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The moderating role of tourism intensity on residents' intentions towards pro-tourism behaviours

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ABSTRACT

This study analysed the complex dynamics of tourism based on perspectives and intentional behaviours of residents. The analysis focused on how residents perceive the effects of tourism, their satisfaction with it, their subjective well-being, and their inclinations towards pro-tourism behaviours. By merging social exchange theory and bottom-up spillover theory, it also investigates tourism intensity (TI) as a moderator, which has been understudied. A representative sample of 990 residents, in both high and low TI municipalities of the Algarve region, was surveyed. The model was estimated using PLS-SEM. The results revealed significant differences in residents' perceptions based on TI. Residents in high TI areas perceived stronger effects on satisfaction due to negative and positive impacts of tourism. However, TI did not affect the relationships between satisfaction with tourism, subjective well-being, and intentions for pro-tourism behaviours. The economic gains created by tourism may differ from the social and psychological factors shaping residents' well-being. These outcomes offer valuable insights for destination managers and politicians, aiding in the development of strategies to alleviate the adverse effects of tourism. Directing efforts towards improving residents' satisfaction with tourism, subjective well-being, and support for tourism can also contribute to securing long-term and sustainable benefits for host communities.

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Introduction

Tourism exerts substantial impacts on the economic, sociocultural, and environmental dimensions of local populations (Ap, 1992). These impacts directly affect residents' satisfaction with tourism activities (STA) and their subjective well-being (SWB), ultimately shaping their support for further tourism growth (Cottrell et al., 2013; Eslami et al., 2019; Gursoy et al., 2019; Ivlevs, 2017; Liu et al., 2022; Ribeiro et al., 2017; Zheng et al., 2022). Because travel destinations can be perceived as organized entities, in which inhabitants hold a crucial role as valuable stakeholders (Wang et al., 2022), it is crucial to comprehend the complexities of residents' perspectives and behaviours towards tourism.

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Tourism intensity (TI), which reflects the magnitude and scale of tourism activity, has also been found to influence these relationships (Gonzalez et al., 2018; Ivlevs, 2017; Kim et al., 2013; Kim et al., 2021; Tokarchuk et al., 2016; Tokarchuk et al., 2021; Woo et al., 2015; Zheng et al., 2022). Depending on the TI, the observation of benefits and costs among residents is not equal. For instance, in municipalities with low TI, residents may perceive fewer costs of tourism like traffic and noise, but also fewer positive impacts, such as increased revenue and community development. In municipalities with high TI, meanwhile, residents may experience higher negative impacts, but also greater benefits, leading to different perceptions and behaviours. However, the consequences of TI on residents' perceptions and behaviours have clearly been under-researched, as claimed by Vargas-Sánchez et al. (2015), Tokarchuk et al. (2016) and Zheng et al. (2022). This research seeks to fill a gap in the existing literature by introducing TI as a moderating variable within a conceptual model that investigates how residents' perceptions of the impacts of tourism influence their STA, SWB, and intentions to engage in pro-tourism behaviours (IPTB). This research also seeks to merge social exchange theory (SET) and bottom-up spillover theory (BST) (Eslami et al., 2019; Tam et al., 2023) to understand residents' perceptions and intentional behaviours concerning tourism. While SET provides a lens to observe the relationships between residents and tourism grounded on the expectation of reciprocal benefits (Wassler et al., 2019), BST posits that tourism can have direct and indirect effects that extend beyond tourism and permeate into other aspects of residents' lives. Positive experiences with tourism can generate spillover effects, which can enhance residents' well-being and support for tourism. Conversely, negative experiences may result in adverse spillover effects, including opposition towards further tourism development (Eslami et al., 2019; Gautam, 2023). There is currently insufficient evidence for how residents' SAT can boost their SWB and, consequently, their IPTB (Seo et al., 2021; Wang et al., 2023). This research also aims to bridge the existing gap by adding evidence of the spillover effect of residents' SAT on both their SWB and IPTB.

Theoretical and practical contributions of this study are three-fold. First, it illustrates how TI moderates the relationships between residents' perceptions, SWB and behavioural intentions. Second, it creates new contributions to the literature on residents' SAT, SWB and IPTB by merging the SET and BST frameworks. Third, it provides relevant insights for tourism managers. The findings suggest that, to garner residents' support, destination management organizations (DMOs) and other stakeholders should take a proactive stance in enhancing residents' SWB and STA. There are alternative ways to do so, such as enhancing the income of individuals employed in the tourism industry, motivating their involvement in tourism development decisions, and promoting collaborative endeavours between residents and tourists. By linking the dimensions of STA to residents' SWB, decision-makers can devise strategies that foster unified support for further sustainable tourism development.

Literature review and hypothesis development

The relationships between residents' perceptions of tourism impacts, STA, SWB and IPTB in light of SET

For over three decades, researchers have dedicated their efforts to observe the impacts of tourism on local residents, recognizing the global reach of this topic and its substantial impacts on host communities. Previous studies have primarily concentrated on examining residents' perceptions of tourism impacts, as exemplified in the works of Ap (1992), Ribeiro et al. (2013), and García et al. (2015). The UNWTO (2005) underscored the significance of adopting a balanced approach that considers the economic, sociocultural, and environmental facets of tourism impacts. This is crucial for securing long-term sustainable development. Consequently, much of the academic research on tourism impacts has centred around these three fundamental dimensions to comprehend residents' perceptions (López et al., 2018; Nunkoo & Gursoy, 2012; Sharpley, 2014; Woosnam

& Ribeiro, 2023). These dimensions can be evaluated both positively and negatively, reflecting how residents perceive the advantages and drawbacks of tourism (Stylidis et al., 2014).

Nevertheless, as stated by Wang et al. (2022), residents' responses to tourism are not solely in accordance with their assessments of advantages and disadvantages, but are also driven by social and psychological factors. This suggests that residents' attitudes to tourism growth require a more holistic approach (Gursoy et al., 2019). It is thus reasonable to continue studying residents' perceptions of tourism impacts in articulation with other dimensions, such as STA, SWB, and IPTB (Erul & Woosnam, 2022; Eslami et al., 2019; Gursoy et al., 2019; Jordan et al., 2019; Thyne et al., 2022).

