed at promoting tourism, leveraging its benefits, and mitigating potential negative consequences. The article begins with a literature review, providing an overview of the analyzed theme and presenting a list of hypotheses formulated for the theoretical model. The statistical methodology and the estimation of the theoretical model are then described, followed by a discussion of the results. Finally, the study concludes with findings, implications, and considerations for future research.

2 Literature review and research hypothesis

Since the 1970 s, several studies have been published, aiming to comprehensively examine residents' reactions to tourism in their communities. These investigations have been guided by the principles of Social Exchange Theory (SET) (Sharpley 2014), which assumes that individuals make decisions about engaging in exchanges based on the evaluation of the rewards and costs involved (Emerson 1976).

Scholars have made significant efforts to gain insights into the dynamics of social exchange between the tourism industry and residents by employing a range of variables. Through the lens of SET, researchers have delved into the connection between residents' perceptions of their ability to control tourism and their level of support for tourism development (Ap 1992). Furthermore, extensive studies have been conducted to examine how the interplay of exchange factors not only shapes attitudes toward tourism but also profoundly influences the perceptions of residents regarding the impacts of tourism on their community (Jurowski et al. 1997). These investigations have provided valuable and carefully analyzed findings in the field of tourism research.

The effects of tourism, both positive and negative, have been identified as potential determinants of residents' responses to tourism development (Andereck et al. 2005). The relationships between tourism development and its economic, socio-cultural, and environmental impacts strongly influence the perceptions of residents towards the industry. These impacts play a crucial role in determining the willingness of the community to engage in a reciprocal relationship with the tourism sector (Stylidis et al. 2014).

However, the SET framework has been found to yield contradictory findings (Emerson 1976). On one hand, some researchers have observed that significant variables related to tourism's impacts can predict personal benefits and influence how residents react to tourism development (Andereck and Nyaupane 2011). On the other hand, several studies have not been able to establish such relationships (Ko and Stewart 2002; Diedrich and García-Buades 2009), trying to explain this inconsistency as the absence of mediating variables in the SET-based framework. Specifically, the direct link between residents' cognition, such as their positive and negative attitudes towards tourism's impacts, and their behavior, such as supporting or opposing tourism development. Over recent years, several factors have been identified as crucial in explaining residents' support for tourism development (Andereck and Nyaupane 2011; Nunkoo et al. 2013; Látková and Vogt 2012). These factors includes personal benefits, level of trust, and power distribution among stakeholders. By incorporating these elements, a more comprehensive understanding of the interactions between residents and tourism development becomes evident. Considering the multifaceted impacts of tourism allows for a holistic understanding of its dynamics with the local community.

Existing research shows that residents typically express support for the development of tourism in their local community when they perceive the potential positive effects (Látková and Vogt 2012; Nicholas et al. 2009; Nunkoo and Ramkissoon 2012a; Rasoolimanesh and Jaafar 2017). In this regard, tourism can bring about beneficial outcomes for communities, including the enhancement of employment opportunities, improvement of living standards, and development of infrastructure. Additionally, tourism contributes to the availability of recreational and entertainment facilities while promoting and preserving local culture. These positive impacts are further supported by the economic advantages derived from an increase in the number of visitors (Andereck et al. 2005; Deery et al. 2012; Ko and Stewart 2002). Nevertheless, it is essential to acknowledge the

potential adverse effects associated with inbound tourism, which encompass escalating living expenses and property prices, overcrowding, traffic congestion, and an increase in crime rates (Deery et al. 2012; Ko and Stewart 2002; Látková and Vogt 2012). To address this dual nature of tourism's impact, recent studies have examined the influence of factors on residents' perceptions of tourism as determinants key, such as community attachment (Gursoy et al. 2002; Látková and Vogt 2012), community involvement (Nicholas et al. 2009; Rasoolimanesh et al. 2017), environmental attitudes (Gursoy et al. 2002; Nicholas et al. 2009), cultural attitudes (Rasoolimanesh et al. 2017), and economic costs and benefits (Ko and Stewart 2002; Rasoolimanesh et al. 2015).

Citizen engagement in public policy plays a crucial role in shaping positive perceptions of tourism. The level of community attachment among residents significantly influences their attitudes toward tourism and their support for its development. Their active participation aligns with the core principle of sustainable tourism that emphasizes the involvement of local people and communities in tourism activities (Nagarjuna 2015). According to (Moghavvemi et al. 2017), residents with a strong sense of community attachment are more likely to be engaged and exposed to the impacts of tourism, making it an effective predictor of their attitudes towards tourism development. Additionally, community attachment provides a foundation for developing tourism offerings while also manifesting as a desire to preserve the existing state and protect heritage assets from damage or degradation (Cisneros-Martínez et al. 2018; MacKenzie and Gannon 2019).

The inclusion of citizens in the decision-making process not only contributes to the reverence for their traditional lifestyle and values but also to enhances the local economy (Timothy 1999; Lindberg and Johnson 1997; Sheldon and Abenoja 2001). By engaging in tourism activities, local communities can maximize the economic benefits (Inskeep 1991). In line with these findings, we propose the following hypotheses by considering the potential positive and negative impacts of citizen engagement in public policy on various aspects of tourism, including economic, cultural, and environmental factors:

Hypotheses 1 *Citizen engagement in public policy positively influences the economic benefit impact.*

Hypotheses 2 *Citizen engagement in public policy negatively influences the economic cost impact.*

Hypotheses 3 *Citizen engagement in public policy positively influences the cultural impact.*

Hypotheses 4 *Citizen engagement in public policy negatively influences the environmental impact.*

The perceptions of residents regarding tourism's cultural impact are strongly influenced by their environmental and cultural attitudes (Woosnam et al. 2018). Within this context, residents may develop a sense of ownership towards their local area and cultural heritage. Therefore, they express concerns about the environmental consequences resulting from the influx of tourists and the potential loss of their local culture (Cisneros-Martínez et al. 2018).

