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Residents' attitudes towards tourism development: evaluation and management in Matera city destination

Pasquale Sarnacchiaro[1] · Roberto Micera[2] · Biagio Simonetti[3,4] · Raffaela Ciuffreda[3]

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Abstract
This study investigates residents' perceptions of tourism impact in Matera and their profiles based on socio-demographic attributes. A questionnaire has been designed to assess how these personal features influence the residents' attitudes considering environmental, economic, and socio-cultural factors. The survey has been submitted to a stratified sample of 250 Matera residents, and the Structural Equation Model was implemented to examine the relationships involved in the research model.

Keywords Tourism impact · Resident's perception · Structural equation model

1 Introduction

Residents' perception of tourism is crucial in tourism development, as it influences its hospitality, development, and sustainability. Tourism growth stimulates community building, inspires new businesses, attracts investments, and improves the supply of services by the public sector. Furthermore, it is important to enhance countries' images in relations with other countries and to lead the fight against racism and intolerance. Considering the above-listed benefits, tourism development is usually synonymous with economic expansion. Many researchers are focusing on studying the tourism impact in terms of residents' perceptions. The increasing attention to this topic is considered relevant because, despite all the benefits, tourism has potentially negative effects on host communities. Therefore, the need arises to evaluate it in order to manage the tourism growth in local sites (Ko and Stewart, 2002; Lankford and Howard, 1994). Native communities often are not engaged in tourism decision-making processes and consider their areas exploited in a non-sustainable way. In order to give them a voice, the question arises as to how residents' perceptions can be assessed and how the resulting measurement can be used in decision-making processes.

✉ Biagio Simonetti
simonetti@unisannio.it

[1] University of Naples Federico II, Naples, Italy

[2] University of Basilicata, Potenza, Italy

[3] University of Sannio, Benevento, Italy

[4] WSB Merito Universities, Gdańsk, Poland

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Sustainability in tourism has been a topic of discussion for several years. The UNWTO has defined sustainable tourism as 'tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities' and, additionally, they emphasise that an equilibrium between environmental, economic, and social-cultural dimensions is essential to ensure lasting sustainability. An essential element in achieving this balance is the participation of local communities in policy-making processes (Garcìa et al. 2015). The paper is focused on the city of Matera area and aims to understand the residents' perceptions of tourism concerning the three above dimensions, economic, environmental, and socio-cultural and how these perceptions impact the destination development process. Tourism development in Matera is expected to touch the everyday life of those living in the city and influence their perceptions of the impacts of tourism in their communities. The growing number of tourists increases the use of natural resources, generates socio-economic impacts and causes stress on facilities. Tourists increasingly use services created to meet the needs of citizens. In addition, online accommodation platforms are becoming more popular and this could increase the number of tourist accommodations and decrease homes available for long-term rental, creating resentment among inhabitants. Tourism can be considered sustainable if it possible to find a balance between residents' communities and tourist needs. This can be reached engaging citizens, managing the tourist flows, decreasing seasonality and creating services diversification. It is important to understand residents' approach towards tourism to guarantee the development of successful sustainable tourism strategies.

2 Theoretical framework and hypotheses

In this section, we define tourism impact from a theoretical perspective and define a conceptual model outlining the determining factors and the relationship between them and tourism impact.

Many studies on the impact of tourism have focused on the economic, socio-cultural and environmental aspects, defining positive and negative aspects, so that residents perceive that tourism growth brings benefits and costs to their community (Díaz and Gutiérrez 2010; Gursoy and Rutherford 2004). Residents' perceptions capture the interest of many researchers, primarily in the USA (Kim et al. 2013; Andereck et al. 2007) and Japan (Miyakuni 2012; Zamani-Farahani and Musa 2008). Most researchers focus on the impacts of tourism affecting the three above dimensions, economic, socio-cultural and environmental (Almeida-García et al. 2015; Choi and Kim 2013; Long and Kayat 2011). Social and cultural aspects are jointly measured using a single socio-cultural variable (Fredline et al. 2003; King et al. 1993). The study of residents' perceptions of tourism is gaining importance (Rasoolimanesh et al. 2017). In popular tourist destinations, rising arrivals influence residents' daily lives and change their life quality (Kim et al. 2013). Considering the mentioned effects, the hypothesis is that residents' perceptions hinder tourism development (Rasoolimanesh et al. 2017; Andereck et al. 2007; Látková and Vogt 2012). Residents are the direct players in sustainable tourism development (Lundberg 2011) because they interact with tourists, and their hospitality is influenced by the perceptions they originate. Comprehending residents' perceptions of tourism impact provides crucial information for people who play a valuable role in tourism strategies and services implementation (Brida et al. 2010).

As theoretical framework, the model implemented by Doxey (1975) seeks to deploy or forecast the residents' attitudes as a function of the tourist number increasing in a destination. Doxey associates the development of tourism with the locals' feelings that evolve. At first, they feel euphoria and empathy, but later they can turn into annoyance and antagonism. Setting away the criticisms and extensions of these models, some researchers assume that tourism growth, as measured by the increase in the number of tourists, is associated with tourism-related reactions.

