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Mitigating the Impact of Touristification on the Psychological Carrying Capacity of Residents

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Abstract: This study explores the impact of touristification on the residents of the Seochon and Bukchon areas of Seoul, Korea. Touristification refers to changing an urban space to promote tourism; however, this process displaces the original residents and affects the commercial and social fabric of neighborhoods. We examine the psychological carrying capacity of local residents to adapt to touristification, and present ways to mitigate the negative effects of touristification. First, a semantic differential scale was used to elicit adjectives to assess the carrying capacity of residents to adapt. This was correlated with a classification of the residents' awareness of the changes. Second, a space improvement index was developed to verify whether an improvement in the physical space will change the psychological carrying capacity of residents. A space improvement simulation indicated the changes in carrying capacity based on the improvement of space. Finally, we established the key factors for each space type and proposed strategies to mitigate the impact of touristification.

Keywords: psychological carrying capacity; space improvement index; touristification; urban spaces

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1. Introduction

Touristification is a portmanteau of the words "touristify" and "gentrification". Early studies on touristification investigated the urban changes occurring due to developing deteriorating urban centers into tourist attractions as part of urban development projects [1,2]. In recent years, touristification has been used as an inclusive term to indicate the phenomenon of gentrification from tourist activities. Researchers agree on the necessity of considering a broad approach that includes various phenomena and contexts of urban places by going beyond the causal relationship of commercialization to the migration of original residents, increase in crime, and problem of garbage, which has been the traditional framework in studies regarding the manifestation of gentrification [2,3]. The topics covered by studies on touristification include in what context residential districts became tourist destinations, how tourism affects the lives of local residents, and how tourism-centered single economies are created [4–6].

In this sense, the concepts of "place" and "placelessness" proposed by Relph [7] provide a meaningful conceptual framework for understanding the "place" of the region undergoing touristification. Unlike the concept of physical space, "place" in this framework also encompasses the element of the humans who experience the space [7]. This concept of "place" has been used by various tourism scholars in their investigations of the relationship between tourist destinations and humans [8–13]. However, studies that explore the phenomenon from the perspective of insiders, such as local residents, are rare. Considering that the essence of a place lies in the formation of meaning based on interactions between the physical space and the individuals who live in and experience the space [8], conducting a place study from the perspective of insiders has both research and practical relevance.

Specifically, as active countermeasures to touristification are needed to manage the continuous influx of tourists, this study aims to explore mitigation strategies. In other words, this study explores ways to mitigate the impact of touristification, a topic that remains under-researched even though the phenomenon of touristification has been intensifying. In addition, we aim to present effective strategies to address individual key factors.

In particular, we examined the relationship between touristification and the psychological carrying capacity of local residents in areas with obvious touristification, because there were indications that the psychological carrying capacity of local residents was under pressure.

To this end, we selected the Seochon and Bukchon areas of Seoul, Korea, as target areas, since their touristification is evident. (Bukchon, which was located between Gyeongbokgung Palace and Changdeokgung Palace in the Joseon Dynasty, was the residence of an influential family, and Seochon was the residence of the maid and middle class of the royal court. Although the two regions were somewhat damaged by development pressure, they are still attracting attention as representative tourist destinations in Korea where you can experience the traditional and cultural landscape of the Joseon Dynasty as a traditional housing type, *hanok*. They were designated as the Hanok Preservation District. Since the early 2000s, the Seoul Metropolitan Government has established Bukchon care policies and has established itself as a base for the culture of a representative *hanok* village in the downtown area. In addition, Seochon was designated as a Hanok Preservation District, and the spaces of many modern cultural artists are concentrated there, making it a base for art culture. Bukchon and Seochon maintain regional value as a report of the life and cultural history of the Joseon Dynasty, and as the number of tourists increases, they are recognized as representative areas where the touristification phenomenon is taking place.) Touristification has manifested in this area in the following respects: public or private investment of capital related to tourism, changes in the urban landscape, and changes in population [2,14].

The Seochon and Bukchon areas, which used to be the urban centers of Seoul, witnessed an increase in housing prices from 2000 to 2015 because of growing demand as the areas became identified as a tourism-centered urban revitalization district. However, existing residential buildings have been commercialized, and therefore, the availability of housing is decreasing. The main issues can be summarized as follows: (1) change in the real estate market because of the increase in housing prices and rent, (2) displacement of fundamental convenience facilities for residents, (3) deterioration in the residential environment because of the increase in the number of tourists, and (4) weakening of the local community because of conflicts among residents. As these issues interact in a complex manner, the following problems are emerging: weakening residential function of the Seochon and Bukchon areas, increasing migration of residents, and hollowing of the residential district.

