

Rural slum criteria as determining the threshold for tourism village development

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ARTICLE INFO	ABSTRACT
<p><i>Article history:</i> Received March 20, 2024 Received in revised form April 25, 2024 Accepted May 24, 2024 Available online August 01, 2024</p> <p><i>Keywords:</i> Slum criteria Thresholds Tourism villages</p> <p>*Corresponding author: Anna Pudianti Department of Architecture, Faculty of Engineering, Universitas Atma Jaya Yogyakarta, Indonesia Email: anna.pudianti@uajy.ac.id ORCID: https://orcid.org/0000-0002-6352-5926</p>	<p><i>The rapid development of tourism affects the quality of tourist attractions in several tourist destinations, including villages that are transforming into tourist villages. With the increasing increase of tourism operations in rural areas, the quality of life in tourist villages needs to be assessed to not exceed its carrying capacity. Only when the issue becomes worse have attempts been made to address excessive tourism thus far. Slums arise in rural locations, particularly in tourist communities, as a result of one of the quality reductions. By comparing the slum criteria with input from resource people in tourist villages regarding factors reducing carrying capacity in tourist villages, this study examines factors that may be threshold aspects for developing a village so that it does not become a village that exceeds its carrying capacity. There were three phases to this study's first review. The initial stage is a review of the literature to identify the causes of the decline in tourist communities. Secondly, an Analytic Hierarchy Process (AHP) technique survey of influential people in rural tourism was conducted to gather information for threshold-determining criteria. The last step involves comparing the rural slum parameters with the AHP results. Using the characteristics of rural slums, the comparison aims to generate an assessment of the threshold instrument for the development of tourism activities in rural regions. According to preliminary research, the slum criterion is an indicator that, when modified, could enhance the threshold instrument for building tourist villages.</i></p>

Introduction

In recent years, tourist villages have developed quite a lot with various variations in their potential and uniqueness, including one in DIY which in 2022 will have 148 tourist villages with four classifications (*Rintis* - start-up, *Tumbuh* - growing, *Berkembang* -developing, *Mandiri* - independent), and in 2023 it will have increased the number is 205 (Dataku 2022). Many tourist villages in Sleman have been forced to withdraw from the list of popular destinations because visitors are no longer interested in visiting, but

some of them are still there with all of their natural beauty. Investigating the variables that affect the rise and fall in the degree of sustainability of tourist villages is vital to prevent identity loss due to overuse of potential. This research is also useful as a warning system for tourist villages that suffer from deteriorating quality or losing their distinctive rural character.

Protective development in rural tourism has been considered in Asia since the 1980s (Ling-en et al. 2013; Hau and Tuan 2017; Park and Yoon 2011; Smith, Robbins, and Dickinson 2019). However, its implementation has not yet been

fully implemented. Study of the impact of tourism on quality of life (Woo, Kim, and Uysal 2015) demonstrates how tourist-related activities can lead to major issues that affect both the tourism industry and the environment. Slums in tourist villages are one of the phenomena that arise when tourism activities and the development of supporting facilities are more developed. This is because the quality of the environment is especially related to this phenomenon. With particular attention to environmental degradation in tourist village areas, this research is an initial study to identify factors that influence environmental degradation in tourist villages using the Analytical Hierarchy Process (AHP) method, as per academics, government, and tourism village managers.

It is common knowledge that tourism activities have both positive and bad effects. Naturally, the growth of tourism-related activities is most supported by this favorable influence. However, it has to be conscious of the drawbacks. Residents perceive a detrimental effect on culture and quality of life from a social perspective. The interests of tourists that is, the quality of their experience and locals, who desire a high standard of living, are in opposition. In addition, the quality of opportunities is what interests travel service providers (Postma and Schmuecker 2017). However, the impact can be seen directly on the environmental aspect (Buckley 2011). The positive impact can be seen from the economic aspect which contributes to economic development and creates job opportunities. These economic aspects are usually the most important from the perspective of the government and society.