Therefore, we can have two types of effects linked to the impact of tourism. Considering the benefits, tourism can increase job opportunities for residents (Andereck and Nyaupane 2011; Diedrich and García 2009), raise the life quality of locals, and preserve monuments, artistic heritage and local culture (Andereck et al. 2005). Adverse impacts, on the other hand, include environmental, economic and socio-cultural aspects, such as overuse of public and leisure facilities, traffic congestion and crowded parking areas (Sheldon and Abenoja 2001); significant ecological damage and significant rise in wastage and pollution (Andereck et al. 2005; McGehee and Andereck 2004). These tourism-related disadvantages may lead residents to create negative perceptions of tourism. Interest in cons has increased since the 1980s (Jurowski and Gursoy 2004; Lankford 1994; Liu and Var 1986; Long et al. 1990; Nunkoo and Gursoy 2012) because they can be an obstacle for touristic destinations in their development and sustainability (Ap 1992; Butler 1980; Diedrich and García 2009). Residents' antagonistic behaviour against tourists could restrict the growth of tourism; instead, a friendly approach could be beneficial for tourism expansion. In most cases, tourists hesitate to travel to places they do not feel welcome (Yoon et al. 1999). Consequently, residents' approval is crucial for developing tourism (Butler 1980; Dyer et al. 2007).

Academics consider important to include residents monitoring at an early stage in the development of tourism strategies (Liu et al. 1987). Analysis of locals' attitudes is essential to evaluate their perceptions, and this should be integrated with tourism planning. Understanding residents' perceptions can lead to decisions that minimise the disadvantages and maximise the positive impacts (Garcìa et al. 2015). Residents' contribution to decision-making can facilitate the creation of positive attitudes regarding the tourism (Robson and Robson 1996). Local policy initiatives on sustainability and tourism development can be more effective if local communities could voice their needs and if they could gain more economic, social and environmental returns (D'Amore 1983; Marien and Pizan 2005).

Researchers have conducted studies on the impacts of tourism, considering the pros and cons of effects on economic, socio-cultural and environmental (Almeida García et al. 2015; Stylidis et al. 2014). Benefits for economic and socio-cultural effects of tourism growth are new job opportunities, improved incomes, living standards and public services, and accessibility to commodities and facilities (Frent 2016). Tourism also induces disadvantages for residents. It is possible to find an increase in the cost of living (Almeida García et al. 2015), pollution of air and water, deterioration of nature, overcrowding, excessive noise, criminality, and problems with cultural identities and value systems (Jaafar et al. 2017); all these adverse effects often cause residents to oppose tourism development in the long term. The Triple Bottom Line (TBL) represents the core of these notions, and John Elkington (1994) added two bottom lines, the socio-cultural and the environmental. According to the above, it is necessary to balance the three dimensions to reach sustainability (Žak 2015; Udeh and Akporien 2016).

A bottom-up approach (Aguiñaga et al. 2017) involving local people will generate a self-sustainable community considering economic, socio-cultural and environmental factors in alignment with their needs. Consequently, considering residents' perceptions of tourism development becomes important when embracing the Triple Bottom Line

approach, prompting them to co-create their idea of sustainable tourism. No study has yet investigated the tourism impact in Matera; understanding the attitudes of Matera residents concerning the tourism effects would allow an understanding of the state of tourism in this destination. These insights could help design strategies to improve the awareness and acceptance of tourists among the residents, improving hospitality, development and sustainability of tourism in Matera. Our pioneering study examines the effects of residents' socio-demographic attributes on tourism impacts, proposing residents profiles based on their perception of the effects of tourism on the local population and socio-cultural life. The study aims to investigate how residents' perceptions on tourism are influenced by their attributes to propose profiles of residents in a tourist destination and propose improvements in the management and planning of this destination. The most relevant socio-demographic variables identified by the research are gender, age, income level, years of residence, proximity to the tourist area, proximity to the city centre, and membership of associations.

From the arguments discussed previously, the following research hypotheses are formulated:

H1 Residents manifest a significant perception of the economic impact derived from tourist activity on the Matera development Process.
H1a The perceived effect of the economic impact on Matera development process is significantly different by residents' sociodemographic profiles.
H2 Residents manifest a significant perception of the environmental impact derived from tourist activity on the Matera development Process.
H2a The perceived effect of the environmental impact on Matera development process is significantly different by residents' sociodemographic profiles.
H3 Residents manifest a significant perception of the sociocultural impact derived from tourist activity on the Matera development Process.
H3a The perceived effect of sociocultural impact on Matera development process is significantly different by residents' sociodemographic profiles.

3 The analysis of an italian site: the city of matera

Matera is an Italian town of 60.459 inhabitants,[1] capital of the homonymous province and second largest city in Basilicata by population,[2] as well as the largest municipality in the area of Basilicata[3] and the sixteenth in Italy.

The great thrust that accelerated the process of rehabilitation and redevelopment of the old part of Matera was given by UNESCO, which in 1993 declared the Sassi as a World Heritage Site. Meanwhile the city grows, no longer looks to its past with contempt but with respect and awareness of the potential that the territory can and must offer. The Sassi become repopulated and become fertile ground for museums, "cave houses", restaurants, b & bs, luxury hotels, spas and lots of artisan shops that find inspiration here. In the same caves where only fifty years ago people died of malaria and starvation, today tourists from

[1] Bilancio demografico 2018*, on demo.istat.it. URL consulted on 14 gennaio 2019.*
[2] Comuni della Basilicata per popolazione*, on Tuttitalia.it. URL consulted on 7 dicembre 2016.*
[3] Comuni della Basilicata per superficie territoriale*, on Tuttitalia.it. URL consulted on 7 dicembre 2016.*

all over the world come to admire the rock churches, the numerous exhibitions, to stay, to taste a typical dish or to buy a souvenir of tuff or terracotta.