Touristification

Gentrification was first mentioned by Glass [15], and refers to an influx of population with a relatively higher level of cultural and economic status into a stagnant urban area, which leads to an increase in real estate prices because of the improved residential environment while simultaneously displacing the original residents, who are relatively less privileged [16]. As the scope and function of tourist activities within cities increased in the 2000s, the concept of touristification emerged and touristification studies were conducted. Gotham [17] referred to touristification as a phenomenon that occurs at the interface between top-down tourism development and urban development, and defined it as the transformation of residential space into tourist destinations. Mendes [18] described touristification as the transformation of residential urban places for the working population into tourist destinations or places of consumption. In particular, touristification involves the phenomenon of original residents leaving the place because it is becoming increasingly occupied by providers of entertainment, leisure, and accommodation, in response to tourist needs.

There have been many different approaches to defining the concept, but there is a consensus that touristification entails a transformation of the economy, society, culture, landscape, and overall lifestyle as a result of the infiltration of tourist culture in a place of residence, because of the interplay between urban development and tourism development [3,5,6,19]. Previous studies on touristification report that in many cases, tourism development was initiated because of the government's top-down policy or large-scale investment in business enterprises and that there are many dysfunctional aspects of gentrification, such as an increase in real estate prices and displacement of original residents, because of the influx of middle-class inhabitants from other areas [2,20,21]. However, there are also positive aspects to touristification [2,3,22]. When touristification is a result of small-scale tourism driven "from below", and not of strategically planned large-scale tourism development, the influx of tourists in culture-, shopping-, and entertainment-themed streets could potentially vitalize the community [3,23,24]. The "placeness" of a quiet residential district may change as the area becomes congested because of the influx of new residents and tourist activities and culture. There may be changes, such as improvements in accessibility and convenience from newly added infrastructure as well as vitalization of the local economy because of the additional income from tourists [2,3,22,25]. Therefore, it is necessary to explore and understand touristification from a balanced and flexible perspective, without concentrating only on the negative functions.

Moreover, touristification manifests in a greater and more diverse manner when the boundary between daily and non-daily routines becomes indistinct [4]. First, the urban space in modern society does not have a clear boundary between residential, commercial, and tourist districts. It is difficult to determine whether the changes in the urban landscape and industrial structure stem from general urbanization or touristification [26]. In addition, tourism is no longer a special experience involving a non-daily routine. It is becoming a part of daily life, as people make various attempts to enjoy the tourist experience in everyday life [27]. Furthermore, according to Munt's [28] argument that everything is becoming an object of tourism, not only natural or cultural resources but also the lives of local residents can become a tourism resource. From this perspective, it is necessary to explore the manifestation of touristification from the perspective of insiders, considering that touristification emerges from indistinct boundaries between daily and non-daily routines and between residence and tourism.

2. Methods

We aimed to test the following two hypotheses.

Hypothesis 1. *Adjectives can be used to assess the psychological carrying capacity of local residents to adapt to touristification.*

Hypothesis 2. *The improvement of physical space can change residents' psychological carrying capacity.*

To verify these hypotheses, this study was conducted in three stages:

1. A semantic differential (SD) scale was used to elicit adjectives to assess the carrying capacity of residents to adapt to touristification.
2. A space improvement index was developed and applied to analyze the change in the carrying capacity of residents in response to space improvement.
3. Strategies for mitigating the impact of touristification were evaluated for each space type.

The survey method of this study was a self-administrated survey method, and a one-to-one supervision method was used. Survey sites where many tourists pass by were selected (seven sites of which were space improvement), and a questionnaire was conducted only for residents at those points.

It was clearly explained to the participants that the use of the data derived from the questionnaire was to grasp whether the judgment on touristification changes with spatial improvement.

Correlation analysis was conducted to statistically confirm the comparison of recognition through the adjective evaluation method. In addition, a comparative analysis was conducted to compare whether perceptions before and after the landscape improvement were changed.

2.1. Selecting Adjectives for Touristification Carrying Capacity Assessment

To assess psychological changes based on space improvement in the residential area, we used a semantic differential scale using adjectives to determine residents' carrying capacity to adapt to touristification. Assessment using adjectives, which is commonly utilized in the field of landscaping, involves making a list of adjectives that describe landscapes and having the assessor select the adjectives that he or she thinks best describe the landscape. Adjectives are also used to assess the state of mind or psychology of a person. Assessment using adjectives can show whether the carrying capacity has been exhausted, and whether there is any change in carrying capacity. Additionally, adjectives with similar but subtly different meanings can be used to evaluate the influential factors more accurately.

