Humanities & Social Sciences Communications

ARTICLE

https://doi.org/10.1057/s41599-024-03782-z OPEN

Perceived tourism implicit conflict among community residents and its spatial variation

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This study explores tourism implicit conflict and its spatial dynamics in rural China. It proposes that residents in different spatial structures within tourism communities perceive implicit conflicts differently. Data were collected through public participatory geographic information system (PPGIS) mapping and semi-structured interviews. The findings reveal that conflict perceptions vary by residential structures. Residents in core and peripheral areas experienced heightened economic and cultural conflicts. In contrast, those in expanded areas were more concerned with issues of tourism governance. The study also highlights two key spatial aspects of perceived conflict: internality, the overlap within their residential areas, and significant externality, which spreads across the entire ancient town. From a combined spatial and psychological perspective, this study proposes the concept of spatial relative deprivation to explain resident's perceived tourism implicit conflict. This study affirms that qualitative-spatial analysis sheds light on socio-cultural phenomena, contributing to a more nuanced understanding of the underlying conflict mechanisms in a spatially explicit manner. The findings suggest that tourism planning should consider the intrinsic and micro-values of communities.

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Introduction

Tourism significantly fuels rural economic development and community sustainability (Stokowski et al. 2021). Yet it also leads to conflicts within communities (Chien and Ritchie 2018; Dredge 2010). Tourism-related conflicts manifest in various contexts, including decisions about the placement of tourism service facilities, renaming tourism destinations, land-use planning, and establishing protected conservation areas (Brown 2006; Brown and Raymond 2014; Dredge 2010). Such conflicts often originate from the inherent incompatibility of the parties' aspirations, priorities, or values (Almeida et al. 2017). Tourism conflict transcends explicit episodes of violent disruptions or collective occurrences and includes implicit manifestations. These implicit dimensions include psychological discomfort, grievances, rejection behaviours, and individual confrontations, forming an intricate spectrum (Zhu et al. 2022). However, existing literature has provided limited attention to implicit conflict, especially overlooking its spatial dynamics.

Tourism conflict is not just ideological; it also has geographical and spatial dimensions (Yang et al. 2023; Zeng et al. 2022), reflected both in the geographical distribution and in the 'relational space', whereby the space of conflict is constructed by social relations, experiences, and power (Massey 2005; Tomassini and Lamond 2023). According to core-periphery theory, the centrality and concentration of capital ownership inevitably drive the formation of an uneven spatial structure. The core is usually economically developed and exploits the surplus value generated by the (semi)periphery (Chancellor et al. 2011). Soja (1980) argues that once a core-periphery spatial structure is established, the socio-spatial dialectic seeks to maintain it. Given the predominance of neoliberal capitalism, asymmetrical power geometries are immersed in tourist spaces (Tomassini and Lamond 2023). Introducing new ways of using space, altering economic flows and power relations between local stakeholders, and transforming landscapes, tourism integrates traditional communities into larger-scale development discourses (Wang and Yotsumoto 2019; Yang et al. 2013) while shaping and exacerbating power geometries within communities, where residents of different areas do not always share equal spatial power (Su et al. 2022).

The uneven spatial structure of tourist communities and its concomitants have received scholarly attention. Early studies on tourism impacts have highlighted the significance of the distance between the tourism centre and residents' homes as a critical variable influencing their perceptions of tourism impacts and attitudes (Harrill 2004; Jurowski and Gursoy 2004). Recent research drawing on the core-periphery theory demonstrates that residents in different spatial structures experience notable variations in their perceived quality of life (Chancellor et al. 2011; Su et al. 2022). Therefore, more studies investigating resident attitudes, behaviours, perceptions, and experiences in different types of spatial structures are required (Uysal et al. 2016). Meanwhile, existing studies approach tourism conflict either from an absolute Cartesian spatial perspective or a subjective sociological perspective (Muñoz et al. 2019; Wolf et al. 2018; Yang et al. 2013), but there remains a gap in integrating these disciplinary paradigms, hindering a holistic understanding of the breadth and impact of conflict.

This study addresses the knowledge gaps by examining how residents in distinct spatial structures within tourism communities experience implicit conflict attributes and their spatial distribution characteristics. It further proposes the concept of spatial relative deprivation as an explanatory resource for interpreting heterogeneous residents' experiences and perceptions of tourism implicit conflict from a spatial and social-psychology perspective. Drawing on an extensive understanding of the core-periphery theory, the research area is classified into three distinct types: core, expanded, and peripheral. Each of these three types represents different distance levels and the degree of tourism development. Residents living in these areas or participating in tourist reception were chosen as respondents. A qualitative-spatial mixed-methods approach, incorporating grounded theory and spatial analysis, was employed to analyse the data.

This study contributes to the literature in the following ways. First, it represents an innovative exploration that combines geographical spatial analysis methods with social conflict theories, offering a spatially explicit model for visualising and informing tourism conflict. Second, the study extends the understanding of tourism conflict by analysing it at the community scale and exploring its spatial aspect through the analysis of the integrated conflict-space effects of tourism's negative impacts. Third, this study introduces the concept of spatial relative deprivation as a means to comprehend the negative emotions experienced by residents resulting from spatial comparisons in the context of unequal tourist development. This concept expands upon the existing framework of relative deprivation theory.

Literature review

Conflict, tourism implicit conflict in rural communities. The term 'conflict' has been defined in various ways. In a narrow sense, conflict should be action-centred; a relationship or intention can only be recognised as a conflict when it evolves into an open struggle (Litterer 1966). However, this view ignores the dynamic development of conflict. Robbins and Judge (2023) define conflict broadly as a process that begins when one party perceives that another party has negatively affected or is about to negatively affect something the first party cares for. They posit that its process encompasses five stages: potential opposition or incompatibility, cognition and personalisation, intentions, behaviour, and outcomes. Drawing on a broad definition of conflict, this study argues that conflict is motivationally or cognitively centred and embodies a dynamic process that, if properly resolved, promotes community development.

Tourism is crucial for revitalising rural communities (Yang et al. 2021). It holds the potential to achieve equitable benefit distribution among tourism communities and locals, along with enhancing residents' self-esteem and capabilities. However, these narratives and ideals have been criticised as mere concepts (Rastegar 2022). Some authors emphasise the negative impacts that tourism has imposed on communities and residents (Rastegar et al. 2021; Rastegar and Ruhanen 2022), leading tourism communities to experience development-related conflicts (Guo and Jordan 2022). Recent calls have been made for more in-depth investigations of conflict in rural tourism communities (Wang 2021, 2022; Wang and Yotsumoto 2019). Conflicts within rural tourism communities manifest in complex and multifaceted ways (Wang 2022). Based on their specific interactional formations, conflict can be delineated into external conflict (Guo and Jordan 2022), intra-community conflict (Chien and Ritchie 2018), and tourist-resident conflict (Tsaur et al. 2018). Tourism-related conflicts can be broadly categorised into three categories: socio-cultural (Cornet 2015; Jones and Shaw 2012), economic conflict (Yang et al. 2013), and environmental conflict (Dredge 2010).

Conflicts in tourism typically originate from divergent attitudes or behaviours among community stakeholders, particularly regarding benefit allocation and shared values (Brown and Raymond 2014). It is commonly agreed that economic benefits are a primary cause of conflicts in most tourist villages. In the context of global capitalism, decisions regarding tourism development often rest in non-local hands (Carlsen and Buttler 2011;

Lewis-Cameron and Roberts 2010). This external control tends to prioritise profit and economic growth and overlook the well-being of locals (Boukas and Ziakas 2016), leading to resident-developer conflicts. Conflicts also stem from differences in cultural values and social norms (Zeppel 2010). In addition, political-institutional factors are considered to be an inherent source of conflict in tourist communities, such as lax regulation, lack of recourse, or blocked recourse (Wang 2022).