Residents' STA is closely tied to their perceptions of its impacts (Cottrell et al., 2013; Ribeiro et al., 2013). If residents notice positive effects of tourism such as job creation, cultural exchange, and economic growth in their communities, they are more likely to be satisfied with the activity. Conversely, if they perceive negative impacts like traffic congestion, environmental degradation, and increased living costs, their satisfaction is likely to decline. Some studies have demonstrated a strong connection between tourism impacts perceived by residents and their overall STA (Gursoy et al., 2002; Kim et al., 2013). Consequently, residents' awareness of the impacts of tourism remains crucial in determining their STA and, consequently, their supportive stance (Gannon et al., 2021; Gonzalez et al., 2018; Rasoolimanesh et al., 2015; Šegota et al., 2017; Vodeb et al., 2021).

Likewise, tourism affects residents' SWB (Tam et al., 2023). SWB, also identified as quality of life (QoL), is a concept derived from the happiness theory in psychology (Diener, 2000), and denotes an individual's cognitive assessment of their current life situation (Kim et al., 2015). Earlier studies have unveiled the impact of tourism in promoting SWB, with studies indicating that the tourism experience contributes to improve the overall well-being of tourists (Chen et al., 2016; Sie et al., 2021; Sirgy et al., 2011; Wang et al., 2023). As a community transforms into a tourism destination, however, it becomes imperative to examine the impacts of tourism on the well-being of local residents (Uysal et al., 2016). Tourism provides economic advantages, such as job opportunities and increased revenue, which can improve residents' financial stability and overall QoL. Additionally, tourism provides opportunities for social interaction and cultural exchange, which promote social connectedness and well-being (Liang & Hui, 2016; Ouyang et al., 2019; Su et al., 2018; Uysal et al., 2016; Woo et al., 2018). Nevertheless, tourism might also generate negative impacts. Increased tourism may lead to overcrowding, which can limit residents' access to public spaces and services, and higher housing costs, which can make it more challenging for residents to afford to live in their own communities (Butler, 2020; Gonzalez et al., 2018; Kuščer & Mihalič, 2019). Tourism also might contribute to generate pollution and environmental deterioration, thereby exerting adverse effects on the health and well-being of residents (García et al., 2015; Rasoolimanesh et al., 2015; Ribeiro et al., 2017; Šegota et al., 2017; Stylidis et al., 2014).

Most of the existing research on residents' perceptions of tourism impacts, STA and SWB has relied on SET, building on the seminal work of Homans (1958). SET suggests that individuals make choices based on a specific rationale, while considering interactions in which individuals and groups exchange resources (Ap, 1992). Thus, when residents perceive that the advantages of tourism surpass its disadvantages, they are prone to experience STA, which leads to an anticipated increase in their SWB. Based on these assumptions and the SET framework, the following hypotheses are put forward:

H1: Perceived positive impacts of tourism positively affect residents' STA.

H2: Perceived positive impacts of tourism positively affect residents' SWB.

H3: Perceived negative impacts of tourism negatively affect residents' STA.

H4: Perceived negative impacts of tourism negatively affect residents' SWB.

Previous studies have also suggested that residents' endorsement of tourism growth is typically influenced by their evaluation of its advantages and disadvantages (Gursoy et al., 2019; Sharpley, 2014; Wassler et al., 2019). Scholars have observed that residents who perceive more benefits from tourism are inclined to be more supportive of its continuation, whereas those who perceive greater costs are more likely to express opposition (Choi & Sirakaya, 2005; Vargas-Sánchez et al., 2011). However, some studies have presented different findings. Teye et al. (2002) proposed that the perceptions of residents who experience more substantial personal benefits from tourism may be less positive. They argued that unfavourable working conditions within the tourism industry could explain these negative attitudes towards tourism. Other studies have demonstrated cases in which residents still support tourism development despite limited economic benefits or negative impacts (Nunkoo & So, 2016; Zhou et al., 2015).

Nevertheless, as indicated by Gursoy et al. (2019), residents' endorsement of tourism development is not solely explained by their perceptions of the impacts of tourism. When evaluating support for or IPTB, researchers should also consider other variables, such as residents' SWB and STA. Although there is currently no definitive theoretical evidence establishing a causality between these variables, it is increasingly apparent that residents who experience greater advantages from tourism, express satisfaction with it, and exhibit higher levels of well-being, are more likely to support its growth (Vargas-Sánchez et al., 2014; Woo et al., 2018).

As stated by Sharpley (2014), existing research has primarily focused on residents' perceptions while neglecting their behaviours. Although some scholars have attempted to bridge this gap, they have tended to approach it from an attitudinal rather than a behavioural perspective (Gursoy et al., 2002; Plaza-Mejía et al., 2020). Responding to the call by Plaza-Mejía et al. (2020) for investigation of residents' support for tourism development, researchers should differentiate between three dimensions: attitudinal, intentional, and behavioural. Attitudes pertain to the extent of individuals' favourable or unfavourable assessment of a particular behaviour. In the tourism context, residents' attitudes are related to their perceptions of the impacts of tourism. Intentions refer to the level of effort one is likely to apply to achieve a goal, which indicate willingness to take actions supporting tourism development. Finally, behaviours describe the actual actions and conduct of individuals, revealing what residents do in favour of tourism (Plaza-Mejía et al., 2020). This study focuses on intentional behaviours (i.e. willingness to protect natural areas, to receive tourists with friendliness, and to accept some inconveniences to receive the benefits of tourism), to evaluate residents' pro-tourism behaviours (Ribeiro et al., 2017).

According to SET, residents are inclined to endorse continued development if they foresee potential benefits arising from tourism. In line with this rationale, it can be assumed that residents perceiving more advantages from tourism and being satisfied with the activity would show more intentions to engage in pro-tourism behaviours (Cottrell et al., 2013; Ribeiro et al., 2017; Vodeb et al., 2021). The following hypotheses are thus put forward:

H5: Perceived positive impacts of tourism positively affect residents' IPTB.

H6: Perceived negative impacts of tourism negatively affect residents' IPTB.

H7: Residents' STA positively affects their IPTB.