To derive the adjectives for assessing carrying capacity, we first created a set of adjectives that were deemed to be associated with touristification, based on the adjectives used in previous studies on landscape assessment. The selected adjectives were reviewed by experts in landscape planning/analysis, and a final set of adjectives was selected based on the survey responses of residents.

To test if the final set of adjectives could be reliably used as an index for assessing the psychological carrying capacity of local residents regarding touristification, we analyzed the correlation with each of the four phases of residents' reactions to tourist activities as follows: (1) awareness of the influx, (2) awareness of the inconvenience caused, (3) presence of resentment, and (4) intention to relocate. (Regarding residents' responses to tourism development, as the development of a tourist destination accelerates, Doxey [29] stated that residents undergo four different phases of emotions—euphoria (happy), apathy (uninterested), irritation (irritated), and antagonism (hostile)—with initial positive responses turning into negative responses toward tourists and tourism development. Dogan [30] identified certain strategies for residents to counter touristification: resistance, retreatism, boundary maintenance, revitalization, and adoption. This study aims to present ways to mitigate the impact of touristification. Hence, we used the research findings of Doxey [29] and Dogan [30] as references, and classified residents' awareness regarding touristification into the four phases described here.)

The general characteristics of the respondents are shown in Table 1.

2.2. Analysis of Change in Psychological Carrying Capacity for Touristification Based on Spatial Improvement

To verify whether the improvement of physical space changes the psychological carrying capacity of residents and examine the differences in the carrying capacity change by each space type, we developed a space improvement index and established improvement strategies for each space type. Based on this, we carried out a space improvement simulation and analyzed the changes in carrying capacity based on the improvement of space.

2.2.1. Development of Space Improvement Index

Based on Im's [31] study, we developed a space improvement index (Table 2). The index is largely divided into the superordinate, basic, and subordinate levels. The superordinate level refers to the direction of space improvement in terms of tourist behavior modification and residents' psychological change. The basic concept refers to the specific direction of space improvement. Subordinate-level concepts are practical improvement

items, such as including a library avenue, an outdoor rest area that fosters a sense of belonging, an open space for mitigating crowding, a pedestrian-only walkway, trees by the roadside, and a children's playground. Examples of tourist behavior modification include promoting quiet tourism and securing residents' spaces; examples of residents' psychological change include mitigating the perception of crowding, increasing the aesthetic beauty of residential districts, and creating outdoor social overhead capital (SOC) spaces.

Table 1. General characteristics of the respondents.

Variable	Item	Frequency (Percentage %)	Variable	Item	Frequency (Percentage %)
Gender	Men	12 (60)	Housing type	Single-family housing	3 (40)
	Women	8 (40)		Multi-family housing	9 (45)
Age	10–19	0 (0)		Other	3 (15)
	20–29	3 (15)	Length of residency	1–10 years	6 (30)
	30–39	5 (25)		11–20 years	2 (10)
	40–49	1 (5)		21–30 years	3 (15)
	50–59	3 (15)		31–40 years	2 (10)
	60+	7 (35)		41–50 years	3 (15)
Education level	Middle school or below	2 (10)		Over 50 years	4 (20)
	High school graduate	6 (30)	Location of residency	Samcheong-dong	3 (15)
	College graduate or higher	12 (60)		Wonseo-dong	3 (15)
Occupation	Student	2 (10)		Gahoe-dong	8 (40)
	Homemaker	3 (15)		Gye-dong	1 (5)
	Salaried worker	6 (30)			
	Unemployed	7 (35)		Other	5 (25)
	Self-employed	1 (5)			
	Other	1 (5)			

Table 2. Space improvement index based on concepts.

Superordinate Level Concept (Direction of Improvement)	Basic Level Concept (Specific Direction)	Subordinate Level Concept (Specific Space Items for Improvement)
Tourist behavior modification	Promote quiet tourism	Library avenue, outdoor gallery, outdoor screen
	Reinforce the territoriality of the residential area.	Courtyard, bench, or door that fosters a sense of belonging
Residents' psychological change	Mitigate the perception of crowding	Open spaces for reducing the crowding at waiting areas of commercial buildings
		Pedestrian-only walkway, space-dividing objects
	Increase the aesthetic beauty of the residential district	Plant trees by the roadside, add interesting elements to the pavement
	Create outdoor SOC space	Children's playground, outdoor exercise equipment, grass field

2.2.2. Space Improvement Simulation

Based on the space improvement index derived earlier, we conducted a space improvement simulation. To do so, we analyzed the urban structure of the Seochon area and created four categories (targets for improvement) based on the characteristics of the touristified residential area—front of the residence, main commercial street, residential convenience facility that became a tourist destination, famous tourist destination—and then established the direction of improvement for each space type (Table 3).