In 2008 the city of the Sassi, thanks to the Matera 2019 Committee, embarked on the candidacy path for the European Capital of Culture in 2019. The candidacy involved the drafting of a dossier to be examined by the judging commission. Matera, representing the entire Basilicata Region, first entered the short list, the 6 finalists, along with Cagliari, Lecce, Perugia-Assisi, Siena and Ravenna, and then on 17 October 2014 with 7 out of 13 preferences is designated European Capital of Culture for 2019.

The city of Matera since the beginning of the twentieth century has always seen a slight but steady growth of the population, except for a significant increase in the second post-war period, due in part to an always positive natural balance and partly to the depopulation of the small neighboring towns.

3.1 Tourism impact in Matera

From the data collected by the ATP Basilicata in the following tables in the last 20 years there has been a constant increase both in terms of the accommodation capacity and the arrivals and presence of Italians and foreigners. Significant increases have occurred since 2008, the year in which Matera embarked on the candidacy path for the European Capital of Culture in 2019 and from 2014, the year in which Matera was proclaimed European Capital of Culture 2019. In particular, it can be noted as, with regard to the movement of customers, the dominant sector is that of foreigners.

In Basilicata, in 2018, it is the city of Matera, which records the largest increase in tourist flows, with 344,813 arrivals (+22.5%) and 547,532 presences (+22.3%), followed by the Costa Jonica with 255,537 arrivals (+18.2%) and 1,281,873 presences (+0.9%).

The tourism impact on Matera can be measured both on the supply side and on the demand side.

On the demand side, thanks to the *Tourist Intensity Index* (TIR = ratio between overnight stay and resident population) we can measure the importance that tourism has for Matera and the pressure it exerts on the territory. In fact, if we consider the data for 2014 and 2018, we can see that in 2014 the TIR = 4.05 and in 2018 it is TIR = 9.06, highlighting how over the years tourism has become increasingly important. If we analyze the data in detail, considering the overnight stays of Italian and foreign tourists, we can see that while for Italians the ratio remains constant (TIR 2014 = 2.64; TIR 2018 = 2.54), for foreigners the situation changes considerably (TIR 2014 = 1.41; TIR 2018 = 6.53), highlighting once again the fact that there is the dominant sector.

On the supply side, the tourism pressure on Matera is highlighted thanks to the *Tourist Function Index* (FI = ratio between the number of available beds and the resident population). If you always consider the data for 2014 (FI = 0.05) and 2018 (FI = 0.1), you can see how tourism is constantly growing, pushing accommodation activities to grow and expand.

3.2 Data collection and method

The empirical phase of the research was carried out by means of a survey on residents of the Matera destination. Data collection was conducted using a questionnaire submitted between May and July 2019, in the city of Matera. The questionnaire was designed considering the literature review regarding resident's attitudes and perceptions of tourism impacts (Gursoy and Rutherford 2004; Johnson et al. 1994; Ko and Stewart 2002; Liu and

Var 1986; Williams and Lawson 2002). Particularly, *starting from the Ap and Crompton (1998) scale consists of a belief component asking respondents to rate the level of change associated with 35 items and an evaluative component asking residents to rate their level of like or dislike for each item. We have verified social-cultural, economic, and environmental domains. The questionnaire consisted of two sections, with the first capturing socio-demographics features, the second section captured perceptions of tourism's impact. Because of the variety of attributes available in the literature, selection was based on common items applicable to all destinations, such as improvements to infrastructures and services. Similarly, attributes inappropriate to the context of Matera were excluded, such as nightlife. Items were measured using a five-point Likert-type scale anchored by strongly disagree and strongly agree, with 3 as a neutral point, to capture residents' perceptions of the four domains of tourism impacts.*

The latent variables included several items, taken from existing studies on the perception of impacts on the three mentioned dimensions (Brunt and Courtney 1999; Gursoy et al. 2010; Kim et al. 2013; Látková and Vogt 2012).. Moreover, to avoid Common Method Biass (CBM) problems, the questionnaire has followed the procedural recommendations by Podsakoff et al. (2012) to be designed.

Our sample, selected from a convenience sampling, consists of 250 residents of the Matera destination. The analysed sample well replicates the demographic characteristic (gender and age) of Matera population.

Size requirements were determined by considering the sample size recommendation with a statistical power of 80% (Green, 1991). Our study sample of 250 residents of the Matera, fell between a small-effect size (sample size requirement = 481) and a medium-effect size (sample size requirement = 66). According to Cohen (Cohen 1988), this solution appeared satisfactory for a study in social sciences.

Table 1 presents the respondents profile from Matera city. The results show that 44% were male and 56% female. The respondents were divided into three age groups, 16–20 years (8%), 21–40 (43%) and 41 years and above (49%). 43% of respondent earn less than euros 15,000 euros per year, 39% earn between 15,001–28000 euros and 18% earn more than 28,000 euros. 78% of residents live close to the City Center and 57% of residents' homes are close to the tourist activity. Lastly, 31% of the Matera residents are member of a sociocultural or environmental association.