The relationships between residents' STA, SWB and IPTB in light of BST

The academic literature acknowledges the limitations of employing SET as a comprehensive background for studying residents' support for tourism. Several authors have noticed that this theory places an excessive emphasis on rationality and assumes that individuals are rational decision-makers who simply calculate the costs and benefits of their actions (Wang et al., 2022; Wassler et al., 2019; Woosnam & Aleshinloye, 2013). Instead, human behaviour is often driven by emotions, social norms, and other non-rational factors that cannot be adequately captured

by a purely rational model (Woosnam et al., 2018). Therefore, while SET serves as a guiding framework, it should be combined with other theories, such as BST, in order to accomplish a more holistic comprehension of residents' support (Eslami et al., 2019; Han et al., 2023; Li et al., 2020; Tam et al., 2023).

BST supports and explains the relationships that SET ignores (Suess et al., 2021; Woo et al., 2015). It posits that satisfaction resides within specific psychological domains, with overall life satisfaction or general well-being representing the most abstract level. In other words, life experiences in different situations affect overall life satisfaction (Sirgy et al., 2011). According to some researchers, if tourism contributes positively to the well-being of residents, there is a greater likelihood of their endorsing its continued development (Eslami et al., 2019; Gautam, 2023). However, there is insufficient evidence for how residents' STA can boost their SWB and, consequently, their IPTB. For instance, Eslami et al. (2019) and Han et al. (2023) investigated how residents' QoL affected their endorsement of tourism development using the perspective of BST. However, they did not consider residents' STA or residents' behavioural intentions. Our study tries to close this gap by adding evidence of the spillover effect of residents' STA on their SWB and IPTB. Thus, based on BST and the premises discussed, the following hypotheses are presented:

H8: Residents' STA positively affects their SWB.

H9: Residents' SWB positively affects their IPTB.

The moderating role of TI

TI is computed as the ratio of the total number of overnight stays at tourist accommodation establishments relative to the total number of inhabitants of a specific area (e.g. municipality) (Manera & Valle, 2018; Tokarchuk et al., 2016). Some authors have demonstrated a positive connection between TI and residents' QoL and SWB: as tourism activity increases, so does the well-being of local residents (Kim et al., 2013; Tokarchuk et al., 2016; Woo et al., 2015; Zheng et al., 2022). However, other studies have pointed out that 'overtourism' or 'touristification' - that is, an exacerbated TI or a negative movement towards carrying capacity levels can have negative impacts on residents' QoL (Gonzalez et al., 2018; Kim et al., 2021; Kuščer & Mihalič, 2019; Vargas-Sánchez et al., 2011). These concepts describe the situation in which the communal life of local residents is endangered by the influx of tourists converging on their communities. An overabundance of tourists in a destination may contribute to increased noise, escalated waste, proliferation of illicit apartment rentals, increases in housing prices, and the emergence of anti-tourism sentiments. In parallel, it may also trigger gentrification, which signifies a substantial displacement of the local population in favour of tourists. This, in turn, may result in the erosion of the neighbourhood identity, ultimately devaluing its cultural characteristics (Kim et al., 2021). Hence, as the tourist-resident ratio increases, residents' perceptions and life satisfaction tend to become more negative (Gonzalez et al., 2018; Ivlevs, 2017; Tokarchuk et al., 2021).

Although there are some studies linking TI to residents' SWB, the results have been contradictory (Gonzalez et al., 2018; Ivlevs, 2017; Kim et al., 2013; Kim et al., 2021; Tokarchuk et al., 2016; Tokarchuk et al., 2021; Woo et al., 2015; Zheng et al., 2022), and to date, there has been no research analysing the moderating role of TI on the connections between residents' perceptions and intentional behaviours. This moderating effect can be observed through the lens of SET and BST. According to SET, residents' endorsement of tourism is shaped by their perceptions of its advantages and disadvantages (Ap, 1992; Gursoy et al., 2019; Sharpley, 2014; Wassler et al., 2019). As argued, TI can affect the balance of the benefits and costs experienced by residents, as argued before. For instance, in municipalities with low TI, residents may perceive fewer negative impacts of tourism. Consequently, they may be more likely to exhibit pro-tourism behaviours. Likewise, the moderating role of TI on residents' perceptions and intentional

behaviours can be understood through BST. According to BST, residents' STA may have spillover effects on their SWB and IPTB (Eslami et al., 2019; Gautam, 2023; Seo et al., 2021; Wang et al., 2023). For instance, in high TI areas, residents who are satisfied with tourism activities may experience higher SWB and exhibit more pro-tourism behaviours, despite facing some negative impacts. Based on these arguments, it is expected that TI moderates the relationships in the proposed structural model:

H10: TI moderates the relationships between perceived positive and negative impacts of tourism, STA, SWB and IPTB.

Methodology

Study context

The Algarve is located in the southern part of Portugal. It is a consolidated tourism destination, recognized for the quality of its beaches and golf resorts, with an area of approximately 5,000 km², with around 465,701 inhabitants (INE, 2023). The Algarve is subdivided into 16 municipalities, and is bordered by the Alentejo region to the north and Spain to the east. Tourism is the dominant economic sector, contributing around 66.0% to the regional GDP and employing over 60.0% of the working population (RTA, 2023). Furthermore, in 2021, the Algarve accounted for 28.8% of all overnight stays by tourists in Portugal, strengthening its position as the country's leading tourism destination (INE, 2022).

Population and sample

The target population of this study consisted of all residents in the Algarve aged 18 and older ($N=390,488$) (INE, 2023). Residents younger than 18 were not included in this population in order to simplify the fieldwork, because it is mandatory to obtain the informed consent of a parent or responsible adult to collect personal data from these individuals. A stratified sampling approach was used, aiming to ensure the selection of a representative sample based on municipality, gender, and age group criteria. In addition, the researchers opted to allocate the global sample size proportionally to each stratum. This decision sought to streamline the data analysis process, given that all residents had an equal probability of being chosen for the sample. Using the formulae for stratified sample with proportional allocation (Xufre et al., 2021), the dimension of the target population (INE, 2023), and using auxiliary information for the variable 'intentions for pro-tourism behaviours' from a previous survey (standard deviation = 0.586), the authors estimated a sample size of 1,000 individuals in the high season of tourism activity (July-August 2022). For a confidence level of 95%, this sample size assures a maximum sampling error of 1.0% (Xufre et al., 2021). The Covid-19 pandemic posed challenges in surveying the intended number of residents aged above 65 years old, so the effective sample size was 990 respondents.