This study aims to examine factors that have a high level of importance based on the participation of community observers of tourist villages using the AHP method. The villages designated as examples are in Yogyakarta's Special Region and have the potential to flourish culturally while maintaining a rustic feel. This approach was employed to be widely embraced by rural tourism operators. Meanwhile, life cycle assessment, environmental impact, and environmental auditing three more sophisticated methodologies have been used to optimize research in small island tourism destinations (Lim Charles 2009). This research is so complex that it is difficult for some rural communities to accept. Research with locations in tourist villages using the AHP method has also been carried out in

China using a comprehensive fuzzy mathematical model (Yang and Kong 2022) and a simpler version using the AHP method with the Delphi Technique in Korean tourist villages (Park and Yoon 2011).

Determining the initial factors to be used refers to a literature review and focused discussions with the Tourism Village Friends Forum. These factors are (1) Transportation (Smith, Robbins, and Dickinson 2019), (2) water usage (Gössling et al. 2012), (3) type of recreation (4) tourist village residence (Zulkefli 2021), (5) tourism waste (Manoj 2016), (6) number of tourists (Zulkefli 2021), (7) number and duration of tourist visits (Zulkefli 2021), and (8) external cultural influences (Pudianti and Vitasurya 2019; Rudwiarti, Pudianti, and Hadi 2019).

Methods

Data was collected from questionnaires submitted by 18 respondents at the Friends of Tourism Village forum with roles as tourism village managers, government, and community. These respondents were selected based on various roles and perspectives to obtain objective factors in the rural tourism industry. Furthermore, based on the literature review and initial questionnaire, eight (8) factors were employed and analyzed in this research.

The Expert Choice program supports the AHP approach, which is employed to investigate hierarchies based on priority level. A complicated problem is represented in a multilevel structure in which the objective level is the first level and the factor level is the second. This decision support model will express difficult multifactor or multicriteria problems in a hierarchy. Hierarchy is a useful tool for decomposing difficult problems into manageable groups and organizing those groupings in a hierarchical structure that seems more organized and methodical. The priority level that emerges from this research is only dependent on the first-factor level. The steps taken are as follows: (1) Enter the research objectives; (2) Input factors used; (3) Increase the number of respondents or stakeholders in the research, namely 18 respondents with different roles; (4) Fill in the questionnaire results to Expert Choice; (5) Weighting of questionnaire results for all respondents; (6) Compare one factor with another to get accurate results for each factor; (7)

Calculate the priority results for the degradation of rural tourist villages based on Expert Choice.

Comparative judgment is the form of AHP that is employed; it employs expert choice analysis to determine a criterion's relative value concerning other criteria. A pairwise comparison matrix between each element and the others is created from the results. To provide more specific conclusions regarding the relative importance of each aspect, the score for each criterion per element is assigned a number between 1 and 9 (Saaty 2004) (see table 1).

Table 1. Scale the value of each element

Score	
1	Both elements are equally important
3	Element A is slightly more important than Element B
5	Element A is quite important compared to Element B
7	Element A is more important than Element B
9	Element A is very important compared to Element B
2,4,6,8	The Middle Value between two scores

Source: (Saaty 2004)

A weighted level of relevance is produced for each criterion under comparison by the Expert Choice calculation findings. With the help of a matrix table that illustrates which aspects are more significant, the primary factors contributing to the decline of rural tourist communities are determined by weighing. Other factors will be compared with the matrix. The data weighting in this study is derived from empirical facts observed in the field, based on responses to questionnaires from respondents. This allows for the consideration of current conditions and policies, which can then be suggested as a better course of development for the sustainability of rural tourism villages.

The Central Statistics Agency (BPS) and the Ministry of Public Works, Directorate of Residential Area Development (referring to Ministerial Regulation Number 14/PRT/M/2018 concerning Prevention and Quality Improvement of Slum Housing and Slum Settlements) provide slum criteria that can be utilized for contrasting research results with to verify the instruments and enhance the findings more thoroughly.

Results and discussion

The final AHP results after combining all respondents with Expert Choice are as shown in table 2.