To investigate the phenomena, we propose a structural equation modelling approach in which the variable "Tourism impact" depends on some factors such as "Economic Impact", "Socio-cultural Impact", "Environmental Impact" that influence the overall experience of residents. A good knowledge about those relationships and a better understanding about how those relationships are influenced by different subgroups regarding the sociodemographic profile of respondents are important for public administrators in their management choices. In this vein, The Partial Least Square technique, a composition-based structural equation modelling approach, was used to test the hypotheses formulated (Rigdon 2016). Composite measurement models are constructs defined as weighted linear combinations of their indicators (Nitzl and Chin 2017). This design type is suitable for behavioural constructs in which the markers do not reflect or cause the construct, but they compose it (Henseler 2017). Hence, the PLS-SEM model was chosen for the characteristics of the latent variables (LVs). In the current study, constructs are referred to as composites, so to provide consistent and unbiased estimates a composite-based method such as PLS should be used (Sarsdedt et al. 2016; Rigdon et al. 2017). Composites can be defined as either Composite in mode A or Composites in mode B depending on weather their MVs are highly correlated or not. Thus, Composites in mode A uses correlation weights and

Table 1 Profile of Residents

Profile	Frequency	Percentage (%)
Gender		
Male	108	44
Female	138	56
Age (years)		
16–20	28	8
21–40	154	43
Over 40	176	49
Level of Income		
15,000 euros and below	100	43
15,001–28000	91	39
Above 28,000	41	18
City proximity		
Yes	191	78
No	56	22
Tourist proximity		
Yes	141	57
No	107	43
Association		
Yes	77	31
No	171	69

Composites in mode B use regression weights (Faul et al. 2009) to compose the construct respectively (Becker et al. 2013). Due to the nature of all LVs, they have been defined as Composite Mode A. Furthermore, the collinearity statistics (VIF) for most of MVs' VIF being bigger that 3 advices for not defined LVs as Composites. Secondly, the statistical properties of PLS-PM produce robust evaluations for data with normal and extreme non-normal distributions (skewness and/or kurtosis). The skewness scores of the latent variable indicators are not more than -1.31, revealing that the level of skewness is not severe and the PLS-SEM is fit for model estimation (Hair et al. 2018). Thirdly, PLS-SEM was also employed because a non-parametric SEM approach is appropriate to perform a Multigroup analysis (Hair et al. 2018; 2018; Henseler et al. 2016a) as to test differences in the relationships implicated in the research model according to different groups of Materas' residents. Lastly, PLS-SEM allows the challenging of constructing a global evaluation of a destination development through composites indicators as in our study. One of the main advantages of using the PLS-SEM is that it gives two weights: one to measure the impact of each indicator on its composite indicator, and the other to measure the influence of the composite indicator on the complex indicator (Trinchera and Russolillo 2010). Thus, providing a complex indicator for destination tourist development, allows destination marketing organizations (DMOs) to assess whether the overall destination development process is improving based on residents' perception. Smart-PLS 3.2.7 software (Ringle et al. 2015) was used to assess the research model and to perform Multigroup analysis (MGA).

The PLS-PM is defined by two series of linear equations known as the inner (or structural) model and the outer (or measuring) model. The structural model details the relationships between VLs, while the measurement model identifies the relationships between a VL and its manifest variables (MVs). A PLS path modelling (PLS-PM) is analysed and

evaluated in two steps: (1) assessment of the measuring model; (2) assessment of the structural model. This study evaluated the measurement model by assessing the reliability and validity of the composites indicators (Hair et al. 2017). The structural model was estimated by examining the importance of the path coefficients and by assessing the R2 as an indication of the explanatory power and the Stone-Geisser test (Q2) to shows the predictive relevance (Henseler et al. 2009) of the research model. Furthermore, the value of the standardized room mean square residual (SRMR) was obtained as a goodness of fit indicator to detect for model misspecification (Henseler et al. 2015, 2016a). The nonparametric method Henseler's MGA (Henseler et al. 2009) was used to performance the multigroup analysis. Furthermore, prior to the MGA analysis, measurement invariance was also evaluated using MICOM (Hair et al. 2018; Henseler et al. 2016a, b) analysis implemented in SmartPLS software.

3.3 Results

Table 2 shows loadings above 0.7 for all the Composites Mode A indicators. Composite Reliabilities (CRs) are over 0.9, and Average Variances Extracted (AVEs) are over 0.4. Therefore, Composite Mode A meets the internal consistency and convergent validity requirements. Table 3 shows that Composite Mode A satisfy discriminant validity criteria according to HTMT90. None of the confidence intervals contains value one, as pointed out from HTMT inference tests, and this highlights the difference between each construct (Henseler et al. 2015).

Table 4 shows the path coefficients and their significance. The hypothesis test has been conducted through the bootstrapping procedure with 5,000 subsamples to generate the t-statistics and the p-value. (Ali et al. 2016).

The results from Table 4 support the three effects on Tourism Impact resident's perception (βECO = 0.166, p-value = 0.025), thus supporting hypotheses H1. Environmental Impact's resident perception influence significantly Tourism impact's resident perception (βENV = 0.220, p-value = 0.003) which supports hypothesis H2. Socio-cultural impact has a significant influence on Tourism Impact's resident perception (βSOCU = 0.474, p-value = 0.000) thus supporting hypothesis H3 (Fig. 1).

From Table 4 we observe that the model presents both a good explanatory power (R2 = 0.625) and a high predictive power (Q2 = 0.456). Lastly, a SRMR value of 0.97 is considered to be acceptable for a proper fit since that value is within the thresholds that are considered satisfactory (SMR = 0.10 and a more conservative threshold, SMR = 0.08).