Table 3. The direction of improvement for each space type.

Category		The Direction of Improvement for Each Space Type
Space type	Main commercial street	<promote quiet tourism> -library avenue, outdoor gallery, outdoor screen, and rest area <mitigate perception of crowding> -create a pedestrian-only walkway
	Famous tourist destination	<create outdoor SOC space> -children's playground/outdoor exercise equipment/grass field
	Residents' convenience facility that became a tourist destination	<mitigate perception of crowding > -open space that residents and tourists can share
	Front of residence	<increase the aesthetic beauty of residential district> -plant trees by the roadside, add interesting elements on the pavement <mitigate perception of crowding> -unify the colors of the building front <reinforce the territoriality of the residence> -courtyard or bench that fosters a sense of belonging

Later, we selected the places in Seochon that could represent each type and conducted a space improvement simulation. For this simulation, we utilized the photo editing function of Photoshop. To make the "before" and "after" photos easy to compare objectively, we kept the number of people in each space and the basic colors (brightness) the same (Table 4).

2.2.3. Analysis of Carrying Capacity Change from Space Improvement

We surveyed the residents to test whether the psychological carrying capacity of local residents changed after these improvements to the residential space.

We visited the Seochon area three times in 2019 and surveyed the residents. A total of 82 questionnaires were collected. During the survey, we used the semantic differential scale as the carrying capacity assessment index, in addition to the adjective pairs and the seven pairs of "before" and "after" images from the space improvement simulation. To test whether residents' perception of inconvenience and relocation intent would change in response to the space improvements, their responses were recorded on a 5-point Likert scale. The general characteristics of the respondents are shown in Table 5.

Table 4. Result of space improvement simulation.

Before Improvement	After Improvement
On the main commercial street, a library avenue was created to promote quiet tourism.	
	
In front of residences, interesting elements were added to the pavement and trees were planted on the roadside to increase the aesthetic beauty of the residential district.	
	
On the main commercial street, a pedestrian-only walkway was created to mitigate crowding.	
	
In front of residences, open space was created to mitigate the crowding caused by waiting tourists.	
	

Table 4. *Cont.*

Before Improvement	After Improvement
In front of residences, a rest area was created to reinforce the territoriality of the residence.	
	
In a famous tourist destination, outdoor SOC spaces such as a children's playground and exercise equipment were installed.	
	
At a residential convenience facility that became a tourist destination, open space was created to mitigate crowding.	
	

Table 5. General characteristics of the respondents (Seochon survey for testing Hypothesis 1).

Variable	Item	Frequency (%)	Variable	Item	Frequency (%)
Gender	Men	19 (38.8)	Housing type	Private housing	13 (26.5)
	Women	30 (61.2)		Multi-family housing	29 (59.2)
Age	10–19	9 (18.4)		Other	7 (14.3)
	20–29	8 (16.3)	Length of residency	1 year–10 years	21 (42.9)
	30–39	12 (24.5)		11 years–20 years	14 (28.6)
	40–49	7 (14.3)		21 years–30 years	6 (12.2)
	50–59	9 (18.4)		31 years–40 years	3 (6.1)
	60+	4 (8.2)		41 years–50 years	1 (2.0)
Education level	Middle school or below	9 (18.4)		Over 50 years	1 (2.0)
	High school graduate	13 (26.5)		Other	3 (6.1)
	College graduate or higher	27 (55.1)	Location of residency	Nusang/Nuha-dong	11 (22.4)
Occupation	Student	15 (30.6)		Okin-dong	18 (36.7)
	Homemaker	5 (10.2)		Sajik/Pilwun-dong	6 (12.2)
	Salaried worker	20 (40.8)		Cheongwun/Hyoja-dong	8 (16.3)
	Unemployed	3 (6.1)		Chebu/Tongin-dong	4 (8.2)
	Self-employed	4 (8.2)		Tongui-dong	1 (2.0)
	Other	2 (4.1)		Other	1 (2.0)

3. Results and Discussion

3.1. Selection of Adjectives for Touristification Carrying Capacity Assessment

To select the adjective pairs, we examined the adjectives used in previous landscape assessments and categorized them. The adjectives could largely be categorized into cognitive concepts, such as openness, harmony, safety, congestion, familiarity, mystique, neatness, and aesthetics. In this study, we employed adjectives associated with touristification, such as safety, congestion, familiarity, neatness, aesthetics, and openness.

