

Eulsook-do's Change in Leisure Pattern by the Pre- and Post-Construction of Estuary Dike in the Coastal Area

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Abstract : *The purpose of this study is the assessment of changes in the leisure patterns of users of the Eulsook-do before and after the estuary dike construction. The following survey research method was conducted to implement the study, sampling by age was carried out selectively and randomly alike. A total of 319 persons were chosen for final analysis, excluding questionnaires answered found to be inappropriate. To measure the image of the lower Nakdong River around the Eulsook-do, with advice sought from experts, researchers, through several pilot tests, developed a 24-item semantic differential scale(SDS) that has two bi-polar adjectives at each end. Study of the pre- and post- construction images of the Eulsook-do located on the coast of Busan suggests the dike construction has brought about negative changes in the Eulsook-do's overall image. There can be two alternatives for improving the negative image: restoration and development.*

Key words : *Eulsook-do, Leisure Pattern, Destination Image, SDS(Semantic Differential Scale)*

1. Introduction

It has been about 20 years since estuary dike was built along the Eulsook-do on the lower Nakdong River estuary that has been considered Asia's greatest migratory nesting grounds, among a variety of resources constituting Busan's costal environments. The 1987 dike construction across the Nakdong estuary has brought about not only tremendous changes in the Eulsook-do and its ecological system but enormous behavioral changes in leisure users visiting the Nakdong estuary as leisure space in non-daily life and local residents using the estuary as a space for life in daily life. In particular, there have been a lot of changes in its accessibility. The estuary dike construction has made the estuary an open space around the clock due to its accessibility along the street, unlike its previous reliance on water transport. It has had the Eulsook-do undergo identity change as a new 'land', away from its previous image as an 'island'. From spatial perspective, partial access to the estuary was allowed before, while the change has allowed access to the whole island. From users' perspective, it means the estuary that served mainly as a space for Gangseu-gu and Saha-gu residents has now turned into a new leisure space for Buk-gu, Sasang-gu and Saha-gu residents neighboring the Nakdong River and further for Busan citizens. Especially, some recreation and convenience facilities formed after the dike construction have been considered to stimulate Busan citizens' desire for leisure,

now in use as a major space for leisure at the weekend. The purpose of this study, therefore, is the assessment of changes in the leisure patterns of users of the Eulsook-do before and after the estuary dike construction.

2. Study Background and Method

1) Study Background

Future plans for the Eulsook-do located in the mouth of the Nakdong River include "The 4th National Land Development Plan(2000-2020)", "Ocean development Master Plan(2000-2010)" and "The 2nd Tourism Development Master Plan(2002-2011)" which have been proposed at the level of the Korean government, and "Comprehensive Urban Master Plan(1997-2011)" and "Comprehensive Tourism Development Master Plan(2002-2006)" proposed at the local government level that will be master plans for Busan. Those major master plans include the Eulsook-do and suggest its direction for development, which indicates that the Eulsook-do's geopolitical situation and possibility of potential development have a very important place in Busan's future standing as well as in the future developmental direction of national territory. In particular, the Eulsook-do, the contact point between Busan that has all mountain, river and ocean and the Nakdong River that has run throughout Korean history must be an attraction from tourist perspective as such.

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The development of the Eulsook-do as a new attraction is expected to make it a pleasant space in daily life, which will provide Busan citizens with opportunities to enjoy leisure activities, and a new tourist destination which will offer "non-ordinary pleasure" to tourists visiting Busan and make them want to visit the city again. This study is designed to suggest problems with the current Eulsook-do development and a new future direction, by investigating the Eulsook-do's leisure patterns, past and present. The implementation of the study required the following methods of study.

2) Study Method

(1) Data Collection

In July in 2004, sampling was conducted, made up of 400 people aged 20 and more residing in Busan. The sample consisted of 200 people aged 40 and more knowing the status of the Eulsook-do before the 1987 estuary dike construction and 200 people aged 20 to 39 not knowing the situation. During July through August in 2004, face-to-face individual interviews were made between well-informed surveyors and respondents. However, though the initial survey was done in population proportion, absolute lack of respondents aged 40 and more who have visited the Eulsook-do both before and after the dike construction required a complementary survey. In the complementary survey, more people aged 40 and more who have visited the Eulsook-do both before and after the construction were allocated to each area sampled to make more than 200 people, while the result of the first survey being under examination. Sampling by age was carried out selectively and randomly alike. A total of 319 persons were chosen for final analysis, excluding questionnaires answered found to be inappropriate.