The analysis of the invariance of the measures across different groups is necessary when using PLS-SEM for group comparison. To do this, the procedure called "measurement invariance of composite models "(MICOM) is carried out before performing a multigroup analyses in PLS-SEM (Hair et al. 2018) and it consists of three steps hierarchically interrelated (Henseler et al. 2016): (1) configural invariance, (2) compositional invariance, and (3) the equality of composite mean values and variances. Step 1 is not included in SmartPLS since it does not involve statistical test. The criteria are fulfilled under the following assumptions: identical indictors of composite across the groups; identical data treatments; identical algorithm settings or optimization criteria across groups. In step 2, SmartPLS return permutation-based confidence intervals. Through them, it is possible to determine if the correlation between the two group composite scores is significantly lower than one (null hypothesis H0:c = 1). If H0 is not rejected, the composite score does not diverge much in the two groups, and there is compositional invariance. In step 3, permutation-based confidence intervals for the mean values

Table 2 Measurement model for Mode A composites: loadings, construct reliability and convergent validity

Construct/Dimension/Indicator	Weight	Load	CR	AVE
Economic Impact				
			0.923	**0.504**
ECO1	0.151***(14.289)	0.810		
ECO3	0.121***(12.864)	0.721		
ECO4	0.151***(11.078)	0.850		
ECO5	0.114***(14.210)	0.710		
ECO6	0.126***(10.677)	0.787		
ECO7	0.131***(12.970)	0.732		
ECO8	0.101***(9.065)	0.709		
ECO10	0.114***(10.736)	0.652		
ECO11	0.144***(6.827)	0.702		
ECO12	0.065***(4.387)	0.701		
ECO13	0.152***(14.076)	0.807		
Environmental Impact			**0.911**	**0.543**
ENV1	0.150***(8.571)	0.751		
ENV2	0.163***(10.306)	0.744		
ENV3	0.149***(9.635)	0.774		
ENV4	0.052***(3.503)	0.781		
ENV5	0.054***(3.550)	0.784		
ENV6	0.136***(10.376)	0.717		
ENV7	0.127***(12.548)	0.726		
ENV8	0.117***(11.085)	0.718		
ENV9	0.129***(9.284)	0.729		
ENV10	0.128***(9.477)	0.700		
ENV11	0.094***(8.493)	0.706		
ENV12	0.080***(6.316)	0.736		
ENV13	0.090***(7.277)	0.729		
Socio cultural Impact			**0.935**	**0.548**
SOCU1	0.113***(17.400)	0.754		
SOCU4	0.119***(20.356)	0.831		
SOCU5	0.133***(23.905)	0.889		
SOCU6	0.123***(22.632)	0.868		
SOCU7	0.110***((17.548)	0.814		
SOCU8	0.118***(19.016)	0.837		
SOCU9	0.117***(21.407)	0.844		
SOCU10	0.110***(18.278)	0.810		
SOCU11	0.124***(21.657)	0.848		
SOCU13	0.110***(21.657)	0.779		
Tourism Impact			**0.935**	**0.783**
IMPACT1	0.301***(33.047)	0.904		
IMPACT2	0.290***(33.088)	0.97		
IMPACT3	0.283***(31.531)	0.880		
IMPACT4	0.255***(23.992)	0.846		

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$. Bootstrapping based on $n = 5000$ subsamples

Table 3 Discriminant validity

	Heterotrait–monotrait ratio Criterion		
	ECO	ENVI	IMPACT
ECO			
ENVI	0.665		
	CI0.90 [0.569; 0.741]		
IMPACT	0.718	0.697	
	CI0.90 [0.621;0.803]	CI0.90 [0.688; 0.830]	
SOCU	0.836	0.768	0.826
	CI0.90 [0.769;0.889]	CI0.90 [0.749; 0.886]	Ci0.90[0.749; 0.886]

Economic Impact; ENVI: Environmental Impact; SOCU; socio-cultural impact; IMPACT: Tourism Impact. CI0.90: Confidence Interval at 90%

and the variances make it possible to assess if composites' mean values and variances differ across groups.

For the aim of this study, PLS multi-group analyses based on the socio-demographic profiles of Matera residents based on gender, age, income, city proximity, tourist proximity and membership of association have been carried out. The MICOM procedure is applied to the research model and its multi-group analysis for different residents' profile. In step 1, we have followed the criteria established to ensure the composites' configural invariances. Table 5 shows the results of applying MICOM procedure, step 2 and step 3, when using gender to conduct a multi-group analysis. For practical reasons, we have omitted the results of MICOM procedure for the rest of socio-demographic profiles. However, results of MICOM for these groups also reveal that the full measurement invariance of the four composites across groups are supported. Next, Henseler's MGA has been used to compare and test differences in the path coefficients in the structural model between groups.

Table 6 and 7 show the structural models across resident's groups and results of the MGA analysis. For Henseler's MGA method (Henseler et al. 2009), a p-value lower than 0.05 or higher than 0.95 indicates significant differences between specific path coefficients across two groups at a 5% level of significance.