Instrument and data collection

A questionnaire was conducted among residents living in all municipalities of the Algarve region. It consisted of 24 groups of questions. In this study the authors focused on five key constructs: residents' perceptions of tourism impacts (economic, sociocultural, and environmental), both negative and positive; residents' STA; residents' SWB, and residents' IPTB. Additionally, questions pertaining to sociodemographic characteristics were also included.

To enrich the reliability and validity of the instrument, established scales previously used in other studies were employed (García et al., 2015; Gursoy et al., 2002; Lai et al., 2021; Liu et al.,

2022; Nunkoo & Gursoy, 2012; Rasoolimanesh et al., 2015; Ribeiro et al., 2013; Ribeiro et al., 2017; Woo et al., 2015). Each item was assessed using a 5-point Likert scale, where 1 meant strong disagreement and 5 denoted strong agreement. The questionnaire was carefully designed to reduce any ambiguity and assure proper wording of items, clarity, and simplicity. A pre-test was implemented with a sample of 50 residents across different municipalities, to ensure that all the questions were properly understood and to avoid vague and ambiguous interpretations.

Prior to the fieldwork, a survey team underwent a comprehensive two-hour training session covering various aspects, such as questionnaire-related matters, survey procedures and sampling, eligibility criteria, logistical considerations, work conduct, and ethical guidelines. Face-to-face interviews using a pencil-and-paper method were used to implement the questionnaire. The team of interviewers employed a person-to-person approach, utilizing the random route method along with pre-established selection criteria. They approached residents randomly in diverse locations such as streets, residences, coffee shops, stores, gardens, public parks, and elsewhere, until the targeted sample size for each stratum was successfully obtained.

Data analysis

The IBM SPSS Statistics v.29 and SmartPLS v.4 were used for all data analyses. First, descriptive analysis was employed to profile the sample of residents. Second, hierarchical cluster analysis using the Ward's method was implemented to create two homogeneous groups of municipalities with high and low TI. Secondary data of TI at municipality level provided by TravelBI (2023) was used in the cluster analysis. Third, the relationships of the conceptual model were tested using partial least squares structural equations modeling (PLS-SEM) (Figure 1) (Hair et al., 2021). Finally, PLS-SEM multigroup analysis (PLS-MGA) was carried out to test if there were statistically significant differences in the path coefficients between two groups: municipalities with low TI and municipalities with high TI (Hair et al., 2024; Matthews, 2017).

Results

Descriptive results

Figure 2 shows the location of the Algarve, as well as the level of TI of each municipality (TravelBI, 2023). The results of the cluster analysis revealed seven municipalities with high TI (Cluster 1) and nine municipalities with low TI (Cluster 2). Most of the municipalities with high TI are located along the coastline, while most of the municipalities with low TI are located in the inland.

As indicated in Table 1, most respondents live in municipalities with high TI ($n=530$), whereas fewer respondents live in municipalities with low TI ($n=460$). A significant proportion of the respondents were female, aged between 25 and 64 years old, with secondary or university education. A significant percentage of respondents relied on the tourism sector for their economic livelihood at the moment of data collection, especially those living in municipalities with high TI (41.2%).

Table 2 displays the mean values for residents' answers to the items included in the model, in both the high and low TI municipalities. In general, negative and positive perceptions of tourism impacts were higher for residents living in high TI municipalities. STA was slightly higher in low TI municipalities, despite of tourism activity being minor in these areas. However, residents living in high TI municipalities revealed higher SWB and IPTB.

Model Assessment in PLS-SEM

Assessment of measurement model and invariance measurement Across two groups

Before assessing the measurement model in PLS-SEM, and given the data were obtained from a cross-sectional survey (at a specific time point), the authors carried out analyses to investigate

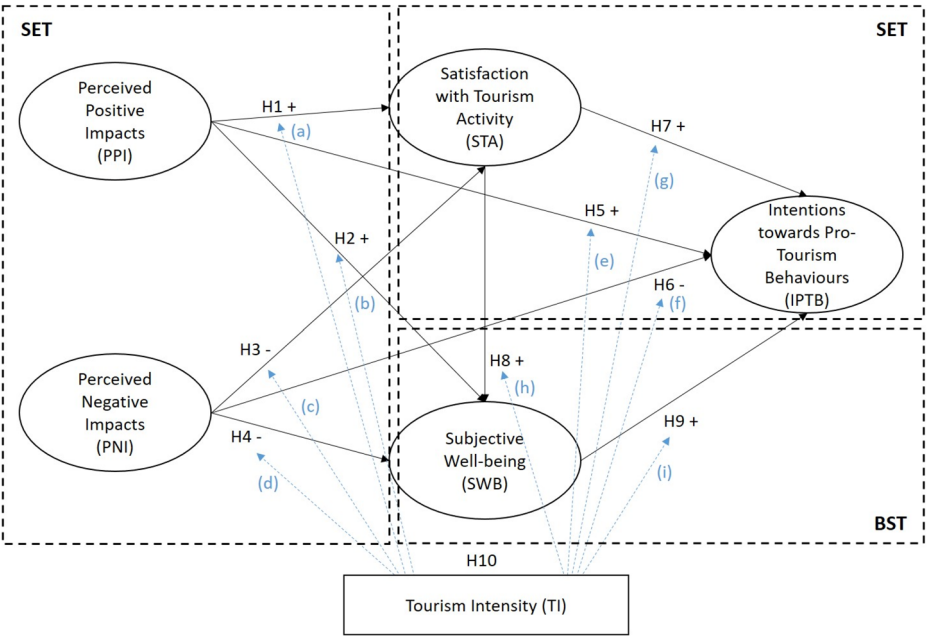


Figure 1. Research model and hypotheses. Source: Own elaboration.