Table 2. AHP Cross-Tabulation using Expert Choice

	Transportation	Water Use	Recreation	Residence	Tourism Waste	Number of Tourists	Number & Time of Activities	Influence of Outside Culture
A		2,32844	1,11059	1,63322	2,77614	1,4078	4,54299	1,39571
B			1,99297	1,62658	3,9399	1,6021	2,16685	1,04483
C				1,20497	3,6536	1,6125	4,33415	1,65395
D					2,73556	1,1461	2,21336	1,4192
E						6,3407	8,08675	6,1446
F							3,22701	1,54619
G								2,05253
H	Incon: 0.02							

Information:

A: Transportation

B: Water Use

C: Recreation

D: Tourist Village Residence

E: Tourism Waste

F: Number of Tourists

G: Number and Time of Activities

H: Cultural Influence from Outside

From the AHP results, it can be seen (figure 1) that the highest weight is on the tourism waste factor at 0.371, transportation at 0.138, and recreation at 0.126. The lowest element is the quantity and timing of tourist activities (0.034), followed by water use (0.089), living in tourist villages (0.087), tourist number (0.084), and influence of outside culture (0.071). Based on the discussion's outcomes, it was determined that the direct waste that is readily apparent such as the effect of the village's increased dirt is the waste component associated with tourism. or direct environmental impact, though waste management is also a factor in this. However, it is determined that the quantity and length of activities do not always determine whether or not the quantity and duration of tourism-related activities will directly lower the caliber of tourist attractions. In contrast to the topic of homestays, the argument for this assertion is that the decline is very reliant on the sort of recreation and tourist management.



Information:

- E: Tourism Waste D: Residence
- A: Transportation F: Number of Tourists
- C: Recreation H: Influence of Outside Culture
- B: Water Use G: Number and Time of Activities

Figure 1. Graphic results of factors for decreasing the quality of tourist villages with AHP

It has been acknowledged that a homestay will feel more crowded the more rooms it has (unlike the quiet and comfortable atmosphere in a village). However, there are also occurrences of tourist villages purposefully limiting the number of rooms that can be offered in each home to maintain a fair distribution of household revenue. This research attempts to explore the prospect of deepening the findings of reasons for diminishing tourist villages by comparing them with slum criteria since the concerns of overcrowding, water use, and quantity of tourists (overcrowding) are extremely near to various slum criteria. [Table 2](#) presents a comparison of regional slum criteria.

Table 2. Comparison of regional criteria

Criteria for Slum	Research result	
Locations Minister of Public Works Regulation No. 14 2018	Criteria	Score
Building condition	Residence	
*Irregularity	*building area	0,087
*Density	*number of rooms	
*Building Technical Requirements		
Drinking water supply conditions		
*Safe access to drinking water	Water usage	0,089
*Fulfillment of Drinking Water needs		
Environmental drainage conditions		
*Drains Water Runoff		
*Availability of drainage		
*Drainage maintenance	Limbah wisata	0,371
*Drainage construction quality		
Wastewater Management conditions		

Criteria for Slum	Research result	
Locations Minister of Public Works Regulation No. 14 2018	Criteria	Score
*Management does not comply with technical standards		
*Management infrastructure does not comply with technical standards		
Waste management conditions		
Technical infrastructure appropriate		
Management system		
Technically appropriate		
Infrastructure Maintenance		
Fire Protection Conditions		
Availability of Infrastructure	x	x
Availability of Facilities		
Road conditions		
*Service coverage	Transportation	
* Road surface quality		
Other considerations		0,138
* Strategic value of location	Strategic transportation-location	
*Population density	Number of tourists	0,084
*Social, economic, cultural potential	Influence of external culture	0,071
Land legality		
*Land Status	x	x
*Land allocation	Type of Recreation	0,126

Source: (PUPR 2022)

One characteristic of tourist village settlements that distinguishes them apart is their consideration of cultural preservation; therefore, one component that is essential to the development of tourist villages is external culture (Anggoro, Dianasari, and Liestieandre 2023). From a regional level, the presence of foreign culture in tourist villages is very likely to bring about cultural change.