4 Discussion and conclusions

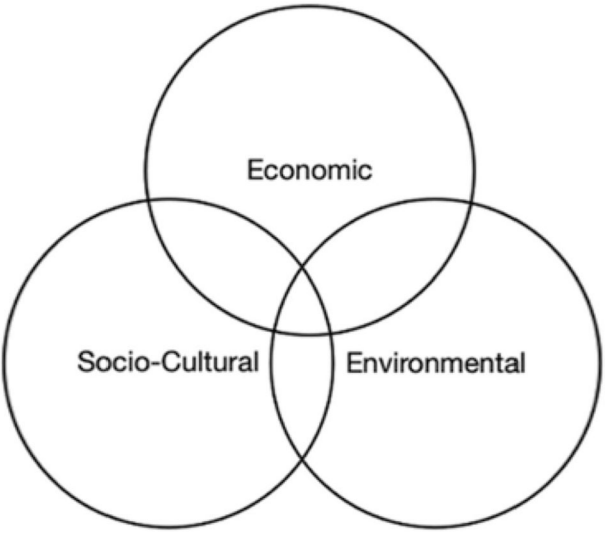
The results evidence significant differences in the perception of the economic impact from tourist activities on the destination development process between men and women, being that men's perception bigger than women's perception. Moreover, significant difference in the perception of the sociocultural impact on the destination development process is found, being the women's perception higher than men's perception. No significant differences in environmental impact perception on the destination overall tourism impact by gender is observed. Hence, for gender Hypotheses H1a and H2a are supported and H3a is no supported. No differences in the perception of the economic, environmental and sociocultural impact across residents on the destination overall tourism impact by age group are observed. Thus, Hypotheses H1a, H2a, H3a are not supported when considering residents' age. However, it is interesting to highlight that the residents with age 21–40 years old perceived significantly the economic impact derived from tourist activities whereas

Table 4 Structural Model Estimates

Tourism Impact	$R^2 = 0.625$; $Q^2 = 0.456$			
	Coeff. Direct effect	t-value	p-value	Hypothesis Supported
H1: Economic Impact→Tourism Impact	0.166* CI[0.018; 0.306]	2.242	0.025	Yes
H2: Environmental Impact→Tourism Impact	0.220** CI[0.074; 0.359]	3.011	0.003	Yes
H3: Socio-Cultural Impact→Tourism Imact	0.474*** CI[0.299; 0.649]	5.300	0.461	Yes

*p < 0.05; **p < 0.01; ***p < 0.001. Bootstrapping based on n = 5000 subsamples. A two-tailed test t for a t-Student distribution for testing LVs' main effects are applied

Fig. 1 The Triple Bottom Line



the environmental and sociocultural impact are perceived significantly by the three group of age (less than 21, 21–40, more than41). Focusing on the level of income, this variable has been categorized into three groups: residents with less than 15,000 euros (group 1), residents with income 15,001–28000 euros (group 2) and residents with more than 28,001 euros (group 3). For this variable, significant differences in the perception of the economic impact on the destination development can be found across residents from group 1 and group 3 of income and across residents from group 1 and group 2 of income, being the residents with higher level of income (group 3) those who manifest a significant perception of the economic impact. Likewise, differences and across residents from group 1 and group 3 and from group 1 and 2 of income are observed regarding the perception of sociocultural impact derived from tourist activity on the destination overall impact. Otherwise, the environmental impact is perceived significantly different across residents from group 1 and 3, and across residents from group 2 and 3. In fact, residents with lower level of income (group 1) do not perceive significantly the impact of environmental effect derived from

Table 5 MICOM results: Gender

Composite	c value (= 1)	95% Confidence Interval	Compositional Invariance
ECO	0.998	[0.998; 1]	Yes
ENVI	0.993	[0.993; 1]	Yes
IMPACT	1.00	[0.999;1]	Yes
SOCU	1.00	[0.999; 1]	Yes
Composite	Difference of the composite's mean value (= 0)	95% Confidence Interval	Equal mean value
ECO	0.001	[–0.260; 0.255]	Yes
ENVI	–0.000	[–0.254; 0.249]	Yes
IMPACT	–0.000	[–0.251; 0.240]	Yes
SOCU	–0.003	[–0.269;0.254]	Yes
Composite	Logarithm of the composite's variance ratio (= 0)	95% Confidence Interval	Equal variance?
ECO	–0.006	[–0.363;0.334]	Yes
ENVI	–0.002	[–0.343;0.329]	Yes
IMPACT	–0.002	[–0.262;0.227]	Yes
SOCU	–0.003	[–0.290;0.296]	Yes

tourism on the destination development. Hypotheses H1a, H2a and H3a are partially confirmed. Being a member of a cultural or/and environmental association lead to significant and positive differences in the perception of the environmental and sociocultural impact on the destination overall tourist impact. However, the belonging or not to an association does not lead to significant differences in the perception of the economic impact. For being a member of an association as resident profile characteristic, Hypotheses H2a and H3a are then supported and H1a is not supported. The proximity of Matera's residents to the City Centre or tourist activity does not cause significant differences in the perception of the economic and environmental impacts derived from tourism. However, significant differences on the sociocultural impact are observed by City Canter proximity, being those closer to the city Centre with higher perception of the sociocultural impact. Hence, focused on City Centre proximity, the Hypotheses H1a and H2a are not supported and H3a is supported. The proximity of Matera's residents to the tourist activity does not cause significant differences in the perception of the economic, sociocultural and environmental impacts derived from tourism. Hence, for this characteristic, hypotheses H1a, H2a and H3a are not supported. However, we can observe that those residents who live closer to tourist activity perceive significantly and slightly higher economic, sociocultural and environmental impact than those who live far away from the tourist activity.