Although the existing literature recognises the complexity of tourism conflict, they suggest that the conflict experiences of community residents are homogenous and that there is a clear emphasis on explicit conflict that obscures the more subtle implicit aspects. Tourism implicit conflict refers to the negative oppositional behaviour that emerges from the dual impacts of external factors—such as imbalances in the distribution of benefits and clashes in values—and internal feelings of dissatisfaction experienced by individuals or groups in tourism development. It often manifests as psychological discomfort, complaints, and rejection among interested parties, with low disruptive and latent properties (Zhu et al. 2022). Exploring implicit conflict is a deepening and broadening of tourism conflict research and helps to manage conflict at its source. In addition, at the methodological level, the conventional understanding of conflict at the community level has primarily relied on sociological paradigms utilising social surveys and qualitative methodologies (Wang 2021; Wang and Yotsumoto 2019; Yang et al. 2013). Few studies have identified the conflict potential spatially, with even fewer studies exploring the spatial characteristics of conflicts within tourism communities.

Spatial (in)justice, core-periphery theory and relative deprivation. The spatial turn in the social sciences demonstrates that rather than a static container, space is relational, imbued with power geometries, the product of interrelations, and always under construction (Lefebvre 1984; Massey 1994, 2005). This relational nature is evident in countries' geopolitical structures, which consist of both core and peripheral regions. Core regions typically refer to urbanised areas with significant economic capacity, political power, and social influence. In contrast, peripheral areas, often rural, tend to depend on and support the core by providing natural resources, capital, or labour (Chancellor et al. 2011).

The core-periphery phenomenon manifests at various scales, from national and regional levels to city, town, and community. Existing studies indicate that inequalities often characterise the relationship between core and peripheral areas in tourism communities. For example, the literature suggests that residents in core areas reap the most economic gains and enjoy a higher standard of living, while those in peripheral locations may experience fewer negative effects due to reduced tourist activity (Clark and Nyaupane 2022; Harrill 2004). The conceptual framework of core-periphery relations within tourism communities is intricate and dynamic, necessitating a nuanced understanding of its various dimensions. On the one hand, the demarcation between core and periphery is context-dependent, meaning multiple criteria are used to distinguish between the two. The traditional definition of the periphery, based solely on its geographical distance from the core, has been critically reevaluated, especially in light of advancements in transportation technology that have altered perceptions of distance and time. Complementing this, Chancellor et al. (2011) operationalised the core-periphery dichotomy based on the presence or absence of tourism infrastructure.

On the other hand, tourism's space production contributes to the spatial structure's fluidity, resulting in uneven commodification and monetisation of land. In China's rural tourism narrative, "preserving ancient towns, developing new areas, promoting economic growth, and fostering tourism" has significantly reshaped the internal core-periphery dynamics, reshuffling opportunities and power within tourism communities (Mou and Cheng, 2023). Specifically, once the main providers of tourist attractions, core areas have experienced a relative decline in their economic status and a weakening of their control over resources. Conversely, with the support of foreign investment and government policies, peripheral areas are emerging as new focal points for economic development and infrastructure. Therefore, evolving core-periphery relations in tourism communities necessitate a nuanced approach that addresses the concerns of different resident groups and provides a theoretical tool to explain their underlying mechanisms. However, to our knowledge, no existing research has specifically explored how residents living in different spatial configurations perceive conflict.

In recent years, the concept of relative deprivation, developed in the 1950s, has been acknowledged as an important explanatory vehicle for understanding social-spatial injustice and conflict. Stouffer et al. (1949) defined relative deprivation as unbalanced psychological experiences perceived by people who compare the situation they are into others or their past conditions and realise that they have less of what they believe to be entitled to than those referenced. Currently, an increasing number of tourism scholars have introduced this concept to explain host community attitudes towards tourism development (Peng et al. 2016), the formation of anti-tourism groups (Xu and Sun 2020), and the causal analysis of social conflict in rural tourism (Wang 2021). In contrast to mainstream theories explaining the impact of tourism, relative deprivation is a powerful theoretical tool in counselling the discontent of marginalised or disadvantaged social groups (Peng et al. 2016). Peng et al. (2016) argue that rapid tourism development will result in the problem of relative deprivation to different extents in the villages, and there is a negative correlation between the extent to which host residents benefit from tourism and the level of relative deprivation. Wang (2021) adds contractual deprivation to the framework of relative deprivation, arguing that these two types together trigger discontent among local villagers and contribute to conflict in tourism communities. However, despite its effectiveness in analysing many social issues that arise in tourism development, the intensive and systematic study of the relative deprivation theory is rarely documented in the tourism field, theoretically or empirically.

Methodology

Study site. Qingmuchuan Ancient Town, located in Ningqiang County, Hanzhong City, Shaanxi Province, China, stands at the intersection of three provinces (Shaanxi, Gansu, and Sichuan). It incorporates the distinctive local cultures of Ba-Shu, Qin, and Longnan. The development of tourism in the Old Town of Qingmuchuan began in 2005. Due to its unique historical and cultural resources and well-preserved ancient architectural complexes, the town was officially designated as a Chinese AAAA-rated tourist attraction by the Shaanxi Provincial Tourism Attractions Quality Rating Committee on December 8, 2014[1].

Traditionally, its boundaries were limited to the ancient street of Huilongchang, known locally as the old street area (Laojie). However, as tourism grew, a new street (Xinjie) was added across the river, expanding the town's spatial range. This development increased the town's capacity to welcome tourists and created a distinct spatial division. The old street area is rich in historical resources and densely populated by tourists. However, building restrictions limit the number of stores, allowing only small local vendors. Consequently, local revenue from tourism remains low (Zhang 2021). In contrast, while lacking historical attractions, the