The level of attachment that residents feel towards their local area and cultural heritage can substantially impact their perception of the economic benefits derived from

tourism. As the economic benefits increase, residents tend to become more aware of the negative factors associated with tourism that might affect the environment and, consequently, their local living area. Several studies highlight that residents who perceive greater personal benefits from tourism tend to develop more positive attitudes towards it and are more inclined to support its growth and development (Jurowski et al. 1997; Lankford 1994; Liu et al. 1987; McGehee and Andereck 2004; Perdue et al. 1990; Wang and Pfister 2008). Accordingly, the following hypotheses is developed:

Hypotheses 5 *The cultural impact positively influences the economic benefit impact.*

Hypotheses 6 *The economic benefit impact negatively influences the environmental impact.*

Tourism often brings about an enhancement in the quantity and quality of recreational and entertainment facilities accessible to residents. From a socio-cultural standpoint, it can also contribute to the preservation of traditional arts and culture (Jaafar et al. 2017; Rasoolimanesh et al. 2017). Nevertheless, it is important to recognize that the socio-cultural impact of tourism development is not always exclusively positive. Negative consequences, such as noise and crime, have been frequently identified as issues associated with tourism (Beisle and Hoy 1980; Garland et al. 1985; Hammad et al. 2017; Haralambopoulos and Pizam 1996; Kang and Lee 2018). Furthermore, the environment is significantly affected by tourism development. While tourism revenue can enhance existing attractions and contribute to new investments in destinations (Perdue et al. 1987; Liu et al. 1987), there are adverse environmental consequences primarily observed during tourist influxes such as, overcrowding, traffic congestion, and pollution (Andereck et al. 2005; Mason 2020; Brida et al. 2011; Brunt and Courtney 1999; Liu et al. 1987). Considering the discussed aspects of tourism's impacts, it becomes evident that a relationship between the social costs associated with tourism and its environmental impact exists. Taking into account the preceding discussions, we formulated the following hypothesis:

Hypotheses 7 *The social cost impact positively influences the environmental impact.*

The impact of tourism on the economy, as perceived by residents, has been extensively studied, particularly in terms of personal economic benefits (Andereck et al. 2005; Lankford and Howard 1994; Lepp 2008; Milman and Pizam 1988; Pizam 1978). Tourism's economic effects can be positive, generating employment opportunities, attracting investments, and creating favorable conditions for small businesses (Abdollahzadeh and Sharifzadeh 2014; Garland et al. 1985; Hammad et al. 2017; Kang and Lee 2018; Liu et al. 1987). However, residents also recognize the economic costs associated with tourism (Beisle and Hoy 1980; Garland et al. 1985; Ryan and Montgomery 1994). Economic difficulties impact residents' perceptions and their willingness to support tourism development (Hateftabar and Chapuis 2020). Some of these costs include higher prices for goods and services due the imported inflation and rising demand (Bull 1991; Látková and Vogt 2012), as well as potentially rising taxes that government needs to finance costly tourism infrastructure (Stynes 1997). These costs are often perceived by residents due to inefficient management of tourist flow, positively impacting the social cost. In light of the previous considerations, the following hypothesis was developed:

Hypotheses 8 *The economic cost impact positively influences the social cost impact.*

Drawing from the aforementioned discussions, a theoretical path diagram has been proposed to establish a connection between six dimensions (i.e., citizen engagement in public policy, economic benefit impact, economic cost impact, cultural impact, social cost impact, and environmental impact) to study their relations and obtain a comprehensive understanding of resident perceptions of tourism (Fig. 1).

3 Research methodology

A structured questionnaire was administered to Naples' citizens between December 2022 and January 2023 through mixed modes (CAWI and CAPI). The questionnaire consisted of two filtering questions to determine if the respondents were residents of the city or had lived (studied or worked) in Naples. These questions were designed to streamline the data collection process and ensure participants had genuine knowledge and engagement with the city beyond their residential status.

The questionnaire was divided into six sections to measure different aspects of residents' perceptions of tourism in the city. The first two sections focused on the economic benefit and cost of tourism respectively. The second section assessed the negative environmental effects of tourism, including cultural heritage preservation, waste management, pollution, and loss of green spaces. The third section examined the positive cultural effects of tourism, such as fostering cultural pride and preserving local traditions and identity. The fourth section investigated the social cost of tourism, including vandalism and crime rates. The last section focused on political considerations and priorities related to tourism development, including the involvement of regional authorities, citizen participation, and improvement areas. Participants rated their agreement with statements using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

The questionnaire included also a section on socio-demographic characteristics such as gender, age, and education level. In addition, participants were also asked about their employment status, if they worked in the tourism industry, and the Naples municipality of residence in which they reside. Students from the Faculties of Engineering and Economics of the University of Naples Federico II assisted in distributing the questionnaires.

Out of 3017 distributed questionnaires, 2563 valid responses were received from residents, resulting in an 85% response rate. In Table 1, the scale items used to measure each construct in the theoretical model are presented.