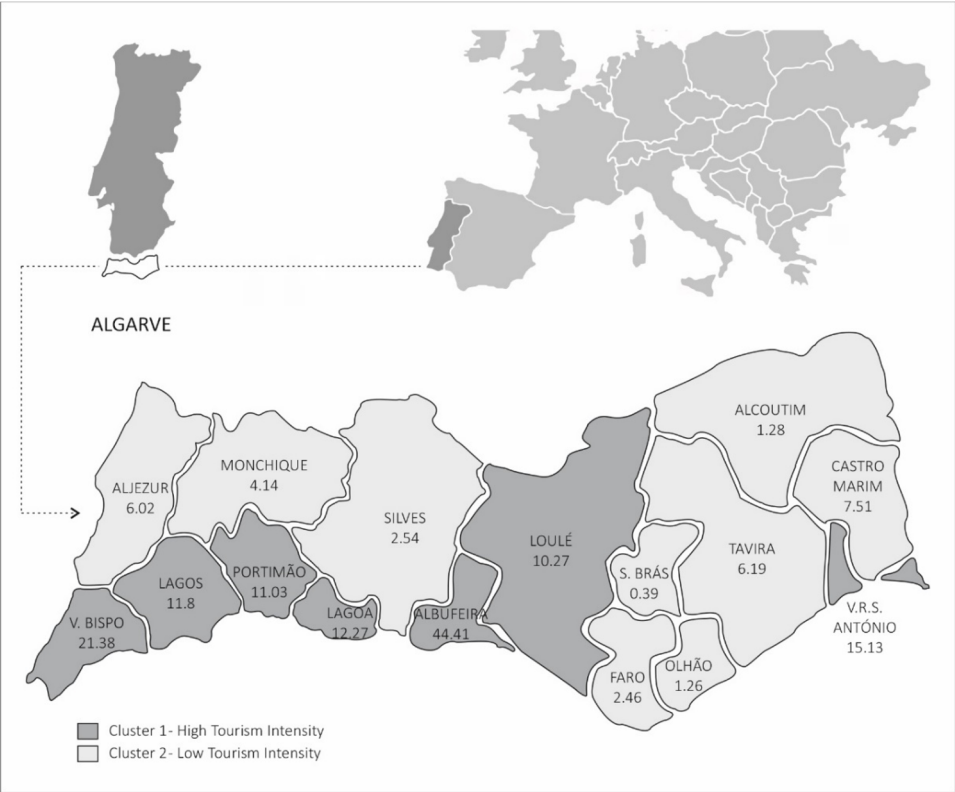


Figure 2. Tourism intensity by municipality in the Algarve. Source: Own elaboration based on TravelBI (2023).

Table 1. Profile of respondents.

Characteristics	Frequency		Percentage (%)	
	High TI (n=530)	Low TI (n=460)	High TI (53.5%)	Low TI (46.5%)
Gender				
Male	216	208	40.8	45.2
Female	313	252	59.2	54.8
Age (Years)				
18 – 24	67	53	12.6	11.5
25 – 64	423	350	79.9	76.1
65 and above	40	57	7.5	12.4
Level of Education				
Primary school	76	71	14.3	15.4
High school	261	234	49.3	50.9
University	187	143	35.3	31.1
DK/DA	6	12	1.1	2.6
Economic Dependence on Tourism				
No	288	273	54.3	59.3
Yes	218	176	41.2	38.3
DK/DA	24	11	4.5	2.4

Note: DK/DA–Does not Know/Does not Answer; TI–Tourism Intensity.

Table 2. Descriptive analysis of items.

LVs and Corresponding Items	High TI		Low TI	
	Mean	SD	Mean	SD
Perceived Positive Impacts (PPI)				
1. Economic	3.74	0.52	3.61	0.50
2. Sociocultural	3.23	0.57	3.20	0.54
3. Environmental	2.69	0.81	2.76	0.73
Perceived Negative Impacts (PNI)				
1. Economic	3.91	0.62	3.66	0.66
2. Sociocultural	3.15	0.72	2.88	0.68
3. Environmental	3.55	0.75	3.38	0.79
Satisfaction with Tourism Activity (STA)				
1. I am satisfied with the current level of tourism development in my municipality	3.21	0.99	3.24	0.97
2. I am satisfied with the way tourism is being managed in my municipality	3.00	1.02	3.04	0.99
3. Overall, I am satisfied with tourism in my municipality	3.33	0.93	3.36	0.89
Subjective Well-Being (SWB)				
1. Overall, I am satisfied with my life	3.85	0.81	3.81	0.84
2. My living conditions are excellent	3.19	0.98	3.11	0.98
3. In many aspects, my life is close to ideal	3.23	0.98	3.11	0.96
4. So far, I have achieved what I want in life	3.40	0.96	3.37	0.94
5. In general, I consider myself to be a happy person	3.99	0.79	3.91	0.83
6. In general, I am satisfied with my quality of life	3.63	0.94	3.62	0.94
Intentions towards Pro-Tourism Behaviours (IPTB)				
1. I am willing to protect the natural and environmental resources on which tourism depends	4.05	0.68	3.96	0.70
2. I am willing to receive tourists with friendliness and hospitality	4.19	0.67	4.22	0.62
3. I am willing to accept some sacrifices in order to receive the benefits of tourism	3.46	0.98	3.41	0.99

Note: SD–Standard Deviation.

Scale: 1–Strongly disagree; 5–Strongly agree.

common method bias (CMB) to evaluate whether the data's integrity was compromised (Jordan & Troth, 2020). To guarantee the rigorousness of the data and to avoid any potential problem related to CMB, several *a priori* and *a posteriori* mitigation measures were implemented (Podsakoff et al., 2003). *A priori*, the authors carefully designed the questionnaire to reduce measurement errors and implemented a pre-test. During questionnaire design, an introductory informative text was presented to minimize uncertainty, and psychological separation among questions that generate the constructs of the model was provided by introducing factual questions. Throughout the fieldwork, the confidentiality of participants' responses was guaranteed. They were explicitly

Table 3. Assessment results of the measurement model.

LVs and Corresponding Items	Loadings		CR		AVE	
	High TI	Low TI	High TI	Low TI	High TI	Low TI
Perceived Positive Impacts (PPI)			0.861	0.847	0.674	0.648
PPI1	0.798	0.805				
PPI2	0.867	0.859				
PPI3	0.796	0.748				
Perceived Negative Impacts (PNI)			0.868	0.867	0.686	0.686
PNI1	0.833	0.795				
PNI2	0.855	0.917				
PNI3	0.796	0.765				
Satisfaction with Tourism Activity (STA)			0.933	0.930	0.823	0.815
STA1	0.906	0.913				
STA2	0.910	0.897				
STA3	0.905	0.899				
Subjective Well-Being (SWB)			0.919	0.923	0.653	0.667
SWB1	0.777	0.831				
SWB2	0.832	0.843				
SWB3	0.837	0.835				
SWB4	0.815	0.777				
SWB5	0.741	0.755				
SWB6	0.842	0.855				
Intentions towards Pro-Tourism Behaviours (IPTB)			0.793	0.833	0.561	0.625
IPTB1	0.749	0.822				
IPTB2	0.721	0.804				
IPTB3	0.776	0.744				