Among the 22 pairs of adjectives from the first set, we selected 17 pairs of adjectives based on feedback from five landscape planning and analysis experts (Table 6).

Table 6. The second set of adjectives.

Cognitive Concept	Adjective Pairs	Association with Touristification
Congestion	Bustling–Secluded Noisy–Quiet Crowded–Uneventful	The problem of noise and crowding because of tourists
Neatness	Cluttered–Orderly Dirty–Clean	The problem of trash, crowding, and overall deterioration of the environment because of tourists
Safety	Unsafe–Safe Inconvenient–Convenient Unsettling–Relaxing	Increase in crime and anxiety because of tourists (unfamiliar people)
Openness	Airy–Stifling Narrow–Wide Confined–Spacious	
Familiarity	Inhospitable–Cordial Unfamiliar–Familiar Awkward–Intimate	Psychological emotion in response to crowding of tourists in residential areas
Aesthetics	Plain–Picturesque	
Psychological emotion	Unpleasant–Pleasant Disturbing–Pleasing	

Based on the second set of adjectives, we conducted a resident survey and selected the final set of adjectives associated with touristification.

To verify the correlation between touristification (relocation intent) and the adjectives in the survey, we analyzed residents' perceptions of touristification and its correlation with each adjective. We selected adjectives whose correlation coefficient was over 0.4.

The results of the survey are presented in Table 7.

Table 7. Perceptions of the touristification of residential areas (Bukchon survey for testing Hypothesis 2).

Variable	Item	Frequency (Percentage %)	Variable	Item	Frequency (Percentage %)
Awareness of tourist influx	Always	7 (35)	Feeling resentful because of tourists	Always	5 (25)
	Usually	9 (45)		Usually	5 (25)
	Sometimes	4 (20)		Sometimes	5 (25)
	Rarely	0 (0)		Rarely	5 (25)
	Never	0 (0)		Never	0 (0)
Feeling inconvenienced because of tourists	Always	6 (30)	Intend to relocate because of tourists	Always	2 (10)
	Usually	6 (30)		Usually	5 (25)
	Sometimes	6 (30)		Sometimes	4 (20)
	Rarely	2 (10)		Rarely	9 (45)
	Never	0 (0)		Never	0 (0)

The results of the analysis are presented in Table 8. First, the correlation coefficient between relocation intent and awareness regarding the influx of tourists was 0.26, showing no significant correlation. However, as for the awareness of inconvenience and resentment because of tourists, the correlation coefficients were 0.68 and 0.65, respectively, showing a

significant level of correlation. Therefore, when testing the association between the adjectives and touristification, it was necessary to examine whether there was any significant correlation between the adjectives and the three variables—namely, the direct result of touristification ("intend to relocate because of tourists") as well as "awareness of the influx of tourists", and "feeling resentful because of tourists".

Table 8. Correlations between residents' perceptions and the touristification of residential areas.

Correlation Coefficient	Relocation Intent	
Perception	Pearson correlation coefficient	0.263
	Significance probability of perception (two-tailed)	0.263
	Perception N	20
Inconvenience	Pearson correlation coefficient	0.681 **
	Significance probability of inconvenience (two-tailed)	0.001
	Inconvenience N	20
Resentment	Pearson correlation coefficient	0.640 **
	Significance probability of resentment (two-tailed)	0.002
	Resentment N	20

Note: ** the correlation coefficient is significant at the level of 0.01 (two-tailed).

Table 9 presents the result of the analysis of the correlation between the residents' perception of the residential area and the 17 adjective pairs derived in the second selection stage. Among the categories of perception regarding the touristification of residential areas, only the category of "awareness of the influx of tourists" did not have a significant correlation with "intend to relocate because of tourists". Therefore, we considered the adjective pairs in the remaining three categories (inconvenience, resentment, and relocation intent) and selected the ones with a correlation coefficient above 0.4.

Table 9. Correlation between adjectives and residents' perceptions (* $p < 0.05$).