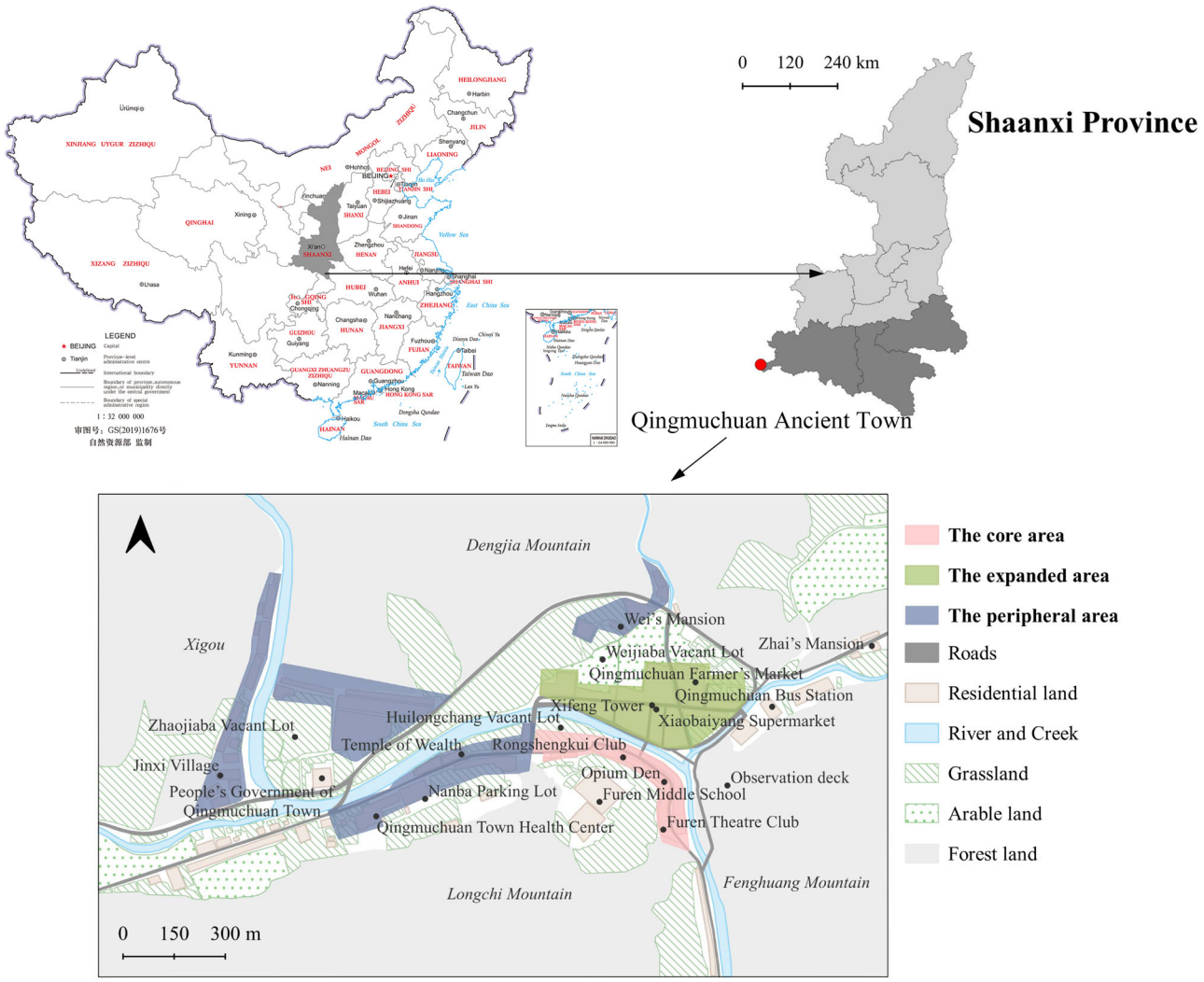

Fig. 1 Schematic diagram of case location.

new street area is bustling with stores, restaurants, and accommodations. Many of these establishments are run by locals and migrants, leading to a higher economic reliance on tourism. On the town's outskirts, villages like Weijiaba, Nanba, Zhaojiaba, and Jinxi (Jinxi Xincun) have seen minimal tourist engagement despite their rich natural resources. The intertwining of tourism development and heritage conservation has given rise to conflicts for local communities. In the pre-research fieldwork, an interviewee mentioned that a resident of the old street area resorted to burning his house to express dissatisfaction with the traditional domestic architecture preservation policy. The existing situation of tourism-related conflict in Qingmuchuan Ancient Town offers a pragmatic backdrop for conducting this study.

Aligned with the research objective and based on core-periphery theory, this study classified the research area into three distinct categories: the core area about the old street, the expanded area encompassing the new street, and the peripheral area comprising four villages (Weijiaba, Nanba, Zhaojiaba and Jinxi Villages), as depicted in Fig. 1. This classification allowed for a more in-depth exploration of the spatial aspect of tourism conflict at the community level.

Data collection process. This study employed a mixed-methods approach, utilising semi-structured interviews and participatory mapping (PM) to gather data. The collected data were processed through both qualitative analysis and GIS-based spatial analysis. The reasons are as follows. First, tourism conflicts are influenced by the geographical environment, arising from incompatible perceptions and uses of spatial resources. Due to the distinct spatial attributes of these resources, conflict dynamics among different groups are also spatially characterised (Chu et al. 2016). Revealing these spatial characteristics using spatial methods can make conflicts and compatibility of human uses more spatially explicit and thus potentially manageable (Moore et al. 2017). Second, PM as a visual methodology allows marginalised populations to express their local knowledge, often ignored by powerful actors (Brown and Kyttä 2014). It allows community residents in vulnerable positions during tourism conflicts to voice their experiences, aiding effective community governance (Zhu et al. 2022). Third, over the past two decades, tourism conflict studies have increasingly used participatory mapping with GIS technology, including PPGIS, VGI and GPS tracking. PPGIS is particularly effective in revealing actual or potential conflict locations (Hausmann 2019; Wolf et al. 2018). PPGIS allows spatial data layers containing subjective perception information to be layered with physical GIS data layers to examine spatial correlations between mapped places and physical features (Brown and Kyttä, 2014). This helps grasp the conflict's geographical background.

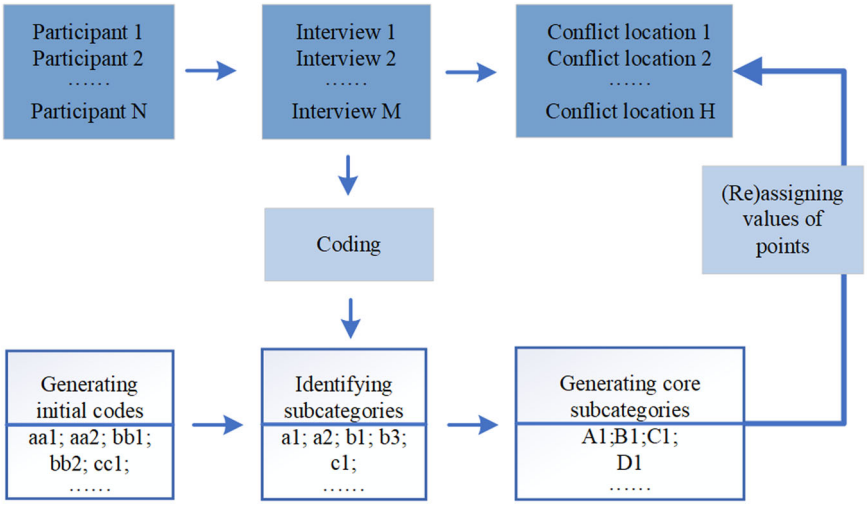

Fig. 2 Methodological outline of spatialization of qualitative data.

To ensure the accuracy and standardisation of data collection, the researchers conducted two days of pre-research work from 18 August 2020 to 19 August 2020 in the study area prior to the formal research. Based on the pre-research findings, the interview content and research structure were adjusted and improved. Formal research commenced on 20 August 2020 with a team of nine research members who are doctoral candidates and postgraduate students specialising in tourism management or human geography. Given that some topics were relatively sensitive for the informants, all research team members underwent communication skills training to avoid potential conflict, and this study used pseudonyms for all interviewees.

The research team conducted a 10-day onsite research and data collection process, with 330 residents participating. The study's sample selection adhered to the following principles: Firstly, it prioritised residents who have resided in Qingmuchuan Ancient Town for an extended period or external merchants who have conducted business there for more than five years. The sample selection also aimed to include diverse demographic characteristics. Secondly, the study aimed to ensure a uniform distribution of the selected sample across all areas within the research domain, striving for a balanced representation from each of the three identified areas. Finally, in-person household interviews were used to collect data.

Given that conflict is a perception (Robbins and Judge 2023) and its implicit aspect often acts as an 'alarm indicator' preceding manifest conflict outcomes (Zhu et al. 2022), participants' negative affective experiences were used to identify tourism conflict. Research tools included high-resolution satellite-image hardcopy maps of Qingmuchuan Ancient Town at a scale of 1:4000, stickers, and questionnaires (Brown and Raymond 2014). The questionnaire comprised two main parts. The first part featured demographic information, while the second part consisted of open-ended interview questions related to tourism conflicts within communities, such as: (1) Within the map, which locations hold significance for you? Can you elucidate why they are noteworthy? What activities do you typically engage in at these places? (2) Furthermore, are there specific areas within the map where you have experienced dissatisfaction, negative emotions, or divergences? Could you shed light on the reasons and specific events that led to these feelings? (3) Have you experienced negative antagonistic behaviour during tourism development, and why?

During the interview phase, participants were first briefed about the aim of the research. They were then allowed to decide whether their interviews could be recorded. Subsequently, they were provided with a hardcopy of a satellite-image-based map and invited to mark conflict locations using sticker dots. Considering the importance of map literacy in the PPGIS study (Wolf et al. 2018), the researchers assisted populations less acquainted with maps in pinpointing the location of their residences or significant landmarks within the Qingmuchuan Ancient Town.