4 Modelling process

The appropriate statistical approach to estimate our theoretical model is Structural Equation Modeling (SEM).

SEM includes two primary families of techniques: covariance-based techniques, exemplified by Joreskog's Linear Structural Relations (LISREL), and variance-based techniques, where Partial Least Squares Path Modeling stands out as the preeminent representative.

SEM comprises two essential components: the measurement model (outer model) and the structural model (inner model). The measurement model specifies the relationships between latent variables and their corresponding indicators or items. Conversely, the

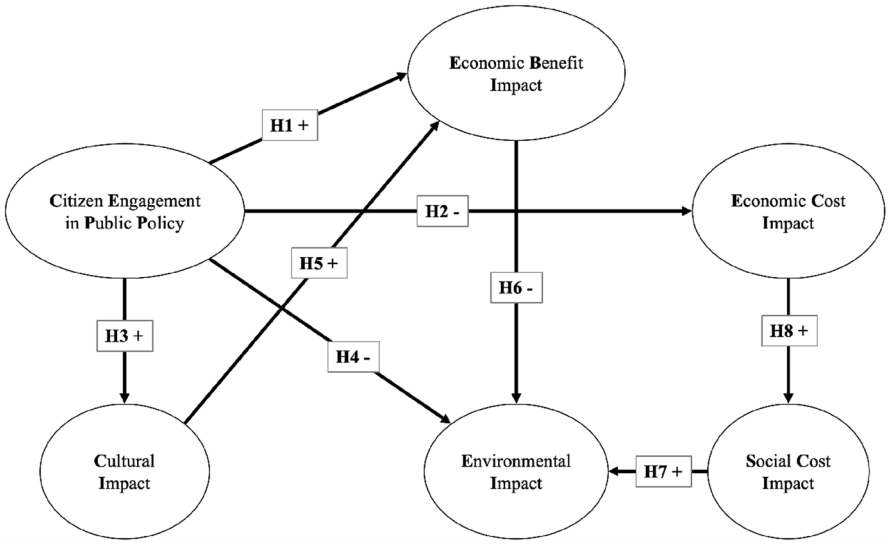

Fig. 1 Theoretical path diagram

structural model delineates the relationships between the theoretical constructs or latent variables (Nunkoo et al. 2013; Nunkoo and Ramkissoon 2012b). To avoid hypotheses on data distribution and sample size, we employed the non-parametric approach PLS-SEM (Wold 1975) to assess our theoretical model. PLS-SEM works with small sample sizes, does not require distributional assumptions, and exhibits a high level of statistical power (Hair Jr et al. 2014) estimating both reflective and formative items (Götz et al. 2009). In addition, PLS-SEM has been applied across various research domains, including project management, knowledge management, information systems, transportation, customer satisfaction, and tourism (Ciavolino et al. 2022; Aria et al. 2018; Memon et al. 2019; Ciavolino et al. 2015; Aria and Sacco 2023; Cepeda-Carrion et al. 2018; Cheah et al. 2019; Hong et al. 2023; Pagliara et al. 2023, 2021; Hamid et al. 2023).

In this study, we employed a two-step approach: (i) an exploratory analysis to investigate the latent structures underlying the dimensions of tourism's impact on the residents of Naples; (ii) confirmatory composite analysis (CCA) within the PLS-SEM framework to validate the scales used for measuring each dimension (Ciavolino et al. 2022). CCA is a relatively new and emerging method for confirming the measurement model in the context of PLS-SEM (Hair et al. 2019; Henseler et al. 2016; Schuberth et al. 2018). We employed a reflective model for all constructs when estimating PLS-SEM, in alignment with Nunkoo's research (Nunkoo 2015; Nunkoo et al. 2012). The analyses were performed using the SEMinR R package version 2.3.2 (Hair Jr et al. 2021) and SmartPLS software version 4.0.9 (Ringle et al. 2015).

5 Results

5.1 Sample description

The sample analyzed in this study included 2563 residents of Naples, with 47.6% women and 50.41% men. Most of the respondents fell between 18-44 years old (57.63%), while

Table 1 Measurement scales

Constructs	Scale items
Citizen engagement in public policy (CEPP)	1 = strongly disagree; 5 = strongly agree
The Campania Region takes care of the collective interest with regard for a tourism development purpose in the city of Naples	
It is considered necessary for institutions responsible for tourism planning to adequately address the relationship between the needs of residents and tourism development	
The voice of Naples' citizens is essential in the decisions making of local administrations regarding tourism	
The restructuring and revitalization of the Mostra d'Oltremare (exhibition center) are deemed necessary	
The improvement of airport, port, central station infrastructure, and their connections to the city center is considered necessary	
Economic cost impact (ECI)	1 = strongly disagree; 5 = strongly agree
The price of goods and services has increased due to tourism	
The price of real estate has increased due to tourism	
I assume that the Municipality of Naples is currently investing in the sector with the tourist tax that visitors pay	
It is increasingly difficult to find residential apartments because they are converted into lodging establishments (B &Bs, guesthouses)	
Economic benefit impact (EBI)	1 = strongly disagree; 5 = strongly agree
Tourism brings significant economic benefits to the city	
Local businesses and activities in the city benefit economically from tourism	
Tourism increases job opportunities for citizens	
Cultural impact (CI)	1 = strongly disagree; 5 = strongly agree
Tourism has increased the cultural pride of the residents	
Tourism contributes to keep the local Neapolitan culture alive	
Tourism contributes in maintaining the cultural identity of the Neapolitan citizens.	
Meeting tourists from all over the world is a positive life experience.	
Tourism helps preserve local festivals and traditions	
Thanks to tourism, the number of art exhibitions and theatrical performances has increased in the city	
Tourism supports the conservation of archaeological sites in the city	
Social cost impact (SCI)	1 = strongly disagree; 5 = strongly agree
Tourism increases acts of vandalism in the city	
Tourism contributes to the growth of crime in the city	