Table 1 Demographic values

demographic variables	classification	frequency	ratio (%)
residential district	Gangseu-gu	9	2.82
	Geumjeong-gu	22	6.90
	Geejang-gun	3	0.94
	Nam-gu	28	8.78
	Dong-gu	10	3.13
	Dongrae-gu	15	4.70
	Buk-gu	13	4.08
	Sasang-gu	21	6.58
	Saha-gu	35	10.97
	Seu-gu	17	5.33
	Sooyeong-gu	21	6.58
	Yeonje-gu	23	7.21
	Yeongdo-gu	15	4.70
	Jung-gu	6	1.88
Jin-gu	41	12.85	
Haeundae-gu	40	12.54	
sex	male	164	51.41
	female	155	48.59
age	30 -39	1	0.31
	40 -49	148	46.39
	50 -59	109	34.17
	60 -69	61	19.12

(2) Measurement Scale

To measure the image of the lower Nakdong River around the Eulsook-do, with advice sought from experts, researchers, through several pilot tests, developed a 24-item semantic differential scale(SDS) that has two bi-polar adjectives at each end. With 24 items divided into 5 dimensions, the 5 dimensions are Entertainment(ET: 5 items including 'happiness', 'liveliness', 'pleasantness', 'richness', 'agreeableness'); Leports(LP: 5 items including 'interestingness', 'inspiringness', 'activeness', 'motivation', 'appropriateness'); Culture & Art(CA:4 items including 'uniqueness', 'urbaneness' 'diverseness', 'change'); Environment & Ecosystem(EE: 6 items including 'beautifulness', 'cleanness', 'pleasantness', 'harmoniousness', 'friendliness'); and Recreation(RC : 4 items including 'quietness', 'restfulness', 'comfort', 'coziness').

3. Major Results

1) General Nature of Data

Analysis of an effective sample of 319 persons showed 164 mans and 155 women, with 149 aged 40 or less and 170 aged 50 or more. In the case of the level of satisfaction with the Eulsook-do's pre-construction image, 130 people said, 'satisfying ', 105 'average', and 19 'unsatisfying'(65 did not answer). However, survey of the level of satisfaction with the Eulsook-do's post-construction image showed that 37 people said, 'satisfying', 135 'average', and 25 'unsatisfying'(122 did not answer), with their relatively low level of satisfaction.

2) Changes in the Eulsook-do's image

As a result of probe into changes in Busan citizens' image of the Eulsook-do that has been created by the 1987 dike construction, Table 1 suggests the average of each SDS. On a scale from +3 to -3, -3 was given to the most negative image, 0 to the middle and +3 to the most positive image.

The table suggests the Eulsook-do's pre-construction image received plus(+) in all items. The Eulsook-do's post-construction image, however, greatly declined on entertainment and leports(except for appropriateness) dimensions, even though there remained some of its positive image. Also, the Eulsook-do made a negative image change on the dimensions of culture & art, environment & ecosystem and recreation. Overall, the estuary dike construction has been found to shift the Eulsook-do image from positive to negative aspects.

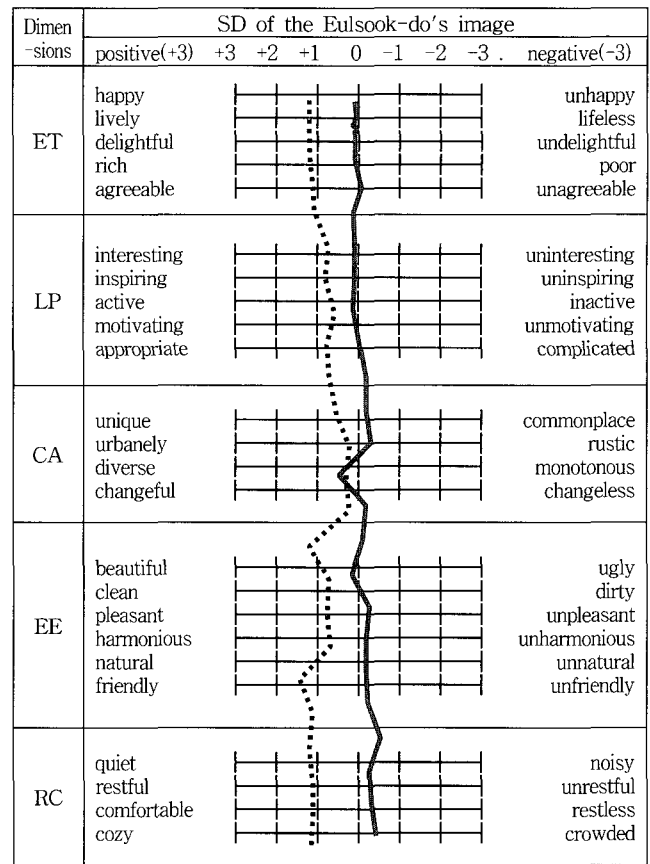
Table 2 the Average of SD items by dimension

dimension	SD items of the Eulsook-do's image			
	positive(+3)	pre-construction	post-construction	negative(-3)
ET (Entertainment)	happy	1.1974	0.2798	unhappy
	lively	1.2893	0.1316	lifeless
	delightful	1.1835	0.1383	undelightful
	rich	1.2075	0.0094	poor
	agreeable	1.1661	0.2610	unagreeable
LP (Leports)	interesting	0.8401	0.2169	uninteresting
	inspiring	0.9341	0.1755	uninspiring
	active	0.5849	0.1509	inactive
	motivating	0.6855	0.0062	unmotivating
	appropriate	0.7767	-0.0694	complicated
CA (Culture & Art)	unique	0.6081	-0.1222	commonplace
	urbanely	0.0188	0.2539	rustic
	diverse	0.2633	-0.0031	monotonous
	changeful	0.3490	-0.0470	changeless
EE (Environment & Ecosystem)	beautiful	1.2075	0.0626	ugly
	clean	0.7507	0.1415	dirty
	pleasant	0.8490	-0.1100	unpleasant
	harmonious	0.7641	-0.1285	unharmonious
	natural	1.3144	-0.3730	unnatural
RC (Recreation)	friendly	1.0754	-0.2547	unfriendly
	quiet	1.3154	-0.4778	noisy
	restful	1.2068	-0.2767	unrestful
	comfortable	1.1504	-0.2924	restless
	cozy	1.1661	-0.4576	crowded