Data analysis. The data were processed using a mixed method rooted in methodological eclecticism. This approach combines qualitative analysis and GIS spatial analysis (see Fig. 2) and involves the following main steps:

(1) Qualitative analysis: The recordings of semi-structured interviews were transcribed into text format and saved as Word documents. Supplementary sources, such as field notes, memos, and government documents, were also utilised. NVivo11 software was employed to manage and summarise the text data. Following the fundamental procedures of grounded theory—open coding, axial coding and selective coding (Corbin and Strauss 1990)—two researchers independently conducted parallel coding to identify and search for themes. They then compared, supplemented, and refined the results to maximise objectivity and completeness in the coding analysis and theme extraction. Additionally, the statistical functions of NVivo software were used to calculate the frequency of each subcategory, and SPSS software was employed to determine their proportions relative to the total codes.

(2) Spatial visualisation of the qualitative data: This step was achieved by first obtaining the thematic categories of residents' perceived conflict content. Next, based on the affiliation between the category and the corresponding interview text, as well as the correspondence between the content of the text and the spatial point data collected in the field, the thematic category number is assigned to the corresponding point data in the GIS software and entered into its attribute table so as to realise the visual representation.

(3) Density mapping: This method was used to identify the spatial distribution and agglomeration of conflict. Kernel density rasters were generated in ArcGIS 10.6 from each conflicting value, using a grid cell size of 25 m and a search radius of 150 m. The grid cell sizes and search radii choices were based on potential mapping errors from the participant point placement and differences in the size and map scale of the study areas (Chu et al. 2016).

(4) Standard deviation ellipse (SDE) is widely applied for measuring geographical elements' spatial statistical distribution

Table 1 Socio-demographic profile of survey respondents ($N = 330$).

	N	%
Gender		
Male	171	51.82
Female	159	48.18
Age		
Under 18	13	3.94
18–29	38	11.52
30–44	85	25.75
45–59	132	40
60 or older	62	18.79
Educational level		
Below Primary	69	20.91
Primary	80	24.24
Junior High School	112	33.94
High School	41	12.43
College or above	28	8.48
Annual household incomes		
RMB 10,000 or under	38	11.52
RMB 10,000–40,000	92	27.88
RMB 40,000–70,000	107	32.42
RMB Over 70,000	93	28.18

features. The SDE method includes four basic parameters: the gravity centre, long axis, short axis, and azimuth (Wang et al. 2022). This study used this method to reveal the overall spatial distribution patterns of tourism implicit conflict.

Results

Respondents' profiles. Table 1 presents the respondents' demographic profiles. Overall, 330 residents participated in the mapping activity (one or more markers were placed). Semi-structured interviews were conducted, including 103 residents of the old street area, 120 of the new street area and 107 of the peripheral area. The participant cohort was gender-balanced, comprising 159 women and 171 men, with 279 respondents over 30 years old. In terms of annual household income, 60.6% of the participants had more than 40,000 RMB.

Descriptive analysis of tourism implicit conflict categories. Based on the interviews, 2221 words, phrases, and short sentences were coded (Table 2), leading to the construction of four conflict types, which consisted of 18 subcategories. Significant frequency differences were observed among residents of the three areas for the secondary categories (Fig. 3).

Management conflict refers to the resistance, dissatisfaction, or personal confrontation that arises in tourism development when the daily lives of community residents are constrained by structural factors such as policies, rules, and regulations (Almeida et al. 2018). This category has the highest number of encoding nodes and includes five subcategories. Residents in all three areas complained of a shortage of medical equipment and staff. Compared to respondents of other areas, the core area perceived significant conflict related to constrained lives and livelihoods and the anomie of public authority. Respondents in the expanded area perceived more conflict regarding the absence of government regulations.

Economic conflict involves disagreements between community residents and other stakeholders concerning socio-economic activities related to economic income, distribution and livelihoods (Wang 2022). Respondents in the core and peripheral areas argued that there was a clear imbalance in business investment in the community. A large amount of capital and government development investment was overly concentrated in certain areas, without achieving the community's overall economic development. Respondents in peripheral areas perceived a widening gap between the rich and poor within their communities. Unregulated competition between tourism businesses and restricted business operations point to the unethical business practices of tourism economic agents and excessive government intervention in the tourism economic market.

Environmental conflict is a lack of compatibility between human activities and the environment (Muñoz et al. 2019). According to respondents' accounts, despite the town's inability to accommodate high-intensity activities due to spatial constraints, there is a lack of an official government strategy to regulate tourist activities. This lack of control has resulted in a decline in residents' quality of life during peak tourist seasons, notably because of the sightseeing vehicles. Additionally, the respondents noted the issue of greening incongruity, indicating the absence of environmental management in open spaces or the mismatch between the landscape design of green spaces and the current ambience of Qingmuchuan Ancient Town. In terms of residents' perceptions of environmental conflict, those in the expanded area showed higher sensitivity than those in the other two areas, whereas those in the peripheral area had the lowest sensitivity.

Cultural conflict arises when the tourism sector disrupts local traditional practices, the meaning of place, and cultural customs shared by the community (Yang et al. 2013). Respondents of the core area raised concerns about the detrimental effects of homogenised tourism development on an ancient town's image. Through phrases such as 'fake Old Town,' 'not as good as it used to be,' and 'nothing to see,' they expressed their belief that the town's authenticity has been compromised. Conversely, respondents in peripheral areas expressed strong dissatisfaction with the erosion of their town's traditional social and cultural ecology, as they perceived financial gain as becoming the prevailing value. Furthermore, respondents in all three areas expressed shared concerns about the damage to cultural relics caused by tourists.

Spatial distribution of tourism implicit conflict

The overall spatial distribution patterns of tourism implicit conflict. The standard deviation ellipse method was used to capture the overall similarities and differences in the spatial distribution of tourism implicit conflict. In general, according to the mapping results of the different resident groups, the main trend direction of the conflict distribution is similar, with a north-west-south-east orientation and rotation values between 82° and 86° (Fig. 4). However, in terms of the spatial extent of the conflict, the further the residence is from the tourism core area, the greater the spatial extent of the distribution of the conflict mapped by the residents, which were 0.48, 0.76 and 0.89 km^2, respectively. The gravity centre has changed significantly, with a westward trend. Regarding the degree of spatial aggregation, residents in the core area exhibited a higher concentration in conflict mapping (YStdDist = 241.37 m), primarily encompassing the old street area and parts of the new street area. Conversely, those in the peripheral area displayed a more dispersed conflict mapping (YStdDist = 359.05 m), spatially covering the three study sub-areas. Residents in the expanded area fell somewhere in between, with a concentration around the old street area and the new area (YStdDist = 347.83).

Hotspots of the spatial distribution of tourism implicit conflict. After conducting a qualitative analysis, we combined spatial visualisation and kernel density mapping to examine the conflict's spatial distribution and structural features. The spatial

Table 2 Category composition of tourism implicit conflict from the perspective of residents.

Categories of conflict	Subcategories of conflict	Example (# excerpts from interviews)	*F*	%
Management conflict	Poor public services	Transportation is very inconvenient, there are only one or two shuttles per day.	642	29
	Lack of integrated planning	Fertile farmland has been expropriated for several years, but it has not been fully exploited yet.	565	25
	Constrained lives and livelihood	Even though the house is dilapidated, the government does not allow us to repair it.	88	4
	Anomie of public authority	To earn money, the village chief intentionally built the Qifeng Building near his house.	70	3
	Absence of government regulation	The business administration did not manage or punish supermarkets that sold expired food.	52	2
Subtotal			*1417*	*64*
Economic conflict	Rising cost of basic necessities	Vegetables are unaffordable after the development of tourism in Qingmuchuan Old Town.	137	6
	Uneven commercial investment distribution	The government invests only in the new streets and does not care for us here.	121	5
	Unregulated competition of tourism businesses	Many businesses solicit customers near the parking lot, which seriously damages the local image.	53	2
	The widening wealth gap	Tourism makes only people in the new streets rich; we country-dwellers are still poor.	46	2
	Constrained commercial activities	We can't set up stalls in the open spaces outside the stores, but residents of the old street can.	41	2
Subtotal			*398*	*18*
Environmental conflict	Excessive crowding and noise pollution	Sightseeing vehicles are parked randomly, which makes it easy to block traffic.	107	5
	Garbage pollution	There is a lot of garbage near the farmer's market, and it smells very bad.	44	2
	Water pollution	Businesses directly discharge sewage into the river, resulting in poorer water quality than before.	31	1
	Greening incongruity	The greenery of the vacant land is too cartoonish and does not reflect the local characteristics.	21	1
Subtotal			*203*	*9*
Cultural conflict	Erosion of local distinctiveness	The new street is a fake destination made up of newly renovated buildings.	78	4
	Over-commercialisation	The old town has fewer attractions and has too many businesses.	29	2
	Inadequate heritage protection	Tourists deliberately destroy the Fei Feng Bridge, which makes us sad and distressed.	39	2
	Degeneration of local folkway	Residents are not as stocky and honest as before, and many of them often rip off tourists.	39	2
Subtotal			*185*	*9*
Total			2221	