Table 1 (continued)

Constructs	Scale items
Tourism causes overcrowding on pedestrian routes in the city	
Tourism causes overcrowding in recreational facilities (bars, restaurants, theaters)	
Tourism causes overcrowding in public transportation in the city	
Tourism negatively impacts the quality of public services.	
Environmental impact (EI)	1 = strongly disagree; 5 = strongly agree
Tourism damages the archaeological sites and monuments of the city	
Regarding hotels, restaurants, and bars in Naples, tourism has led to an increase in waste production	
The waste resulting from tourism ruins the beauty of the city	
Tourism increases noise pollution in the city.	
Air and vehicular traffic resulting from tourism damages the air quality of the city	
The numerous maritime connections worsen the water quality in the port area of the city	
Tourist development has contributed to the loss of numerous green spaces in the city	
I believe that due to tourism, there is a greater waste of food and energy resources	

only 0.55% were over 85 years old. The 25.32% of participants held a degree, while 22.32% completed middle school. The largest percentage of respondents (33.63%) were employed, followed by students (15.33%), and retirees (7.84%). Only 14.05% of the participants worked in the tourism industry, while the remaining 85.95% did not. To assess the general perception of tourism in Naples, participants were asked whether they perceived it as a cost or a benefit. The findings revealed that a substantial majority (95.67%) of respondents viewed tourism in Naples as a benefit.

To investigate potential differences in perceptions of tourism development across different areas of Naples, respondents were asked to indicate which of the 10 municipalities they resided. By examining the questionnaire response rate in each district, it was found that approximately 10% of the residents in each area responded, indicating a balanced distribution of responses across the city.

5.2 Examining the structural model

Six Principal Component Analyses (PCAs) were conducted on the items of each reflective construct to assess their unidimensionality (Hair et al. 2010). The eigenvalues of the first two components are presented in Table 2, providing confirmation that the unidimensionality of each construct has been successfully validated.

Table 2 PCA results: eigenvalues of the first and second component

Construct	Eig. 1	Eig. 2
CEPP	2.072	0.974
ECI	2.507	0.718
EBI	2.206	0.480
CI	4.335	0.808
SCI	3.605	1.272
EI	4.654	1.138

To evaluate the theoretical model, two primary steps were taken. The first step involved performing CCA on the measurement model.

This initial phase focused on assessing the indicator loadings and their significance, resulting in standardized loadings ranging from 0.4 to 0.708 (Hulland 1999). According to (Hair et al. 2017), it is recommended to exclude reflective indicators that have a loading below 0.4. In line with the principles of PLS, it is logical to eliminate an indicator only if it exhibits limited reliability and its removal would significantly improve the composite reliability (Pagliara et al. 2021). Furthermore, the significance of each loading was assessed using bootstrapping procedures (Hair et al. 2012). The associated t-statistic should exceed ± 1.96 for significance in a two-tailed test at the 5% level. Based on the above, the item CEPP1 was subsequently removed due the loading value below the threshold of 0.4 and the model was restimated. Results are presented in Table 3.

Then, the assessment of reliability and validity of the measurement model was evaluated. Reliability was measured by the traditional criterion of Cronbach's α, an internal consistency index assuming that all indicators are equally reliable (i.e., equal outer loadings on the construct). An internal consistency reliability value greater than 0.7 in the early stages of research and values greater than 0.8 or 0.9 in more advanced stages of research are considered satisfactory (Henseler et al. 2016), whereas a value below 0.6 indicates poor reliability. Nevertheless, Cronbach's α is sensitive to the number of items in the scale and generally underestimates the internal consistency reliability. Hence, it is more appropriate to apply two different measures of composite reliability, that is, Jöreskog's ρ_C (Werts et al. 1974) and the Dijkstra–Henseler's ρ_A ones (Dijkstra and Henseler 2015). For the model validity, two complementary aspects are considered: the convergent validity and the discriminat validity. The first one evaluates how much a set of indicators represents the same underlying construct. The second one evaluates how much a construct is truly distinct from the other constructs of the model. To assess convergent validity, Fornell and Larcker (Fornell and Larcker 1981b) suggest using the Average Variance Extracted (AVE). An AVE value of 0.50 or higher indicates sufficient convergent validity, meaning that the construct can explain more than half of the variance of its indicators on average. Conversely, an AVE of less than 0.50 indicates that, on average, more error remains in the items than the variance explained by the construct.

As reported in Table 4, the composite reliability and Cronbach's α values validate a strong internal consistency across all constructs. Acceptance of all model reliability values and confirmation of convergent validity for all constructs are evident as indicated by the AVE values surpassing 0.5 of responses across the city.