Adjectives	Perception	Inconvenience	Resentment	Relocation Intent
Unsafe	0.091003	0.517148 *	0.516908 *	0.612977 *
Unfamiliar	−0.04674	0.267905	0.114357	0.426206 *
Unsettling	0.174964	0.691669 *	0.611577 *	0.765532 *
Noisy	0.401325	0.735218 *	0.701406 *	0.649182 *
Dirty	−0.20004	0.345975	0.292803	0.414592 *
Unpleasant	0.077449	0.169377	0.381906	0.412755 *
Narrow	0.323602	0.484884 *	0.497152 *	0.692316 *
Stifling	0.302614	0.672917 *	0.634663 *	0.668994 *
Confined	−0.01864	0.239532	0.089606	0.309118
Cluttered	0.072739	0.575108 *	0.508513 *	0.703526 *
Inhospitable	−0.10131	0.250301	0.154922	0.20996
Inconvenient	0.353706	0.313584	0.222727	0.129366
Awkward	−0.24471	0.169294	0.047046	0.202869
Crowded	−0.406	0.1605	0.141915	0.186989
Disturbing	−0.17496	0.432293 *	0.305788	0.483494 *
Bustling	0.141827	0.745896 *	0.593129 *	0.671871 *
Plain	−0.08992	0.325863	0.209549	0.455573 *

As a result, 13 adjective pairs, excluding "confined", "inhospitable", "awkward", and "crowded", were found to be correlated with the aforementioned three categories of residents' perceptions. This result verified the significant correlation between the 13 adjective pairs and residents' carrying capacity to adapt to touristification. We therefore concluded

that adjectives can be used as an assessment index for determining the psychological carrying capacity of local residents for touristification. Thus, Hypothesis 2 was accepted.

Subsequently, we selected 10 adjective pairs as the final set for further discussion after considering the space improvement simulation to be conducted, as well as Kwon's [32] finding that the optimal number of adjective pairs used in an SD scale is 10 or fewer (Table 10).

Table 10. Adjectives that assess the carrying capacity for touristification.

Cognitive Concept	Adjectives Pairs
Congestion	Bustling–Secluded, Noisy–Quiet
Neatness	Cluttered–Orderly, Dirty–Clean
Safety	Unsettling–Relaxing
Openness	Narrow–Wide, Stifling–Airy
Aesthetics	Plain–Picturesque
Psychological Emotion	Unpleasant–Pleasant, Disturbing–Pleasing

3.2. Assessment of Seochon Residents' Current Carrying Capacity

3.2.1. Responses about Inconvenience/Relocation Intent

During the survey among Seochon residents, we investigated residents' perceptions of the touristification of their residential area by asking direct questions regarding inconvenience and their possible intention to relocate because of tourists. In response to the question, "Have you felt that tourists cause inconvenience?" the residents who selected Sometimes", "Usually", or "Always" were categorized into the group who perceived inconvenience. The residents who selected "Rarely" or "Never" were categorized into the group who did not perceive inconvenience. The responses regarding the intention to relocate were similarly categorized.

Based on these survey responses and categories, we further classified Seochon residents into three groups, as shown in Table 11. Residents who did not perceive inconvenience or indicate an intention to relocate because of tourists were categorized as "the group of residents who remain settled", and they accounted for 16.3% of surveyed residents. The residents who perceived inconvenience because of tourists but did not indicate an intention to move were categorized as "the group of residents who feel unsettled but have no intention to relocate". They accounted for 24.7% of all residents. Lastly, the residents who perceived inconvenience and indicated an intention to relocate because of tourists were categorized as "the group of residents adversely affected by touristification", and they accounted for 49% of the residents.

Table 11. Classification of Seochon residents based on the perception of touristification.

Category	Inconvenience	Relocation Intent	Frequency (%)
Group 1	X	X	8 (16.3)
Group 2	O	X	17 (34.7)
Group 3	O	O	24 (49.0)
Total			49 (100%)

Group 1: Group of residents who remain settled. Group 2: Group of residents who feel unsettled but have no intention to relocate. Group 3: Group of Seochon residents adversely affected by touristification.

To summarize, Groups 2 and 3, who expressed that they no longer felt settled because of overtourism, represented 83.7% of the residents, which shows that Seochon is touristified.

3.2.2. Results of the Responses to the Semantic Differential Scale Using Adjectives

The results of the analysis of the survey responses to the semantic differential scale using adjectives, which is the carrying capacity assessment index, showed that most adjectives scored above 3. This indicates that extreme touristification is taking place, beyond residents' carrying capacity to adapt to it (Table 12). In particular, the average scores of "noisy", "cluttered", and "bustling" were the highest. This indicates that the

levels of noise, clutter, and crowding exceed residents' comfort levels, decreasing their carrying capacity to cope.

Table 12. The result of resident assessments.

Adjectives	Average	Adjectives	Average
Unsettling–Relaxing	3.19	Stifling–Airy	3.13
Noisy–Quiet	3.42	Cluttered–Orderly	3.40
Dirty–Clean	3.23	Disturbing–Pleasing	2.89
Unpleasant–Pleasant	3.01	Bustling–Secluded	3.41
Narrow–Wide	3.21	Plain–Picturesque	3.32

3.3. Analysis of Carrying Capacity Change after Spatial Improvement

The results of analyzing the adjectives describing the space before and after the improvement showed that all adjective indexes became more positive. The average score of adjectives before the spatial improvement was 3.23, but the average after the improvement changed to 2.38 (Table 13).