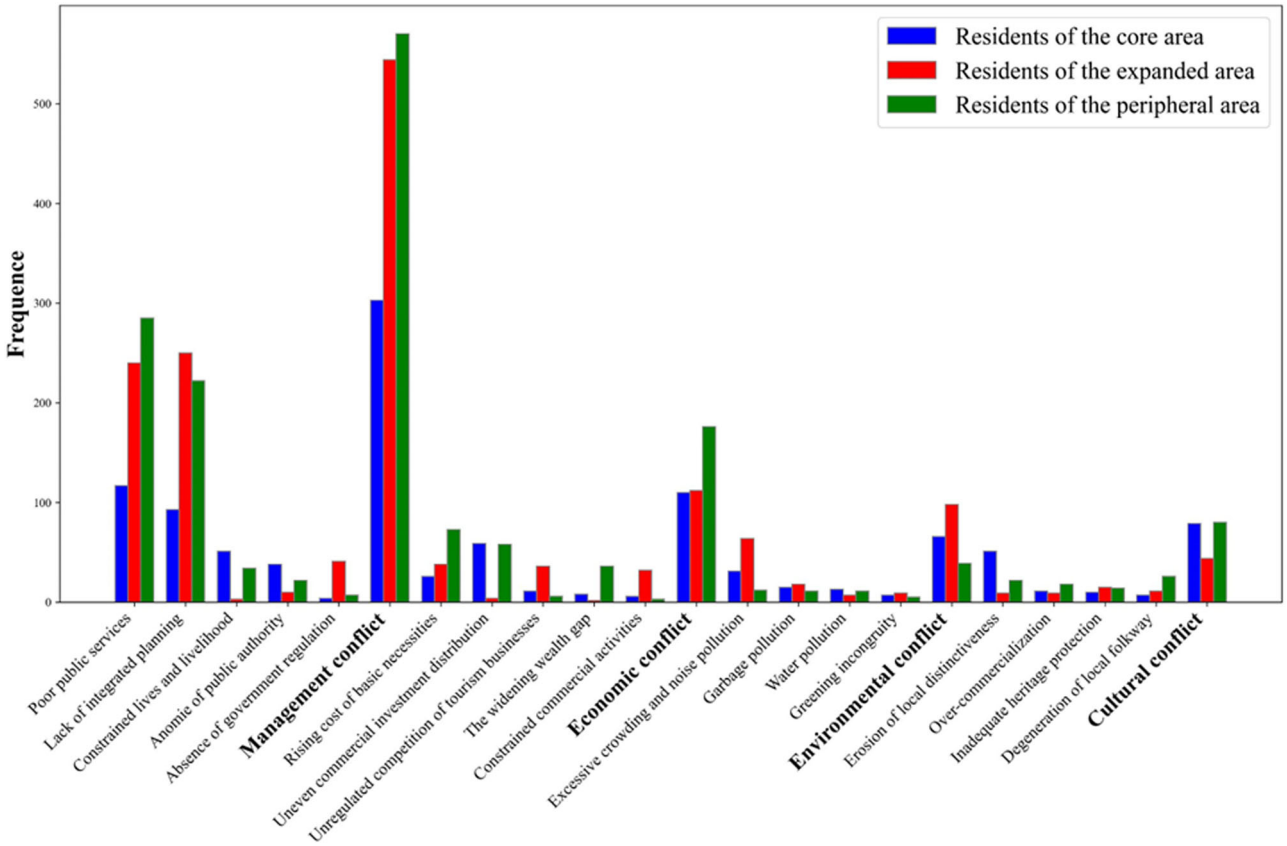

Fig. 3 Comparison of frequency of secondary categories of tourism implicit conflict.

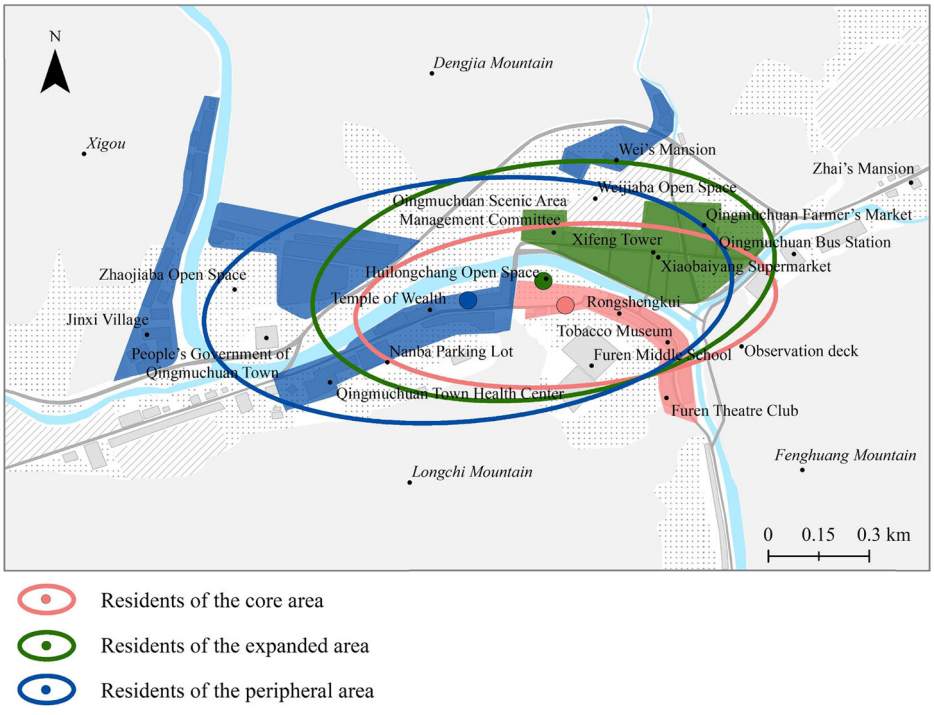

Fig. 4 The SDE of tourism implicit conflict mapped by residents.

distribution of tourism implicit conflict exhibited a distinct externality: PPGIS markers indicating conflict are scattered throughout the community, often extending beyond their daily residence boundaries. Some conflicts, however, occurred within or overlapped with their respective residential areas. When comparing the spatial distribution of perceived conflict across the three groups, distinctive features of spatial isomorphism and heterogeneity emerged (Fig. 5). Despite these groups sharing common perceptions of conflict in specific locations, each exhibited unique spatial structures or patterns.