Discriminant validity was assessed using three measures: (i) the Fornell and Larcker criterion, (ii) the Heterotrait-monotrait (HTMT) ratio of correlations, and (iii) cross-loading. The Fornell-Larcker criterion, as explained by Fornell and Larcker (Fornell and

Table 3 Assesment of indicators: loadings and confidence intervals

Construct	Indicators	Loadings	Standard bootstrap results			Percentile bootstrap quantiles	
			Standard error	t-value	*p*-value	2.5%	97.5%
CEPP	CEPP2	0.662	0.021	31.891	< 0.001***	0.616	0.699
	CEPP3	0.557	0.041	13.710	< 0.001***	0.473	0.629
	CEPP4	0.824	0.015	54.314	< 0.001***	0.791	0.853
	CEPP5	0.802	0.021	37.410	< 0.001***	0.756	0.841
ECI	ECI1	0.850	0.008	100.245	< 0.001***	0.832	0.865
	ECI2	0.842	0.010	80.666	< 0.001***	0.821	0.862
	ECI3	0.715	0.018	40.418	< 0.001***	0.677	0.748
	ECI4	0.729	0.016	46.774	< 0.001***	0.698	0.758
EBI	EBI1	0.875	0.009	101.232	< 0.001***	0.856	0.889
	EBI2	0.859	0.009	97.554	< 0.001***	0.841	0.876
	EBI3	0.837	0.009	91.667	< 0.001***	0.818	0.854
CI	CI1	0.735	0.014	51.750	< 0.001***	0.705	0.759
	CI2	0.818	0.011	76.630	< 0.001***	0.795	0.838
	CI3	0.840	0.009	88.421	< 0.001***	0.819	0.857
	CI4	0.710	0.015	45.910	< 0.001***	0.678	0.739
	CI5	0.841	0.009	89.040	< 0.001***	0.821	0.858
	CI6	0.772	0.013	59.786	< 0.001***	0.746	0.796
	CI7	0.777	0.013	59.247	< 0.001***	0.749	0.801
SCI	SCI1	0.619	0.015	40.378	< 0.001***	0.586	0.647
	SCI2	0.667	0.014	48.204	< 0.001***	0.638	0.691
	SCI3	0.799	0.009	86.176	< 0.001***	0.780	0.816
	SCI4	0.861	0.007	122.271	< 0.001***	0.845	0.874
	SCI5	0.852	0.008	112.743	< 0.001***	0.836	0.865
	SCI6	0.819	0.007	114.186	< 0.001***	0.803	0.832
EI	EI1	0.597	0.015	38.937	< 0.001***	0.565	0.626
	EI2	0.632	0.017	36.899	< 0.001***	0.597	0.662
	EI3	0.832	0.008	107.218	< 0.001***	0.816	0.846
	EI4	0.870	0.005	181.473	< 0.001***	0.860	0.879
	EI5	0.862	0.006	154.247	< 0.001***	0.850	0.872
	EI6	0.801	0.009	90.542	< 0.001***	0.781	0.816
	EI7	0.722	0.012	58.830	< 0.001***	0.696	0.744
	EI8	0.735	0.012	63.356	< 0.001***	0.711	0.756

*Indicates that the indicator loading is significant ($p \leq 0.05$.), **($p \leq 0.01$) or ***($p \leq 0.001$) using bootstrap procedure with 1000 replications

Larcker 1981a), evaluates discriminant validity by comparing the amount of variance captured by a construct (AVE) with the shared variance among other constructs. The square root of the AVE for each construct should exceed the correlation involving the constructs. The HTMT, proposed by (Henseler et al. 2016), examines validity through the ratio of heterotrait correlation (HT) to monotrait correlations (MT) for each construct. Heterotrait correlation represents the average correlations of indicators across

Table 4 Evaluation of the measurement model: Reliability and Validity of constructs

Construct	Dijkstra–Henseler's rho (ρ_A)	Joreskog's rho (ρ_C)	Cronbach's alpha (α)	Average variance extracted (AVE)
CEPP	0.718	0.807	0.684	0.518
ECI	0.811	0.866	0.796	0.618
EBI	0.820	0.892	0.819	0.735
CI	0.898	0.919	0.896	0.618
SCI	0.872	0.899	0.863	0.600
EI	0.912	0.916	0.895	0.581

constructs that measure different phenomena, while monotrait correlations are the correlations of indicators within the same construct. A suggested threshold for this measure is 0.90. The third criterion assumes that each indicator's loading should surpass all of its cross-loadings (Chin et al. 1998). This criterion emphasizes that each indicator should have a stronger association with its corresponding construct than with other constructs. Findings provided in Table 5 (Fornell and Larcker criterion), Table 6 (HTMT ratio of correlations), and Table 7 (Cross-loadings) indicate that discriminant validity is established according to all three criteria.

After assessing the measurement model for reliability and validity, the second step involved testing the structural model. The goodness of fit of the PLS-SEM structural model reflects the disparity between observed values and the expected values based on the model. A fundamental criterion for evaluating the structural or inner model is

Table 5 Discriminant validity assessment (Fornell and Larcker criterion): squared correlations between constructs

Construct	CEPP	ECI	EBI	CI	SCI	EI
CEPP	0.718					
ECI	− 0.253	0.785				
EBI	0.243	0.084	0.857			
CI	0.419	− 0.068	0.478	0.786		
SCI	0.212	0.227	− 0.063	0.208	0.733	
EI	0.038	0.429	− 0.101	0.071	0.759	0.763

Diagonal elements represent AVE

Table 6 Discriminant validity assessment (Heterotrait–Monotrait Ratio of Correlations -HTMT)