Table 13. The average score of adjectives describing each image.

Division	Image before Improvement					Image after Improvement					
Adjective	**1**	**5**	**7**	**8**	**Ave.**	**2**	**3**	**4**	**6**	**9**	**Ave.**
Unsettling	3.45	2.90	3.39	3.00	3.19	1.88	2.22	2.37	2.24	2.33	2.21
Noisy	3.57	3.41	3.69	3.02	3.42	2.47	2.57	2.55	3.08	3.18	2.77
Dirty	3.31	3.51	3.31	2.82	3.24	1.88	2.24	2.00	2.49	2.49	2.22
Unpleasant	3.08	3.06	3.10	2.80	3.01	1.84	2.18	2.19	2.29	2.37	2.17
Narrow	4.16	2.89	3.06	2.81	3.23	1.85	2.32	2.89	2.81	2.44	2.46
Stifling	3.84	2.73	3.08	2.88	3.13	1.88	2.27	2.80	2.57	2.16	2.34
Cluttered	3.73	3.31	3.60	3.02	3.42	2.08	2.59	2.31	2.73	2.69	2.48
Disturbing	3.04	2.67	3.00	2.86	2.89	1.86	2.24	2.35	2.24	2.22	2.18
Bustling	3.69	3.33	3.61	3.00	3.41	2.47	2.67	2.67	3.00	2.82	2.73
Plain	3.51	2.96	3.43	3.39	3.32	2.06	2.24	2.29	2.29	2.39	2.25
Average			3.23						2.38		
Difference of Average						0.85					

The adjective indexes that showed the greatest change were "plain", "dirty", and "unsettling", whereas the adjective indexes with very little change included "noisy", "bustling", and "disturbing". All adjective indexes correlated with touristification, and the findings also indicated that the overall psychological carrying capacity of Seochon residents to adapt to touristification increased after spatial improvement. Additionally, the adjective indexes that manifested the greatest change, such as "plain", "dirty", and "unsettling", pertained to visual senses. This suggests that spatial improvement exerts a great impact on visual perception.

Next, we conducted a comparative analysis of carrying capacity in terms of the following five spatial improvement strategies. The first spatial improvement plan was to create a rest area that provides a sense of belonging to ensure the territoriality of residents. The second plan was to create an open space in front of the touristified market to mitigate the perception of crowding. The third was to create a pedestrian-only walkway to mitigate the perception of crowding. The fourth was to add interesting elements to the pavement and plant trees by the roadside to increase the aesthetic beauty of residential districts. The fifth spatial improvement plan was to create SOC spaces in front of famous tourist destinations. The change in the adjective scale for each spatial improvement plan is shown in Table 14.

Table 14. The change in adjective scale for each spatial improvement plan.

Division	①		②		③		④		⑤	
Adjective	**Before**	**After**	**Before**	**After**	**Before**	**After**	**Before**	**After**	**Before**	**After**
Unsettling	3.00	2.22	2.90	2.33	3.45	2.24	3.45	2.37	3.39	1.88
Noisy	3.02	2.57	3.41	3.18	3.57	3.08	3.57	2.55	3.69	2.47
Dirty	2.82	2.24	3.51	2.19	3.31	2.49	3.31	2.00	3.31	1.88
Unpleasant	2.80	2.18	3.06	2.37	3.08	2.29	3.08	2.19	3.10	1.84
Narrow	2.81	2.32	2.89	2.44	4.16	2.81	4.16	2.89	3.06	1.85
Stifling	2.88	2.27	2.73	2.16	3.84	2.57	3.84	2.80	3.08	1.88
Cluttered	3.02	2.59	3.31	2.69	3.73	2.73	3.73	2.31	3.60	2.08
Disturbing	2.86	2.24	2.67	2.22	3.04	2.24	3.04	2.35	3.00	1.86
Bustling	3.00	2.67	3.33	2.82	3.69	3.00	3.69	2.67	3.61	2.47
Plain	3.39	2.24	2.96	2.39	3.51	2.29	3.51	2.29	3.43	2.06
Ave.	2.96	2.35	3.08	2.48	3.54	2.57	3.54	2.44	3.33	2.03
Dif. Of Ave.	0.61		0.60		0.96		1.10		1.30	

Notes: Subordinate level concept (specific space items for improvement): ① courtyard, doorpost, or bench that gives a sense of belonging; ② open space for reducing crowding at the waiting areas of commercial buildings; ③ pedestrian-only walkway, space-dividing objects; ④ plant trees by the roadside, add interesting elements to the pavement; and ⑤ children's playground, outdoor exercise equipment, grass field.