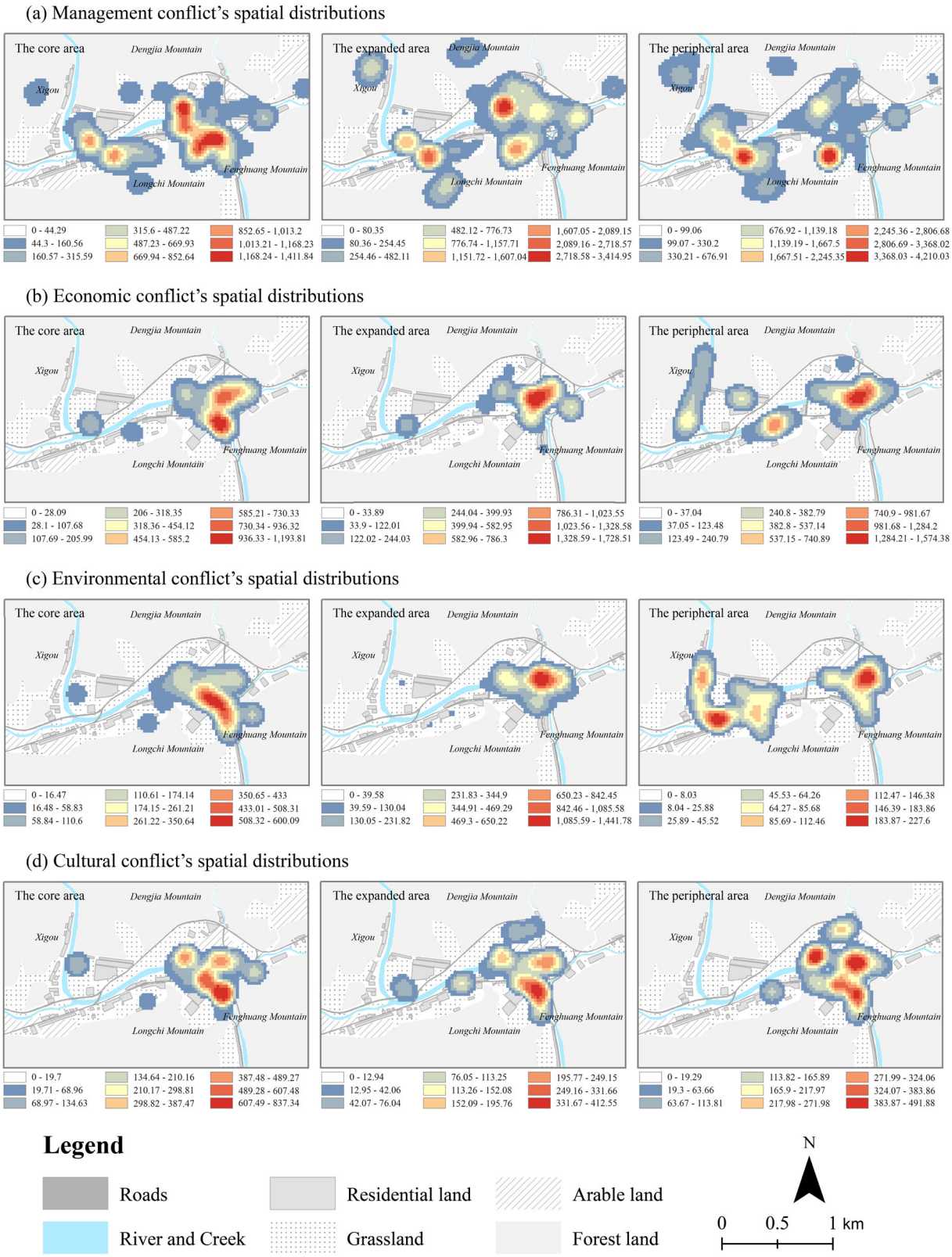

Fig. 5 Hotpots of Spatial distribution of tourism implicit conflict. The figure shows the spatial distributions of management conflict (**a**), economic conflict (**b**), environmental conflict (**c**), and cultural conflict (**d**) across core, expanded, and peripheral areas, with varying intensities indicated by colour gradations.

Management conflict. Management conflict displays the widest spatial distribution among the four types of conflict (see Fig. 5a). It spans various locations, including the new street, the old street, public service facilities, and administrative entities. This wide distribution indicates that management conflict is significantly influenced by the conflict's location and the parties involved (Wolf et al. 2018).

Each group expressed dissatisfaction with tourism development and the delivery of communal public amenities. However,

when factors such as conflict density values, geographical distribution, and thematic context are considered, more subtle differences emerge among these groups. Respondents in the peripheral areas emphasise issues related to community-centric public services, such as poor healthcare, a lack of educational resources, and a shortage of leisure facilities. Conversely, those in the expanded area predominantly disagree with the prevailing tourism development strategies and how they are implemented, as evidenced by 41 coding instances concerning the subcategory of the absence of government regulation. Notably, residents in the core area experience the most pronounced encroachment on their daily living spaces, as evidenced by the highest frequency of 51 occurrences in the subcategory of restricted lives and livelihoods. As the respondent conveyed:

While the Huilongchang Vacant Land is indeed covered in wild grass, governmental regulations prohibit us from relocating and constructing houses there. Numerous ageing houses on the old street have deteriorated, leaving us in a state of apprehension. (A036, male, core area resident)

The construction of new houses in the core area faces strict regulation due to stringent rules for protecting heritage and prioritising tourism. Yet, with a growing population and a push for modern amenities, there is a rising urgency to build houses. This creates a significant dilemma: the need to safeguard heritage and bolster tourism is at odds with the vital housing requirements of residents. Similar challenges with housing construction are observed in other Chinese tourist villages (Wang 2021). Consequently, respondents in the core area have predominantly identified areas governed by local authorities—particularly those concerning housing construction and undeveloped land resources—as well as the local governments themselves as the central zones of conflict.

Economic conflict. In contrast to management conflict, economic conflict shows a more concentrated spatial distribution, as depicted in Fig. 5b. Xiaobaiyang Supermarket and Qingmuchuan Farmer's Market stand out as prominent zones of economic conflict, a sentiment echoed by respondents from all three areas. Nevertheless, significant differences exist in the spatial dimension of these perceived economic conflicts. The economic conflict's spatial structure, as perceived by respondents in the core area, demonstrates a bimodal distribution. One of these zones is situated on the old street, while the other can be found on the new street. These residents' primary grievance is the unequal distribution of tourism benefits within these zones, as the following quote illustrates:

Although tourists visit our area to see, they predominantly spend their money on the new street, leaving the residents and businesses on the old street with limited economic benefits. (A018, male, core area resident)

Tourism development has accelerated the changes in spatial configuration within these tourism communities. This rapid transformation heightens the residents' sense of relative deprivation, particularly when comparing themselves to other groups or reflecting on their past or imagined future living conditions. In this study, residents of the core area primarily perceived two types of deprivation: horizontal and vertical (Xu and Sun 2020). On the one hand, they believed that the benefits reaped by residents of the new street came to their detriment. Despite sharing their living spaces and ancestors' cultural heritage with tourists, they have seen minimal returns. Conversely, residents of the expanded area, who neither share their daily living spaces nor face restrictions on commercial operations, have leveraged the ancient town's reputation, founded by the core area, to achieve significant profits. However, it is also notable that, where the exploratory stage of tourism once held potential, core zone residents currently see their economic environment declining, feeling that livelihoods are becoming more uniform.

From a different perspective, respondents in the expanded area primarily mapped economic conflict on the new street while viewing Qingmuchuan Farmers' Market as a secondary zone of rising economic tension. Their main concern revolves around dwindling revenues, attributed mainly to heightened competition.

Lastly, the survey of respondents in the peripheral area reveals the broadest range of economic conflict, covering both the peripheral and expanded areas. This wide-ranging view accentuates the evident discrepancies in community economic development. As expressed by a resident:

The residents of both the new and old streets have become the bourgeoisie, while we remain farmers. Tourism has brought us little benefit or value, compelling us to seek employment elsewhere to earn a living. Even when we migrate from the protected area, we do not receive any subsidies or assistance. (C048, male, peripheral area resident)

Respondents in the peripheral area perceive economic conflict arising not only from the unequal distribution of tourism benefits but also from being spatially marginalised stemming from the prevailing tourism development pattern. Due to their geographical positioning and limited engagement in the tourism sector, these individuals frequently experience feelings of exclusion and diminished value. A common description from many in the peripheral area portrays their living conditions as 'poor, backward, or non-modernised'.