Construct	CEPP	ECI	EBI	CI	SCI	EI
CEPP						
ECI	0.356					
EBI	0.323	0.101				
CI	0.527	0.191	0.554			
SCI	0.386	0.298	0.185	0.343		
EI	0.355	0.506	0.140	0.192	0.849	

Table 7 Discriminant validity assessment (Cross-Loadings)

Indicators	CEPP	ECI	EBI	CI	SCI	EI
CEPP2	0.662	– 0.174	– 0.172	0.260	0.126	0.011
CEPP3	0.557	0.002	– 0.112	0.320	0.365	0.337
CEPP4	0.824	– 0.265	– 0.210	0.336	0.045	– 0.049
CEPP5	0.802	– 0.292	– 0.207	0.277	– 0.032	– 0.155
ECI1	– 0.226	0.850	– 0.080	– 0.054	0.245	0.373
ECI2	– 0.230	0.842	– 0.043	– 0.154	0.130	0.286
ECI3	– 0.223	0.715	– 0.097	0.079	0.237	0.362
ECI4	– 0.176	0.729	– 0.014	– 0.160	0.089	0.208
EBI1	– 0.133	– 0.106	0.875	– 0.380	0.182	0.155
EBI2	– 0.268	– 0.034	0.859	– 0.406	0.055	0.075
EBI3	– 0.234	– 0.074	0.837	– 0.446	0.007	0.025
CI1	0.237	0.041	– 0.386	0.735	0.100	0.083
CI2	0.262	– 0.029	– 0.427	0.818	0.029	– 0.012
CI3	0.298	– 0.071	– 0.388	0.840	0.148	0.081
CI4	0.405	– 0.191	– 0.419	0.710	– 0.056	– 0.142
CI5	0.344	– 0.049	– 0.357	0.841	0.198	0.140
CI6	0.336	0.007	– 0.284	0.772	0.276	0.230
CI7	0.341	– 0.063	– 0.359	0.777	0.173	0.108
SCI1	– 0.078	0.322	0.110	– 0.053	0.619	0.467
SCI2	– 0.058	0.292	0.091	– 0.038	0.667	0.481
SCI3	0.162	0.178	0.057	0.101	0.799	0.593
SCI4	0.218	0.123	0.047	0.182	0.861	0.645
SCI5	0.199	0.109	0.027	0.238	0.852	0.638
SCI6	0.148	0.137	0.098	0.204	0.819	0.713
EI1	– 0.272	0.527	0.131	– 0.141	0.399	0.597
EI2	0.079	0.279	– 0.021	0.026	0.468	0.632
EI3	0.118	0.232	0.076	0.126	0.686	0.832
EI4	0.154	0.194	0.072	0.165	0.751	0.870
EI5	0.142	0.184	0.053	0.169	0.698	0.862
EI6	0.088	0.201	0.044	0.127	0.615	0.801
EI7	– 0.247	0.531	0.134	– 0.046	0.484	0.722
EI8	– 0.197	0.543	0.118	– 0.085	0.486	0.735

the coefficient of determination (R^2) of the dependent or endogenous latent variables. According to Chin (Chin et al. 1998), R^2 values of 0.67, 0.33, and 0.19 in PLS-SEM path models can be considered substantial, moderate, and weak, respectively. If the inner path model explains an endogenous latent variable using only a few independent or exogenous latent variables (e.g., one or two), a "moderate" R^2 value may be deemed acceptable. The R^2 values for all endogenous latent variables are presented in Table 8.

Additionally, Table 9 provides the estimation of the path coefficients, while Fig. 2 visually represents the tested model with the b coefficients and R^2 values. The individual path coefficients can be interpreted as linear bivariate correlation coefficients, similar to the standardized beta coefficients in ordinary least square regressions. A p-value of ≤ 0.05 indicates that the coefficient significantly deviates from zero. Structural paths that align

Table 8 Structural model assessment: R Squares

Construct	R^2	Strength
EI	0.603	Moderate
EBI	0.235	Weak
CI	0.167	Weak
ECI	0.076	Low
SCI	0.057	Low

Table 9 Structural model assessment: direct effects

Effect	*b*	Standard bootstrap results			Percentile bootstrap quantiles		Results
		Standard error	*t*-value	*p*-value	2.5%	97.5%	
H1: CEPP → EBI (+)	− 0.063	0.024	2.591	0.010**	− 0.111	− 0.017	Rejected
H2: CEPP → ECI (−)	− 0.276	0.025	11.222	< 0.001**	− 0.324	− 0.227	Supported
H3: CEPP → CI (+)	0.409	0.022	18.922	< 0.001**	0.369	0.454	Supported
H4: CEPP → EI (−)	− 0.100	0.019	5.327	< 0.001**	− 0.136	− 0.064	Supported
H5: CI → EBI (+)	− 0.455	0.027	16.723	< 0.001**	− 0.506	− 0.402	Rejected
H6: EBI → EI (−)	0.000	0.016	0.007	0.994	− 0.031	0.033	Rejected
H7: SCI → EI (+)	0.784	0.010	79.278	< 0.001**	0.764	0.802	Supported
H8: ECI → SCI (+)	0.240	0.020	12.258	< 0.001**	0.201	0.277	Supported

*Indicates that a direct effect between the two constructs is significant ($p \leq 0.05$.), ** ($p \leq 0.01$) or *** ($p \leq 0.001$) using bootstrap procedure with 1000 replications