The results of the analysis showed that the adjective scale for "creating SOC spaces in front of famous tourist destinations" changed the most, with an average of 1.30. This indicates that residents' psychological carrying capacity greatly improves when they can reclaim the space in front of a famous tourist destination, which was once a residence but later became occupied by tourists. In other words, when the space within a residential area is not occupied by tourists but rather shared between residents and tourists, residents' carrying capacity increases. Hence, it can be speculated that residents' carrying capacity also increases when the SOC space, which usually reduces in response to touristification, is restored naturally.

3.4. Strategy to Mitigate the Impact of Touristification

Through the analysis of the current condition of touristification in the Seochon area, we categorized the space within the touristified area and discovered that the key influencing factors of carrying capacity differed depending on the space type. In addition, we analyzed the change in carrying capacity following spatial improvement and discovered that each item on the space improvement index had different key factors that can effectively mitigate the impact of touristification.

By aggregating the above findings, we established the key factors for each space type within the tourism area and effective strategies to mitigate the impact, as shown in Table 15. This presents a more specific and efficient guideline than provided by previous general mitigation strategies.

Table 15. Key factors for each space type within the touristified area and effective strategies to mitigate the impact.

Space Type of Touristified Area	Key Influencing Factor	Effective Mitigation Strategy
Main commercial street	Openness of space (narrow)	Pedestrian-only walkway to mitigate the perception of crowding
Residents' convenience facility that became a tourist destination	Neatness (dirty)	Open space that residents and tourists can share
Front of residence	Aesthetics (plain) Safety (unsettling)	Rest area to secure residents' space
Front of famous tourist destination	Noise (noisy)	Outdoor social space

4. Conclusions

In this study, we explored strategies to mitigate the negative impact of touristification and established the concept of carrying capacity (which has been considered a critical value) as a controllable factor.

First, to prove Hypothesis 1, we derived adjective pairs associated with touristification. Based on this, we conducted a resident survey in the Seochon and Bukchon areas, where touristification is evident. Through correlation analysis, we derived a third set of adjective pairs correlated with the perception of residents. Consequently, we verified the hypothesis that adjectives can be used to assess the psychological carrying capacity of local residents.

To test Hypothesis 2, we categorized the space within Seochon, developed a space improvement index, and then carried out a space improvement simulation. The survey used 10 adjective pairs for the images of space before and after the improvement, and the results of the analysis were as follows. First, the responses of Seochon residents showed a moderate level of perceived inconvenience and relocation intent, and the scores of most adjectives showed that the residents' perception of negative impact was above average. We concluded that Seochon is a touristified area. Second, all the adjectives describing the images after the spatial improvement showed a positive change, confirming Hypothesis 1. Third, there was no significant difference in carrying capacity depending on the length or location of residence. This indicates that policy-making to mitigate the impact of touristification should consider not only specific spaces or groups but rather all other regions and groups equally. Fourth, we derived different key factors for touristification based on each space type, with each factor demonstrating a different degree of effectiveness in mitigating the impact for each space improvement index. This indicated the necessity of establishing an effective mitigation strategy based on the space type.

These findings can be used as baseline data and contribute to the preparation of guidelines for spatial improvement to mitigate the problems in touristified areas in the future. However, the improvement of physical space presented in this study can have twofold effects in that the improved environment can also promote the influx of tourists. Additionally, to maintain the effect of spatial improvement, it is crucial to manage the improved space. Therefore, it is imperative to establish institutional plans that consider all these factors. As touristification can lead to conflicts between residents and tourists, spatial improvement accompanied by institutional plans—such as an agreement between the two groups, such as limiting the number of tourists, tourist tax, etc.—may help ease the problems more effectively. The effect will be greater when such an institutional plan upholds the guidelines on physical space improvement, as presented in this study, to mitigate the impact of touristification. It is judged that the abovementioned institutional plans need to be carried out in further studies.

In addition, this study was unable to select a sample group using a systematic sampling method due to the nature of the site. For this reason, a questionnaire was conducted in the area through spatial division. This method may have the limitation that it may not be able to represent the whole idea of the residents of the target area.

Moreover, the collection of more survey samples may reveal differences in carrying capacity depending on the length or location of residence, or the categories developed, based on residents' perceptions of the touristification of residential areas. Therefore, a follow-up study can present a more detailed mitigation guideline for touristification.

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