Environmental conflict. The spatial distribution of environmental conflict primarily exhibits an internal focus, with all three groups highlighting environmental issues within their respective residential space (see Fig. 5c). These concerns range from water pollution and the inadequacy of green spaces to overcrowding.

Respondents in the expanded area perceive the environmental conflict to be most concentrated within their residential spaces, with the high-value zones predominantly situated in the new street area. A major concern is the host-tourist conflict, primarily attributed to the tourists' unruly parking and riding behaviour associated with the sightseeing tricycles. As a resident stated:

The new street's sightseeing tricycles urgently need better management. Tourists' haphazard riding of these tricycles presents substantial safety concerns, given the occurrence of accidents and regular confrontations with pedestrians on the main avenue. The absence of a proper parking zone only compounds the issue, as individuals resort to indiscriminate parking. This situation causes significant discomfort among our residents. (B088, female, expanded area resident)

The residents of the expanded area recount environmental conflict, which aligns closely with the empirical insights from Wolf et al. (2018) study on visitor conflict in protected areas. This highlights the variances in methods, intensities, and governing norms of resource usage are the main catalysts for the emergence of these disputes.

Core area respondents perceive the high-value zones of environmental conflict as largely dispersed within the old street area, illustrating a linear distribution pattern along this historic avenue. They particularly spotlight the overcrowding within the touristic spaces of the old street and emphasise the pronounced noise disturbances originating from Fenghuang Mountain's observation deck.

In contrast, respondents in the peripheral area perceive environmental conflict as extending beyond their residential areas to include the new street area, indicating significant externality. They emphasise water pollution issues in their residential areas and overcrowding in the new streets.

Cultural conflict. Figure 5d shows that high-value zones of cultural conflict are notably concentrated within the central tourist area. According to respondents from the core and expanded areas, cultural conflict primarily exists in the domains of new and old streets, as well as at tourist landmarks. This distribution pattern suggests a strong link between cultural conflict and the geographic positions of preserved traditional architectures. The resident's narratives further elucidate this connection:

The old street has been completely transformed into a commercial area, and the authentic local atmosphere of the ancient town has been disrupted (A070, female, core area resident).

Qingmucun Ancient Town stands out for its splendid historical architectural feats. Beyond their inherent aesthetic and historical merits, these architectures are crucial anchors, preserving the communal spirit and identity. This connection resonates profoundly with the longtime residents of the old streets, who have fostered a deep place attachment to their environment over generations.

However, respondents believe that the scenic area management committee has not met its obligations to sufficiently safeguard or creatively communicate the cultural essence of these historical landmarks. This perceived oversight has reduced the allure of the historical structures, fostering discontent among the residents. As a result, the locations of these historical edifices and the administrative departments responsible for scenic area management have become focal points of public debate and contention concerning cultural conflict.

Respondents in the peripheral area likewise highlight cultural conflict. Nonetheless, their interpretation of the spatial distribution of cultural conflict rarely includes their residential area, a prominent illustration of conflict's spatial externality. Compared to the other two groups, those in the peripheral area particularly underscore the detrimental effect of tourism on local folkways. As one resident pointed out:

While the overall development of the ancient town has improved from the past, these days, most people are mainly focused on making money. As a result, the human touch has lessened, and people are no longer simple and honest. The past scenes of mutual assistance and trust can never be reclaimed. (C031, female, peripheral area resident).

Tourism not only reshapes landscape morphology and alters the traditional lifestyles of rural residents but also potentially destabilises their social-emotional space. Such changes often evoke a palpable sense of cultural loss among residents, which is deeply tied to shifts in core community values. A prominent manifestation of this shift is the migration from a community-driven, relationship-centred lifestyle to a predominantly commercial, profit-oriented one—a change largely attributed to the proliferation of tourism. These conflicting emotions are accentuated in contexts marked by uneven development, as detailed by Feng et al. (2020). For example, while residents in the peripheral area derived scant benefits from the tourism surge in the ancient town, they unavoidably shoulder the burden of diminishing cultural assets and the strain of socio-cultural disruptions. This disparity between benefits and costs amplifies their perception of cultural conflict.

Discussion

This study introduces a framework for spatially visualising qualitative conflict data, facilitating community participation in tourism planning and management while capturing sensitive information. Unlike traditional tourism impact and conflict studies that rely heavily on qualitative or spatial analysis from structured questionnaires (Wang and Yotsumoto, 2019; Yang et al. 2013), our research employs a mixed-methods approach. It combines semi-structured interviews and PM for data gathering and adopts a methodological eclecticism combining grounded theory with GIS spatial analysis for data processing. This approach not only bridges sociological and geographical paradigms, signifying methodological advancement in tourism studies, but also responds to the recent call for developing and utilising GIS in a more empathetic and beneficial manner for humanity (Zhao 2022). The proposed approach allows for identifying the content of tourism community conflict while offering insight into the subjective variations in conflict locations. Integrating data on attitudes and material landscape resource information enhances the practical applicability of theoretical research for real-world management and planning efforts (Kantola et al. 2023; Xu et al. 2024). This also paves the way for future framework adaptations across diverse tourism settings.

The findings reveal that, in terms of conflict attributes, management conflict, represented by backward public services and a lack of coordinated planning, was prioritised by all groups. It highlights the structural injustices faced by rural tourism communities due to long-standing rural-urban imbalances in China and the marginalisation of these communities following the influx of outside capital (Guo and Jordan 2022). Similar phenomena also exist in other developing countries (Manyara et al. 2006; Islam and Carlsen 2015). Meanwhile, given that management conflict primally occurs between residents and the local government, this result is partially consistent with Wang and Yotsumoto (2019), who found that the local government is the main party involved in the conflict for rural residents in China.

In addition, there were differences and consistency in the spatial distribution of perceived conflict among the three groups, as well as in the spatial combinations of these conflict types. Specifically, the spatial structure of perceived conflict among the three groups showed both internalities—distributed within their residential areas—and significant externality, meaning that perceived conflict is distributed throughout the ancient town area. The overlap between high-value conflict zones and residential areas revealed a dominant attitude among residents, summarised by the phrase, 'Conflict Just in My Back Yard'. Their anxiety about living spaces aligns with studies on the 'Not in My Back Yard' (NIMBY) phenomenon in tourism research (Litvin et al. 2020), showing a propensity for self-interest (Qin et al. 2021). However, this does not mean that this study fully supports the assumption that residents are rational decision-makers (Ko and Stewart 2002; Ribeiro et al. 2017). According to the findings of this study, the spatial structure of conflict also demonstrates externality. Residents living in different spatial areas mapped out areas that need to be improved for sustainable tourism development and community well-being. This observation partially supports existing research contending that there are minimal or no correlations between residents' gains, the negative impacts of tourism, and tourism support (Nunkoo and So 2016; Rasoolimanesh et al. 2018).

While tourism studies have highlighted the disadvantages and social conflicts experienced by host community residents and have attempted to analyse their attitudes and support for tourism from the perspective of relative deprivation (Peng et al. 2016; Xu and Sun 2020), there is a tendency to over-prioritise the importance of the distribution of the benefits of tourism, while ignoring the critical role of space in the formation of tourism conflicts and residents' sense of relative deprivation. As Massey (2005) points out, space is relational, imbued with power geometries, and always under construction. Tourism has facilitated the integration of erstwhile homogenised traditional communities into a comprehensive development discourse, characterised by tangible local economic and social advancements. Simultaneously, it has engendered spatial competition among diverse interest groups,

leading to disparate development outcomes within these communities (Wang 2021).