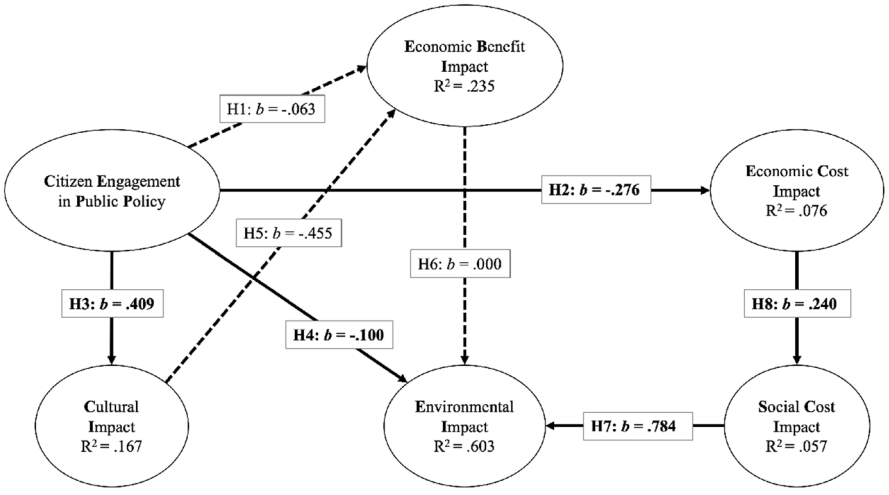

Fig. 2 Structural model estimation displaying *b* coefficients and R^2 values. Dashed path indicates a non-significant relationship between two constructs. Supported hypotheses are in bold. Source: Authors' elaboration

with the anticipated algebraic signs offer partial empirical validation of the theoretically assumed relationships between latent variables. On the other hand, paths with algebraic signs contrary to expectations do not support the a priori formulated hypotheses. To determine the statistical significance of the results, confidence intervals and *p*-values for path coefficients were obtained using the bootstrap procedure (Tenenhaus et al. 2005).

6 Discussion of results

In this study, a model was developed to assess residents' perceptions regarding tourism development in the city of Naples. This type of evaluation requires latent variable models, specifically PLS-SEM. Firstly, the results support the hypothesis that citizen engagement in public policy has a negative influence both on the economic cost impact (H2) and environmental impact (H4). In addition, citizen engagement in public policy has a positive influence on the cultural impact (H3). Secondly, the study finds that economic cost impact positively influences the social cost impact (H8). In addition, findings show that the social cost impact positively influences the environmental impact (H7).

On the other hand, several hypotheses were rejected. The study did not find a significant positive relationship between citizen engagement in public policy and economic benefit impact (H1). Similarly, the hypothesis regarding the positive influence of cultural impact on economic benefit impact (H5) was not supported. Finally, no significant positive relationship between economic benefit impact and environmental impact (H6) was verified.

7 Conclusions

Community residents, as important stakeholders, are significantly affected by tourism activities and play a crucial role in tourist destinations. Their perceptions are essential for crafting effective tourism strategies. Without the support and engagement of the local community, achieving sustainable tourism remains elusive (Lee and Jan 2019; Nunkoo et al. 2013). Thus, understanding residents' perspectives on tourism is fundamental to establishing a solid foundation for responsible tourism planning (Sharpley 2014).

Our findings provide valuable insights into citizens' participation in public policy. While Hypothesis 1 was rejected, indicating no significant association between residents participation and increased economic benefits, the other three hypotheses were all confirmed. Notably, Hypothesis 3, with a substantial path coefficient value (b =.409), suggests that citizens' engagement in public policy positively influences cultural attitudes. When residents are actively involved in decision-making processes to manage tourism impacts, there is a significant increase in their cultural appreciation. This, in turn, strengthens their cultural pride and contributes to the preservation of local festivals, traditions, and attractions. The study highlights the importance of citizen involvement in implementing tourism policies and their role in safeguarding the cultural heritage of the community. Results of Hypothesis 2 and Hypothesis 3 support the positive impact of resident involvement in policymaking. This active participation can lead to a reduction in the negative economic cost (b=−.276) and the negative effects on the environment (b=−.100) associated with tourism. Through active participation in public policy, residents actively contribute to identifying and implementing measures that effectively mitigate the economic costs associated with tourism. Furthermore, their commitment and focus on these issues catalyze the creation

of services and initiatives aimed at reducing the adverse environmental impacts within the local community.

Our study also highlights the significant association between social costs and environmental impact. A robust association between social costs and environmental impact was observed, as evidenced by the high path coefficient value (b =.798), strongly confirming Hypothesis 7. Acts of vandalism, rising crime rates, and overcrowding in local areas experienced by residents contribute to amplifying the negative effects of tourism on the environment. Essentially, as incurred costs increase, the likelihood of initiating policies to protect the local environment and preserve community well-being effectively decreases. Furthermore, Hypothesis 8 was confirmed, suggesting that an increase in economic costs inevitably leads to an increase in social costs (b=.240). These significant insights shed light on the intricate relationship between social costs, environmental impact, economic costs, and tourism development.

Moreover, the importance of implementing sustainable policies and practices to address the social and environmental costs associated with tourism is evident. The implications of this study hold significant value for public administrations as they gain valuable insights into adopting effective strategies. These strategies are designed to address the impact of tourism on residents and mitigate any adverse effects.