Table 6 Multigroup analysis. Results of Hypothesis Testing

Hypotheses	Gender—Path coefficients			P-value Difference	Supported
	Female	Male	Path coefficient differencel	Henseler's MGA	
H1a:Economic Impact→Tourism Impact	-0.044	0.434***	0.478	1	**Yes**
	CI[-0.204;0.129]	CI[0.238;0.627]			
H2a:Enviromnetal Impact→Tourism Impact	0.210**	0.225**	0.015	0.546	No
	CI[0.060;0.329]	CI[0.061;0.442]			
H3a:Sociocultural Impact→Tourism Impact	0.692***	0.171	0.521	0.002	**Yes**
	CI[0.519;0.877]	[-0.107;0.627]]			
	Membership Association—Path Coefficients			P-value Difference	Supported
	Association = Yes	Association = No	Path coefficient differencel	Henseler's MGA	
H1a:Economic Impact→Tourism Impact	0.222***	0.136	0.086	0.336	No
	CI[0.361;0.927]	CI[-0.044;0.307]			
H2a:Enviromnetal Impact→Tourism Impact	0.336***	0.016	0.34	0.04	**Yes**
	CI[0.138;0.503]	CI[-0.204;0.208]			
H3a:Sociocultural Impact→Tourism Impact	0.637***	0.377***	0.260**	0.028	**Yes**
	CI[0.033;0.486]	Ci[0.176;0.574]			
	City Proximity—Path Coefficients			P-value Difference	Supported
	City proximity = Yes	City proximity = No	Path coefficient differencel	Henseler's MGA	
H1a:Economic Impact→Tourism Impact	0.108	0.166	0.058	0.565	No
	CI[-0.151;0.379]	CI[-0.003;0.229]			
H2a:Enviromnetal Impact→Tourism Impact	0.288*	0.206*	0.082	0.298	No
	[0.012;0.509]	CI[0.019;0.364]			

Table 6 (continued)

	City Proximity—Path Coefficients			P-value Difference	Supported
	City proximity = Yes	City proximity = No	Path coefficient differencel	Henseler's MGA	
H3a:Sociocultural Impact→Tourism Impact	0.502**	0.245**	0.257	0.954	**Yes**
	[0.118;0.753]	CI[0.270;0.700]			
	Tourist Proximity—Path Coefficients			P-value Difference	Supported
	Tourist proximity = Yes	Tourist proximity = No	Path coefficient differencel	Henseler's MGA	
H1a:Economic Impact→Tourism Impact	0.188*	0.085	0.103	0.7	No
	CI[0.003; 0.378]	CI[-0.092;0.326]			
H2a:Enviromnetal Impact→Tourism Impact	0.217*	0.216*	0.001	0.506	No
	[0.009;0.390]	CI[0.007;0.429]			
H3a:Sociocultural Impact→Tourism Impact	0.513***	0.460***	0.072	0.375	No
	[0.241;0.686]	CI[0.216;0.764]			

Note:*p < 0.05; **p < 0.01; ***p < 0.001. Bootstrapping based on n = 5000 subsamples

Table 7 Multigroup analysis. Results of Hypothesis Testing by age

Hypotheses	Age Path coeffiecients			|Path coefficient difference|			Henseler's MGA			Supported
	Age1: > 20	Age2: 21–40	Age3: > = 41	Dif1 = Age1-Age2	Dif2 = Age1-Age3	Dif3 = Age2-Age3	p-val Dif1	p-val Dif2	p-val Dif3	
H1a: Economic Impact→Tourism Impact	-0.098 [-0.657:0.710]	0.197* [0.030;0.392]	0.111 [-0.111;0.351]	0.295	0.209	0.080	0.779	0.697	0.303	No/No/No
H2a: Environ Impact→Tourism Impact	0.498** [0.035;0.722]	0.219* [0.047;0.396]	0.205* [0.147;0.508]	0.279	0.294	0.004	0.070	0.119	0.488	No/No/No
H3a: Sociocultural Impact→Tourism Impact	0.561* [0.129;0.986]	0.472*** [0.261;0.691]	0.474* [0.104;0.828]	0.089	0.087	0.002	0.416	0.424	0.480	No/No/No
Hypotheses	Income level Path coeffiecients			|Path coefficient difference|			Henseler's MGA			Supported
	INC1: 0–15000	INC2: 15,001–28000	INC3: More than 28,001-	Dif1 = INC1-INC2	Dif2 = INC1-INC3	Dif3 = INC2-INC3	p-val Dif1	p-val Dif2	p-val Dif3	
H1a: Economic Impact→Tourism Impact	0.015 [-0.118;0.153]	0.187 [-0.094;0.542]	0.657*** [0.365;0.855]	0.171	0.642	0.470	0.836	0.999	0.990	**No/Yes/Yes**
H2a: Environ Impact→Tourism Impact	-0.028 [-0.345;0.220]	0.420** [0.209;0.568]	0.393** [0.107;0.629]	0.448	0.421	0.421	0.027	0.479	0.980	**Yes/Yes/No**
H3a: Sociocultural Impact→Tourism Impact	0.491*** [0.328;0.689]	0.620** [0.144;1.002]	-0.099 [-0.333;0.265]	0.590	0.574	0.720	0.666	0.003	0.008	**No/Yes/Yes**

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References

Ali, F., Amin, M., Ryu, K.: The role of physical environment, price perceptions, and consumption emotions in developing customer satisfactions in Chinese resort hotels. J. Qual. Assur. Hosp. Tour. **17**(1), 45–70 (2016)

Almeida-García, F., et al.: Residents' perceptions of tourism development in Benalmadena (Spain), Tourism Management (2015)

Becker, J. M., Rai, A., Rigdon, E.: Predictive validity and formative measurement in structural equation modelling: Embracing practical relevance. In: Proceeding of the Thirty Fourth International Conference on Information Systems, Milan, Italy, 15–18, December 2013. (2013).