Based on the results of empirical research on the perceived conflict attributes and the spatial structure of conflict among residents of different areas, and in conjunction with the theory of relative deprivation (Stouffer et al. 1949), this study proposes the concept of spatial relative deprivation to clarify the spatial and psychosocial motivations associated with the emergence of tourism implicit conflict. Spatial relative deprivation refers to the negative emotional experience, such as dissatisfaction and unfairness, that arises when an individual or a group of individuals feel that they lack certain resources, rights, services, or opportunities in a specific geographic area compared to individuals or groups in other geographic areas. The spatial comparison of residents covers not only the differences in development within a community or between ancient towns in the latitudinal dimension but also the differences in the development of the same community over time in the longitudinal dimension, which increases the complexity of the rural tourism community conflict. In contrast to concepts such as relative deprivation and contractual deprivation, the concept of spatial relative deprivation aims to draw scholars' attention to the closely dynamically constructed nature of tourism space and the power geometry within it when considering tourism conflict.

Rural tourism in China has experienced significant growth in the 21st century, largely fuelled by strategic government intervention at both central and local levels. This active role enhances rural environments but poses challenges, leading to spatial restructuring and spatial injustice (Johnston 1983). One significant challenge lies in the government's tendency to prioritise large-scale, external economic benefits over the micro-level, intrinsic values that sustain rural communities. In the 'Hanzhong City, Ningqiang County Comprehensive Tourism Plan (2017–2030) of Shaanxi Province', emphasis is primarily placed on constructing a National 5 A Scenic Area. The priority for opportunities and rights in community spatial production is skewed towards tourists and outside investment. This underscores the initial concern that macro-economic targets can overshadow community well-being. Specifically, the core area, while serving as an important tourist destination and providing the main attraction resources for the surrounding expanded area, grapples with living and livelihood constraints from strict conservation measures. The peripheral area poses its own set of challenges: though frequently overlooked in governmental and development strategies, it bears the task of harmonising tourism initiatives with environmental aesthetics and land-use potential. In contrast, the expanded areas have developed rapidly and gained socio-economic advantages as a result of external interventions. This unequal approach to tourism development highlights broader issues of spatial injustice, rooted in imbalanced government priorities.

This study has three policy implications. First, the intrinsic and micro-values of communities demand a more significant emphasis on tourism planning and development. The research indicates that contemporary approaches to historic town development, while addressing the dual objectives of preserving national heritage and stimulating tourism consumption, often inadvertently sidestep the genuine needs of communities, leading to the appropriation of resources between core and peripheral areas. Thus, there is an imperative to refine tourism development strategies sensibly and flexibly, advancing the development of public spaces in tourism communities. For instance, in the case presented, the peripheral area, vast and abundant in natural resources, could be moderately developed for tourism-related recreational activities, expanding the community's tourist footprint. Moreover, tourism communities should exercise caution regarding the role of external capital, fully mobilising local capital's enthusiasm and focusing on residents' everyday spatial needs.

Second, it is imperative to innovate the concept of tourism spatial planning, transitioning from traditional functional zoning to community-based ecological network planning. Conventional tourism planning primarily divides geographic areas based on tourism resource attributes and potential for development, resulting in noticeable spatial differences. This limitation can be overcome by adopting the concept of ecological networks in spatial planning. The ecological network approach emphasises the creation of spatial networks connected by material elements, particularly by establishing corridors and buffer zones that link individual habitats and protected areas into a continuous, coherent spatial structure. Drawing upon this concept, ancient town tourism communities can establish greenways that connect core areas with peripheral regions, thereby spatially extending tourism services to the margins and facilitating the spatial fluidity of tourism value.

Third, to address the spatial relative deprivation caused by the mainstream ancient town development model of 'protect the old town, develop the new area', local governments need to establish a diversified spatial compensation mechanism. Specifically, monetary and in-kind compensation should be provided to residents of the core area, intellectual compensation (e.g. consulting services on business management) should be offered to residents of the expanded area, and policy compensation (e.g. employment support policies) should be provided to residents of the peripheral area.

Conclusion

This article analyses rural destination implicit conflict and spatially uneven distribution structures in the context of ancient town tourism development in China. Our theoretical position is based on a broader understanding of the core-periphery framework and suggests that implicit conflict can be a warning signal of explicit conflict in tourism communities. PM and open semi-structured interviews were jointly used to obtain data on residents' perceptions of conflict. A qualitative-spatial mixed method that combines grounded theory and spatial analysis was employed for data processing.

It is argued that tourism implicit conflict is a multidimensional category that includes management conflict, economic conflict, environmental conflict, and cultural conflict. Among them, management conflict, represented by backward public services and a lack of coordinated planning, was prioritised by all groups. However, there were distinctions in perceived conflict attributes among the resident groups. Residents with higher levels of involvement in tourism, especially in areas that have experienced significant tourism investment (e.g. expanded areas), tend to identify the most concrete causes of conflict. These causes are often related to the 'absence of government regulation' and 'unregulated competition of tourism businesses'. In contrast, residents with minimal involvement in tourism, residing in areas with limited tourism investment (e.g. peripheral areas), tend to perceive the causes or manifestations of tourism conflict in more abstract terms. These include issues such as the 'the widening wealth gap' and the 'degeneration of local folkway'.

There are also differences and consistency in the spatial distribution of perceived conflict and the spatial combination of these conflict types among the three groups. Specifically, the spatial structure of perceived conflict among the three groups showed both internalities—distributed within their residential areas—and significant externality, meaning that perceived conflict is distributed throughout the ancient town area. According to the

mapping of residents living in the expanded area, the spatial structure of conflict exhibited the strongest internality. In contrast, the mapping from the peripheral area residents revealed the most distinct externality. It suggests that groups with a more pronounced sense of spatial relative deprivation in tourism communities may pay more attention to a broader spatial range and show more significant concern for public types of conflicts. The entire community and its public resources become factors in their considerations of perceived deprivation.

Limitations and future suggestions

The limitations of this study mainly involve the following three aspects. First, while PPGIS mapping adeptly captures and visualises location-specific conflict using maps, the precision and efficiency of the paper-based technique demand further enhancement. Participants mark points on fixed-scale, paper satellite imagery in field surveys. If a desired location to mark is overly detailed, they might indicate a more general area, which can compromise the exactitude during the digitisation process. Therefore, building on established research (Wolf et al. 2018), future studies on tourism conflict can use a combination of online and paper-based PPGIS mapping to ensure more accurate and efficient data collection. Second, a major limitation of the PM method is that its validity is limited by the respondents' ability to read and draw maps. Inaccuracies in the mapping process may arise due to the respondents' varying map-reading abilities. To address this issue, more detailed instruction in the map-reading process and improved map preparation are needed. Third, the tourism conflict analysis employed in this study primarily focuses on the perspective of community residents. Future studies should involve other stakeholders, such as local governments, tourism enterprises, and visitors, thus widening the analytical framework for tourism conflict.

Data availability

The data were not publicly available due to their containing information that could compromise the privacy of research participants.

Received: 10 March 2024; Accepted: 12 September 2024;
Published online: 27 September 2024

Note

1 Source: *Local Records of Qingmuchuan*, edited by the Shaanxi Province Ningqiang County Qingmuchuan Local Records Compilation Committee.

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Acknowledgements

This work was supported by the National Natural Science Foundation of China [grant number 42201245]; China Postdoctoral Science Foundation [grant number 2022M711998; 2023T160403]; the Science and Technology Plan Key Research and Development Project of Shaanxi Province [grant number 2023-YBSF-029]; Excellent Graduate Training Programme of Shaanxi Normal University [LHRCTS23083].

Author contributions

Yangyang Li: Conceptualisation, Data collection, Data analysis and interpretation, Manuscript writing and editing. Xiao Feng: Writing—review and editing. Yang Gao: Conceptualisation, Data interpretation, Manuscript editing, Supervision. Zhenbin Zhao: Conceptualisation, Data interpretation, Manuscript editing, Supervision.

Competing interests

The authors declare no competing interests.

Ethical approval

This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of School of Geography and Tourism, Shaanxi Normal University (No. SGT-H240016).

Informed consent

In this study, informed consent was duly obtained from all participants. Before any data collection commenced, participants were first briefed about the aim of the research. They were then allowed to decide whether their interviews could be recorded. Therefore, participation in this study was completely voluntary and the responses given will be anonymous and used for academic purposes only.

Additional information

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