Note. Refer to Table 2 for the designation of the items. CR-Composite reliability; AVE-Average variance extracted.

informed that the data collected would be used solely for academic purposes. *A posteriori*, Harman's one-factor test was conducted by applying an unrotated exploratory factor analysis to the 18 items (encompassing the five constructs within the model). The findings indicated that none of the factors accounted for more than 29.35% of the variability among the variables. This suggests that CMB was not a concern, as it falls below the recommended threshold of 50% (Podsakoff et al., 2003). In addition, in the evaluation of data normality, skewness and kurtosis statistics were considered. The results revealed that no significant abnormalities related to normality were observed in any of the items. These findings offer support for normality in the maximum likelihood estimation of SEM and validate the suitability of the data (Hair et al., 2021).

Assessing the reflective measurement model entails a thorough review of its reliability and validity regarding the latent variables (LVs) (Chin, 1998; Hair et al., 2021). This involves investigating the relationships between the LVs and their associated items. Two key metrics, composite reliability (CR) and average variance extracted (AVE), are typically employed to gauge internal consistency reliability and convergence validity. The measurement model adopted in this study included five LVs: residents' perceptions of positive (PPI) and negative (PNI) impacts of tourism, residents' STA, SWB, and IPTB. When evaluating the reliability of a model, it is necessary to calculate the loading of each indicator on its LVs and compare it to a specified threshold. Generally, a loading above 0.7 is suitable for the indicator reliability (Hair et al., 2021). Table 3 reveals that all indicator loadings on the respective LVs exceeded 0.7. For each group, the CR values of all reflective LVs were greater than 0.7, as suggested by Chin (2010) and Hair et al. (2021). These findings indicate that the measurement model exhibited high reliability.

Assessing the convergent and discriminant validity of research findings is crucial for establishing their credibility (Hair et al., 2021). Convergent validity is established if the AVE of reflective LVs exceeds 0.5 (Chin, 2010; Hair et al., 2021). The AVE values surpassed the 0.5 threshold for the two groups, demonstrating acceptable convergent validity (Table 3). Moreover, because the CR and AVE values exceeded the required thresholds, it was unnecessary to eliminate any items from the model, as their loadings ranged from 0.721 to 0.917.

Table 4. Assessment results of discriminant validity (HTMT criterion).

LVs	High TI					Low TI				
	PNI	PPI	IPTB	STA	SWB	PNI	PPI	IPTB	STA	SWB
PNI	0.828					0.828				
PPI	0.141	0.820				0.083	0.804			
IPTB	0.171	0.512	0.748			0.169	0.576	0.790		
STA	0.397	0.679	0.390	0.907		0.226	0.528	0.384	0.902	
SWB	0.158	0.262	0.175	0.298	0.808	0.103	0.257	0.288	0.292	0.816

Note. The diagonal values in bold represent the square root of the shared variance (AVE) between the constructs and their corresponding measures. The off-diagonal values represent the correlations between the constructs. To affirm discriminant validity, it is crucial for the diagonal values to exceed all other corresponding entries within their respective rows or columns.

The heterotrait-monotrait (HTMT) ratio of the correlations has recently gained prominence as a superior criterion for assessing discriminant validity compared to traditional methods like the Fornell-Larcker criterion. Although literature has suggested two different thresholds, 0.85 and 0.9, for the HTMT criterion (Henseler et al., 2015), in this study we adopted the threshold of 0.85. Through group-specific model estimation, the outcomes of the HTMT criterion demonstrated the successful establishment of discriminant validity, as all values remained below the critical threshold (Table 4).

Prior to employing PLS-MGA to assess the differences in path coefficients between municipalities with high and low TI, it was essential to validate the measurement models and ensure measurement invariance (Cheah et al., 2023; Hair et al., 2021). The measurement invariance of composites (MICOM) approach, introduced by Henseler et al. (2016), provides a means to assess measurement invariance in composite models when using PLS-SEM models. The MICOM procedure entails three main steps: (1) evaluating configural invariance, (2) establishing compositional invariance, and (3) examining equality of means and variances. The results of the MICOM process revealed partial measurement invariance for the two groups (Table 5).

Structural model Assessment and multigroup analysis

To assess the predictive performance of the structural model, the coefficients of determination (R^2) were computed for all endogenous LVs. The R^2 value for the ultimate endogenous LV (IPTB) was 17.7%. This indicates that only a small portion of the variation in the intentions for pro-tourism behaviours can be explained by its predictors. However, when examining residents' STA, a moderate amount of explained variance was found (30.6%). This indicates that if residents' STA increases in the future, their IPTB are likely to increase as well.

The evaluation of the structural model and the comparison of path coefficients (β) between the two groups are outlined in Table 6. The statistical significance of the path coefficients was determined by calculating p value through bootstrapping procedures with 5,000 sub-samples. The results revealed that PPI had the most significant impact on residents' STA, especially in high TI municipalities ($\beta=0.534$, $p<0.01$), but also in low TI municipalities ($\beta=0.416$, $p<0.01$), thus validating H1. In addition, PPI had a positive effect on residents' SWB, particularly in low TI municipalities ($\beta=0.126$, $p<0.01$), but also in high TI municipalities ($\beta=0.109$, $p<0.05$); thus, H2 was validated. PNI had the opposite effect on STA, which indicates that residents' perceptions of the negative impacts of tourism negatively affected their satisfaction, in both high TI municipalities ($\beta=-0.287$, $p<0.01$) and low TI municipalities ($\beta=-0.180$, $p<0.01$). Thus, H3 was validated. However, it is important to notice that PNI did not have a significant impact on SWB ($\beta=-0.069$, $p>0.05$ in high TI municipalities; $\beta=-0.049$, $p>0.05$ in low TI municipalities), thus rejecting H4. PPI had the most notable impact on IPTB, particularly in low TI municipalities ($\beta=0.355$, $p<0.01$), but also in high TI municipalities ($\beta=0.290$, $p<0.01$), thus validating H5. The effect of PNI on IPTB, however, was negative and significant in low TI municipalities ($\beta=-0.090$, $p<0.05$), but insignificant in high TI municipalities ($\beta=-0.035$, $p>0.05$), partially validating H6.