Brida, J.G., Risso, W.A., Schubert, F.S.: The impacts of international tourism demand on economic growth of small economies dependent of tourism. Tour. Manag. **32**(2), 377–385 (2010)

Brunt, P., Courtney, P.: Host perceptions of sociocultural impacts. Ann. Tour. Res. **26**(3), 493–515 (1999)

Choi, B.J., Kim, H.S.: The impact of outcome quality, interaction quality, and peer-to-peer quality on customer satisfaction with a hospital service. Manag. Serv. Qual. **23**, 188–204 (2013)

Dyer, P., Aberdeen, L., Schuler, S.: Tourism impacts on an Australian indigenous community. Tour. Manag. **24**, 83–95 (2007)

Faul, F., Erdfelder, E., Buchner, A., Lang, A.G.: Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. Behav. Res. Methods. Res. Methods **41**(4), 1149–1160 (2009)

Fredline, L., Jago, L., Deery, M.: The development of a generic scale to measure the social impacts of events. Event Manag. **8**, 23-37 (2003). https://doi.org/10.3727/152599503108751676

Gursoy, D., Chi, C.G., Dyer, P.: Local's attitudes toward mass and alternative tourism: The case of Sunshine Coast. Australian J. Travel Res. **49**(3), 381–394 (2010)

Hair, J.F., Hult, G.T.M., Ringle, C., Sarstedt, M.: A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). Sage, Los Angeles, CA (2017)

Hair, J.F., Sarstedt, M., Ringle, C.M., Gudergan, S.P.: Advanced Issues in Partial Least Squares Structural Equation Modeling (PLS-SEM). Sage, Thousand Oaks, CA (2018)

Henseler, J.: Bridging design and behavioral research with variance-based structural equation modelling. J. Advert. **46**(1), 178–192 (2017)

Henseler, J., Ringle, C., Sinkovics, R.: The Use of Partial Least Squares Path Modeling in International Marketing. Adv. Int. Mark. **20**(1), 277–320 (2009)

Henseler, J., Ringle, C.M., Sarstedt, M.: A new criterion for assessing discriminant validity in variance-based structural equation modelling. J. Acad. Mark. Sci. **43**, 115–135 (2015)

Henseler, J., Hubona, G., Raand, P.A.: Using PLS path modeling in new technology research: Updated guidelines. Indust. Manag. Data Syst. **116**(1), 2–20 (2016a)

Henseler, J., Ringle, C., Sarstedt, M.: Testing measurement invariance of composites using partial least squares. Int. Mark. Rev. **33**(3), 405–431 (2016b)

Kim, K., Uysal, M., Sirgy, M.J.: How does tourism in a community impact the quality of life of community residents? Tour. Manage. **36**, 527–540 (2013)

Látková, P., Vogt, C.A.: Residents' attitudes toward existing and future tourism development in rural communities. J. Travel Res. **51**(1), 50–67 (2012)

Lundberg, E.: Evaluation of Tourism Impacts - a sustainable development perspective. (Licentiate thesis), School of Economics, Business and Law, Gothenburg (2011)

Miyakuni, K.: Residents' attitudes toward tourism, focusing on ecocecentric attitudes and perceptions of economic costs: The case of Iriomote Island, Japan. Doctoral Dissertation, Michigam State University, Michigam, United States (2012)

Nitzl, C., Chin, W.W.: The case of partial least squares (PLS) path modeling in managerial accounting research. J. Manag. Control.Manag. Control. **28**(2), 137–156 (2017)

Podsakoff, P.M., MacKenzie, S.B., Podsakoff, N.P.: Sources of method bias in social science research and recommendations on how to control it. Annu. Rev. Psychol.. Rev. Psychol. **63**, 539–569 (2012)

Rasoolimanesh, S.M., Roldán, J.L., Jaafar, M., Ramayah, T.: Factors influencing residents' perceptions toward tourism development: Testing the differences across rural and urban destinations. J. Trav. Res. **56**(6), 760–775 (2017)

Rigdon, E.E.: Choosing PLS path modeling as analytical method in European management research: A realist perspective. Eur. Manag. J.Manag. J. **34**(6), 598–605 (2016)

Rigdon, E.E., Sarstedt, M., Ringle, C.M.: On comparing results from CB-SEM and PLS-SEM: five perspectives and five recommendations. Marketing Zfp. **39**(33), 4–16 (2017)

Ringle, C.M., Wende, S., Becker, J.M.: SmartPLS 3. SmartPLS, Bönningstedt (2015)

Sarstedt, M., Hair, J.F., Ringle, C.M., Thiele, K.O., Gudergan, S.P.: Estimation issues with PLS and CBSEM: Where the bias lies! J. Bus. Res. **69**(10), 3998–4010 (2016)

Stylidis, D., Biran, A., Sit, J., Szivas, E.: Residents' support for tourism development: The role of residents' place image and perceived tourism impacts. Tour. Manag. **45**, 260–274 (2014). https://doi.org/10.1016/j.tourman.2014.05.006

Trinchera, L., Russolillo, G.: On the use of Structural Equation Models and PLS Path Modeling to build composite indicators. Working Paper no. 30, pp. 1–44, University of Macerata, Italy (2010).