Accordingly, the estimation of the indirect effects presented in Table 10 highlights the crucial roles played by economic cost impact and social cost impact as mediators in the context of tourism development, emphasizing two key aspects:

1. *The importance of involving citizens' in public policy for decision-making.*

   A significant indirect relationship links citizen engagement in public policy with social cost impact through economic cost impact. This finding highlights a meaningful association between these variables within the model. Specifically, the negative coefficient ($b = -.066$) suggests that an increase in citizen engagement in public policy is associated with a decrease in economic cost impact, which, in turn, leads to a decrease in social cost impact. When citizens are actively engaged in public policy related to tourism, there is a potential to reduce the economic costs associated with tourism meaning that their engagement have a say in cost-effective policies or regulations, resulting in more efficient resource allocation. The negative relationship between economic cost and social cost suggests that as the economic cost impact decreases due the involvement of

Table 10 Structural model assessment: indirect effects

Effect	b	Standard bootstrap results			Percentile bootstrap quantiles		Results
		Standard error	t-value	p-value	2.5%	97.5%	
CEPP → ECI → SCI	− 0.066	0.007	9.609	< 0.001***	− 0.080	− 0.053	
CEPP → EBI → EI	0.000	0.001	0.007	0.995	− 0.002	0.003	
CI → EBI → EI	0.000	0.007	0.007	0.994	− 0.015	0.014	
CEPP → CI → EBI	− 0.186	0.014	13.293	< 0.001***	− 0.216	− 0.160	
ECI → SCI → EI	0.188	0.016	11.731	< 0.001***	0.155	0.219	
CEPP → CI → EBI → EI	0.000	0.003	0.007	0.994	− 0.006	0.006	
CEPP → ECI → SCI → EI	− 0.052	0.005	9.487	< 0.001***	− 0.063	− 0.042	

* Indicates that a indirect effect between the two constructs is significant ($p \leq 0.05$.), ** ($p \leq 0.01$) or *** ($p \leq 0.001$) using bootstrap procedure with 1000 replications

residents in decision-making processes, the social cost impact also decreases. In practical terms, if tourism-related economic costs are managed more effectively, there may be fewer negative social consequences for the community. For instance, fewer economic costs might translate to reduced congestion, pollution, or strain on public services, all of which contribute to lower social costs. Then, a significant indirect relationship between citizen engagement in public policy and environmental impact through a sequential path involving economic cost impact and social cost impact was emerged.The negative coefficient ($b = -.052$) implies that as citizen engagement in public policy increases, it leads to a decrease in cconomic cost, which, in turn, leads to a decrease in social cost, and ultimately results in a decrease impact on the environment. Actively involving citizens can not only lead to economic savings but also have a positive impact on both social and environmental aspects. It emphasizes the potential for tourism policies to be designed and implemented in ways that contribute to sustainability across multiple dimensions These findings imply that actively involving citizens in public policy related to tourism can have a positive influence not only on economic aspects but also on social well-being. Engaging citizens may lead to more efficient and sustainable tourism practices, ultimately benefiting both the local economy and the quality of life for residents.

2. *The significance of monitoring and addressing negative environmental, economic, and social impacts.*

   Concerning the relationship between economic cost impact and environmental impact through social cost impact, the positive coefficient ($b = .188$) suggests that an increase in economic cost leads to an increase in social cost, which, in turn, leads to an increase in environmental impact. The economic costs are associated with tourism increase, leading to higher social costs. They include expenses related to infrastructure development, maintenance, and services required to support tourism. As these costs rise, they can contribute to social burdens such as congestion, increased pollution, or a strain on public resources. The positive relationship between social cost impact and environmental impact suggests that increased social costs, potentially arising from higher economic costs, are linked to more significant environmental consequences. This implies that as social costs related to tourism rise, there is a corresponding increase in environmental impacts, including pollution or habitat disruption. Policymakers and stakeholders need to consider the potential ripple effects of economic policies on both social well-being and the environment. Balancing economic growth with social and environmental sustainability is a complex challenge in the tourism sector.

In summary, residents' awareness of tourism's diverse impacts significantly affects their daily lives. They desire active participation in public initiatives to mitigate these effects, which fosters greater attention, care, and commitment. This, in turn, contributes to the preservation of their territory and culture. Public administrations can proactively work to preserve the well-being and cultural heritage of local communities while ensuring a sustainable and positive tourism experience for all stakeholders involved.

8 Limitations and further perspectives

This study has several limitations that allow further attention in future work. Potential other key variables that may influence residents' perceptions of tourism's impact on supporting tourism will be integrated into the proposed model. Future studies could delve into

in-depth interviews or focus groups to identify additional factors in this model and examine their role in this relationship. Moreover, it would be valuable to include perspectives from different interviews such as immigrants or individuals strongly linked to the tourism sector. By incorporating these diverse viewpoints, a more comprehensive understanding of the topic can be achieved, allowing the results to extend beyond the scope of this study. Furthermore, to gain deeper insights into the perceptions of residents regarding the impact of tourism, it may be worthwhile to assess potential heterogeneity in the data based on socio-demographic characteristics. Evaluating how these factors influence residents' attitudes can help to understand how different segments of the population are affected by tourism. For instance, delving into variables such as gender, age, or educational background can shed light their potential influence on residents' perceptions of tourism's impact and how these factors might shape their overall viewpoint regarding tourism. An investigation into these dimensions of heterogeneity has the potential to uncover notable disparities in resident attitudes, providing valuable insights that can inform the development of precisely targeted policy interventions.

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Declarations

Conflict of interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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