Table 5. Assessment results of measurement model invariance using permutation.

LVs	Configural Invariance (same algorithms for both groups)	Compositional Invariance (Correlation = 1)		Partial measurement invariance	Equal mean value		Equal variance		Full measurement invariance
		C = 1	CI		Dif.	CI	Dif.	CI	
PNI	Yes	0.994	[0.987, 1.000]	Yes	0.410	[-0.110, 0.106]	−0.056	[-0.151, 0.159]	No
PPI	Yes	0.999	[0.996, 1.000]	Yes	0.102	[-0.107, 0.097]	0.146	[-0.173, 0.175]	No
IPTB	Yes	0.993	[0.989, 1.000]	Yes	0.071	[-0.101, 0.103]	−0.083	[-0.215, 0.208]	Yes
STA	Yes	1.000	[1.000, 1.000]	Yes	−0.040	[-0.101, 0.105]	0.075	[-0.154, 0.157]	Yes
SWB	Yes	0.999	[0.996, 1.000]	Yes	0.078	[-0.102, 0.106]	−0.042	[-0.164, 0.178]	Yes

Note. C: Correlation; CI: 95% Confidence Interval; Dif.: Differences.

Table 6. Results of hypotheses testing.

Hypotheses	β -value High TI	β -value Low TI	β -value differences (High TI – Low TI)	Support		p -value permutation test (H10: a - i)
				High TI	Low TI	
H1: PPI -> STA	0.534**	0.416**	0.118	Yes	Yes	(a) 0.019
H2: PPI -> SWB	0.109*	0.126**	-0.017	Yes	Yes	(b) 0.406
H3: PNI -> STA	-0.287**	-0.180**	-0.107	Yes	Yes	(c) 0.048
H4: PNI -> SWB	-0.069	-0.049	-0.020	No	No	(d) 0.381
H5: PPI -> IPTB	0.290**	0.355**	-0.065	Yes	Yes	(e) 0.236
H6: PNI -> IPTB	-0.035	-0.090*	0.055	No	Yes	(f) 0.225
H7: STA -> IPTB	0.120*	0.104	0.016	Yes	No	(g) 0.450
H8: STA -> SWB	0.186**	0.202**	-0.016	Yes	Yes	(h) 0.417
H9: SWB -> IPTB	0.039	0.121**	-0.082	No	Yes	(i) 0.112

Note. β -Path Coefficient; * $p < 0.05$, ** $p < 0.01$. Bold values designate significant statistical differences.

The path coefficient connecting STA to IPTB was also positive and significant in high TI municipalities ($\beta = 0.120$, $p < 0.05$), but insignificant in low TI municipalities ($\beta = 0.104$, $p > 0.05$), partially supporting H7. For SWB, the results showed that STA had the most notable effect on residents' SWB, particularly in low TI municipalities ($\beta = 0.202$, $p < 0.01$), but also in high TI municipalities ($\beta = 0.186$, $p < 0.01$). Therefore, H8 was supported. The connection between SWB and IPTB was also positive and significant in low TI municipalities ($\beta = 0.121$, $p < 0.01$), but insignificant in high TI municipalities ($\beta = 0.039$, $p > 0.05$), thus partially supporting H9.

Table 6 also presents the pairwise group comparisons facilitated by the nonparametric permutation-based test (NPT). In this examination, random permutations of observations are used across distinct groups. Following this, the model is re-estimated, producing a test statistic for evaluating the distinctions between groups (Cheah et al., 2023). The NPT results demonstrate statistically significant differences between municipalities with high TI and those with low TI for H1(a) and H3(c). The influence of PPI on STA is much stronger in high TI municipalities ($\beta = 0.534$, $p < 0.01$), as is the influence of PNI on STA ($\beta = -0.287$, $p < 0.01$). Therefore, H10 was partially validated.

Discussion and conclusion

This study examined the complex dynamics of tourism based on the residents' perspectives and behavioural intentions, with a focus on their perceived impacts of tourism, STA, SWB, and IPTB. The relationships between these constructs are vital for understanding how residents contribute to sustainable tourism development through their intentions to engage in pro-tourism behaviours, such as protecting the natural and environmental assets, receiving tourists with friendliness, and accepting some costs to receive the profits of tourism (Cottrell et al., 2013; Gursoy et al., 2019; López et al., 2018; Ribeiro et al., 2017; Thyne et al., 2022; Woo et al., 2015). The

examination of these relationships was based on a quantitative approach. The moderating role of TI on these connections was also assessed by applying the PLS-MGA technique.

The results showed that eight out of the nine global research hypotheses were supported or partially supported. The PPI of tourism were found to have a considerable impact on increasing residents' STA and SWB, ultimately shaping their IPTB. These outcomes align with prior studies by Cottrell et al. (2013), Ribeiro et al. (2013, 2017), Eslami et al. (2019), and Tam et al. (2023). The authors indicated that as residents increasingly recognize the positive impacts of tourism on local communities, their satisfaction rises, their assessment of QoL improves, and their willingness to support tourism grows. Concerning the influence of residents' perceptions of tourism's positive impacts on their STA, the effect was notably more pronounced in municipalities characterized by high TI. This outcome was quite expected, as a substantial number of respondents in these areas worked in the tourism sector at the moment of data collection. Consequently, as they were economically dependent on tourism, they tended to appreciate its favourable impacts, thus leading to higher levels of satisfaction, as stated by Ribeiro et al. (2013), Woo et al. (2018) and Gursoy et al. (2019). Other researchers have drawn varying conclusions, including a negative correlation between the perception of tourism benefits and STA, or in some cases, no apparent influence at all (Teye et al., 2002; Wassler et al., 2019).