Tourism waste, which is understood in the context of tourist towns to be the remnants of past tourism operations, is a factor that stakeholders are aware of. Since the majority of waste in rural areas is still managed traditionally, tourist villages do not currently employ the 3R (Reduce, Reuse, Recycle) waste management philosophy. Furthermore, the waste composition changed when the community was turned into a tourist destination (Suma et al. 2019). During stakeholder meetings, it was also discovered that one of the things that attracted travelers to stay in

tourist villages was a clean environment, including proper drainage and sanitation. This is a topic that is discussed in Indonesian tourist villages as well, and it is increasing in significance in other nations (Ray 2014). The term "tourist waste" refers to elements like drainage, sanitation, and garbage that can contaminate the ecosystem. Waste management, sanitation, and drainage are covered under one tourist waste theme since environmental cleanliness is one of Sapta Pesona's priorities.

Learning from the slum criteria, an important factor to consider in an effort to preserve buildings, especially those that still have traditional houses, is fire safety (Warren 2013). The prevention of fire disasters has not been discussed in the research, although traditional settlements and most tourist villages still have assets that are very susceptible to fire. Although it is a crucial point to remember, the spacing between homes or the density of buildings can still serve as preventative measures in the current situation.

The comparison from the Central Statistics Agency will be used at the household level (refer to table 3). For this comparison to further enhance the significance of each discovered component, the discussion of the fall in household scale must also be taken into consideration as one of the causes of lowering the quality of tourist villages.

Table 3 Comparison of household scale slum criteria

Household scale slums		Research result	
Criteria	Score	Criteria	Score
Residence			
Sufficient space	0,35	*Building area *Number of rooms	0,087
Suitability of drinking water	0,15	Water usage	0,089
Sanitary feasibility	0,15	Tourist waste	0,371
		Transportation	0,138
		Number of tourists	0,084
		Number and duration of activities	0,034
		Type of recreation	0,126
Building Resilience	0,35	Influence of external culture	0,071

Source: (Badan Pusat Statistik 2021)

Table 3 demonstrates that the BPS places a high value on both building durability and adequate living space. However, in the context of

a tourist village, cleanliness requires precedence over other factors, and building durability is primarily focused on maintaining the authenticity of rural buildings and minimizing the influence of outside culture. The authenticity of living in a rural home is valued more than the structure's longevity.

The instrument for determining tourist village thresholds was enhanced by the comparative results that were obtained employing slum criteria at both the household and regional scales. In addition to the extra dimension of fire safety, the factors that have been determined to be threshold factors for tourist villages are appropriate to use. It is also necessary to investigate the possibility of mitigating other disasters, such as earthquakes, volcanic eruptions, and hurricanes, on a regional and household scale. In the same way that land use is crucial to consider, it is also important to pay attention to the specifics of the type of recreation or tourism to ensure that each tourist village is sustainable and that no identical types exist nearby.

To make calculations easier and easier for the public to accept, the threshold calculation instrument needs to be constructed by considering a system analogous to the slum criteria model.

Conclusions

By using comparisons with slum criteria inside the setting of a tourist hamlet, several findings can improve the instrument employed to establish thresholds. A tourist town receives an early warning when it is included in an early warning or when its quality status diminishes because the sustainability context strives to ensure that the development of the village's quality is completed within threshold limitations before environmental quality declines.

Preventing fire disasters and raising public awareness of the need to protect assets which are rural tourism's specialty are two factors that are not covered in the requirements for village tourists. In the context of tourist villages, the resilience element of structures is also seen as resistance to outside cultural influences to preserve the distinctiveness, particularly of residential residences. Furthermore, it is acknowledged that resistance to other cultures entails a greater weight, which is comparable to the BPS definition of resilience building.

Further research can investigate the factors identified to be included in the threshold criterion to build on these findings. It should be mentioned that every element has a distinct impact, necessitating the calculation of each factor's impact initially. In addition, carrying capacity and tourism capacity calculations must be included as threshold controls.

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Author(s) contribution

Anna Pudianti contributed to the research concepts preparation, methodologies, investigations, data analysis, visualization, articles drafting and revisions.

Vincentia Reni Vitasurya contribute to the research concepts preparation and literature reviews, data analysis, of article drafts preparation and validation.

Lucia Asdra Rudwiarti contribute to methodology, supervision, and validation.

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