Conversely, the PNI of tourism revealed to have a hostile effect on residents' STA and IPTB. These findings aligned with the conclusions of Styliadis et al. (2014), Rasoolimanesh et al. (2015), Su et al. (2018), and Gannon et al. (2021). Additionally, the influence of perceived negative consequences on STA was more pronounced in municipalities characterized by high TI. Notably, residents in these predominantly tourist-driven areas were inclined to recognize both the favourable and adverse effects of tourism. This recognition significantly shaped their level of satisfaction or dissatisfaction with the activity (Gursoy et al., 2002; Kim et al., 2013; Ribeiro et al., 2013). The results also revealed that the perceived costs of tourism did not affect residents' SWB. Kim et al. (2013) and Tam et al. (2023), for instance, reported an undesirable effect for the perceived costs of tourism on residents' SWB. In the study by Ivlevs (2017), it was observed that a rise in tourist arrivals was associated with a decline in residents' life satisfaction. This negative correlation was notably more pronounced in locations characterized by a higher TI. However, in the Algarve, while residents tended to perceive the negative impacts of tourism more prominently than the positive ones, it was noteworthy that the well-being of locals remained unaffected by the costs of tourism, regardless of the level of TI. This phenomenon can be attributed to residents' willingness to embrace certain costs, such as overcrowding and increased prices, in return for the economic benefits. Alternatively, they may have developed adaptive social and psychological solutions for mitigating the detrimental impacts of tourism. Such strategies can help them cope with the perceived costs and maintain their SWB (Gonzalez et al., 2018; Rasoolimanesh et al., 2015; Ribeiro et al., 2017; Tam et al., 2023).

STA was also found to positively affect residents' intentions to engage in pro-tourism behaviours and to boost their SWB. Residents' SWB is essential in enhancing their intentions to support tourism progress. These findings align with the conclusions of Woo et al. (2015), Seo et al. (2021), and Gautam (2023). Consequently, one could reasonably infer that the more satisfied residents are with tourism and the higher their SWB, the more robust their inclination towards engaging in pro-tourism behaviours. The BST and SET frameworks were both operational in understanding these relationships, assuming residents' expectation of reciprocal benefits (Wassler et al., 2019) and the spillover effects on their intentions to engage in pro-tourism behaviours (Eslami et al., 2019; Gautam, 2023).

Finally, this study looked for the influence of TI on the aforementioned relationships. The findings revealed notable statistical differences in how residents' views of the positive and negative consequences of tourism influenced their STA. The impact also appeared to be heightened in municipalities characterized by high TI. In the most touristic places, residents

tended to be more prone to recognize the favourable and unfavourable aspects of tourism, and this recognition significantly influenced their overall STA, as highlighted in the studies of Gursoy et al. (2002), Kim et al. (2013), Ribeiro et al. (2013), and Tokarchuk et al. (2016). However, TI did not moderate the other relationships, showing that the connections between residents' STA, SWB, and IPTB remained unaffected by the extent of TI in the Algarve region. The absence of moderation in this context may be ascribed to the social and psychological factors influencing individuals' SWB (Tam et al., 2023; Wang et al., 2022). As underscored by Zheng et al. (2022), the effect of tourism on residents' SWB becomes more prominent when their income derives from the sector. Over half of the respondents in this study, in both high and low TI municipalities, reported not being engaged in tourism-related jobs, which indicates that their SWB is not linked to tourism revenues. The explained variance in residents' SWB was merely 0.8%, in contrast to the more substantial 17.7% observed on IPTB. Remarkably, STA demonstrated a higher predictive power at 30.6%, which suggests that elevating residents' STA, particularly for those engaged in tourism, has the potential to positively affect their well-being and foster support for tourism development, as asserted by Eslami et al. (2019) and Gautam (2023).

Theoretical and practical implications

This study contributes significantly to theoretical advancements and lays the groundwork for future research endeavours. First, it employed the foundational principles of SET and BST to construct and validate a research model encompassing residents' perceptions of tourism benefits and costs, STA, SWB, and IPTB. While previous research has extensively examined residents' perceptions of tourism impacts (Ap, 1992; Eslami et al., 2019; García et al., 2015; Ribeiro et al., 2013), subjective well-being (Ivlevs, 2017; Kim et al., 2015; Tam et al., 2023; Uysal et al., 2016; Wang et al., 2023), and intentions towards pro-tourism behaviours (Cottrell et al., 2013; Liu et al., 2022; Ribeiro et al., 2017; Vodeb et al., 2021), this study is the first to propose a model utilizing satisfaction with tourism, SET, and BST to elucidate residents' intentions to support tourism development while considering the moderating role of TI. Second, this study provides evidence for the spillover effect of residents' STA on their SWB and, consequently, on their IPTB (Seo et al., 2021; Wang et al., 2023).

From a practical perspective, this study highlights the positive repercussions of tourism, which can contribute to increased satisfaction with the industry, improvement in residents' well-being, and a bolstered supportive attitude. Given that the overarching objective of sustainable tourism development is to enhance the well-being of all stakeholders, this research strongly suggests that embracing such an approach will elicit support from local residents. It is thus critical for DMOs to serve as facilitators in this process by actively engaging residents in the planning and supervision of tourism development, and addressing their concerns regarding tourism. This can be accomplished through consistent gatherings between DMOs and local communities to assemble diverse perspectives. Furthermore, DMOs should create initiatives focused on enhancing the economic advantages residents obtain from tourism, given that a significant portion of them disclosed their involvement in the sector. Regardless of their residential location, a significant proportion of respondents concurred that tourism in the Algarve yields considerable economic advantages, including job opportunities and augmented revenues. However, they also acknowledged the negative economic impacts such as rising living costs and housing speculation. The precarious nature of tourism, characterized by challenging and seasonal employment conditions with low wages, is also a prevalent issue in the Algarve, aligning with the findings of Teye et al. (2002), Woo et al. (2018), and Robinson et al. (2019). By adopting the suggested recommendations, destination managers and politicians can have an active role in designing strategies, policies and measures for boosting a more sustainable and comprehensive development within the tourism sector.

Limitations and future research lines

While this study offers multiple valuable contributions to the existing body of knowledge, it is important to acknowledge its limitations, which, in turn, present lines for future research. First, it should be noted that the focus of this study was on residents of the Algarve region, so the results may not be applicable to other destinations that possess distinct attributes. Additional exploration is required to understand the hypothesized relationships across various destinations. Second, residents' responses to tourism are also influenced by social and psychological factors (Gursoy et al., 2019). While this study incorporated residents' SWB, future research could expand the current model by including, for instance, residents' perception of empowerment, community attachment and economic dependency on tourism. This would make it possible to examine whether granting residents' power and involvement in the processes of tourism development influence their support (Eslami et al., 2019; Wang et al., 2022). Finally, responding to the call by Plaza-Mejía et al. (2020), more research should consider the actual behaviours of residents in favour of tourism development.

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