Analysis by dimension of its image change shows the Eulsook-do had the strongest image in recreation before the Dike construction, was also strong in entertainment and then in environment & ecosystem. On the contrary, it was somewhat weak in the images of leports and culture & art. The results indicates that, before the dike construction, the Eulsook-do was a quiet, comfortable and cozy rest area and a beautiful, clean, pleasant, harmonious, natural and environmental-friendly space.

However, the dike construction has now prevented the Eulsook-do from making a rest area or an environmental and ecological space, changing it mainly into a place for entertainment and leports activities. This change implies that Busan citizens used the Eulsook-do as an environmental and ecological space and a rest area, while the dike construction has brought them changes into a relatively entertainment-focused leisure pattern. Fig. 1 shows its image change on the basis of the above Table 2.

Table 3 Eulsook-do's image change pattern of pre/post construction



..... Pre-Construction, — Post-Construction
 ET : Entertainment, LP : Leports, CA : Culture · Art
 EE : Environment · Ecology, RC : Recreation

3) Changes in the Leisure patterns of Busan Citizens

Table 4 Eulsook-do's Pre- and Post- Construction Image Change by Dimension

dimension	pre-construction	post-construction	difference
ET	1.2050	0.1636	1.0414
LP	0.7630	0.0959	-0.6671
CA	0.3095	0.0203	-0.2892
EE	0.9900	-0.1102	-1.1002
RC	1.2076	-0.3746	-1.5822

From major results of study, the Eulsook-do's post-construction image has made huge negative changes on the dimensions of recreation, environment & ecosystem and entertainment, with the most negative image change occurring on recreational dimension. The dike construction has led to the greatest decline in quiet', 'restful', 'comfortable' and 'cozy' items. It implies the disappearance of the Eulsook-do's native image has deprived the place of its quite, restful, comfortable and cozy atmosphere, making it monotonous.

The Eulsook-do's second largest image depreciation has occurred on environmental & ecological dimension, undermining its beautiful, clean, pleasant, harmonious, natural, friendly images after the dike construction more than before. The Eulsook-do was beautiful, clean, pleasant, harmonious, natural and friendly but it is no longer as such. Entertainment is the third largest dimension where the Eulsook-do has undergone image depreciation, with a huge decline in 'happy', 'lively', 'pleasant', 'rich', 'agreeable' items. The three dimensions, recreational, environmental & ecological, and entertainment, that found huge image depreciation, have close relations with one another. It can be said that the dike construction has undermined its environmental & ecological dimension first, leading to the deterioration of its recreational and entertainment dimensions.

Comparative assessment on the five dimensions of Busan citizens' images of the Eulsook-do before and after the dike construction can be shown in the following diagrams.

Fig. 1 suggests considerable distortion of the leisure patterns by dimension that are drawn in pentagon. This implies that the Eulsook-do was not a space for leisure in its entirety even before the dike construction. The image can be seen in the Eulsook-do's changed image after the dike construction, as well.

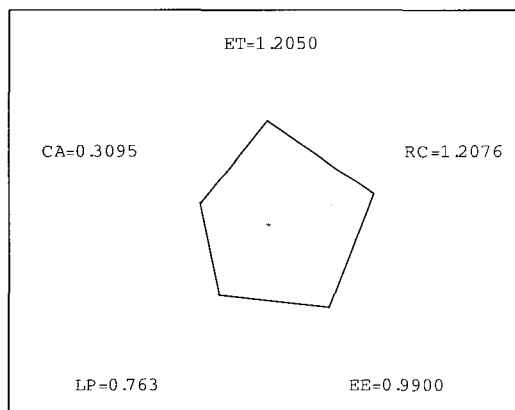


Fig. 1 Eulsook-do's pre-construction image (On all five dimensions, the center of pentagon is -3, the middle 0, outer side +3 in value)

As in Fig. 2, the image of the Eulsook do's post-construction leisure pattern drawn in pentagon is distorted more severely than its pre-construction one. It implies the dike construction has caused a huge decline in Busan citizens' leisure patterns in the Eulsook-do, with its limitations.

Also, as in Table 4, Fig. 1 and Fig. 2, Busan citizens' image of a post- construction Eulsook-do on the five dimensions has made overall negative change in comparison with that of a pre-construction Eulsook-do. That explains

the dike construction is a major factor that has brought about negative changes in the Eulsook do's image.

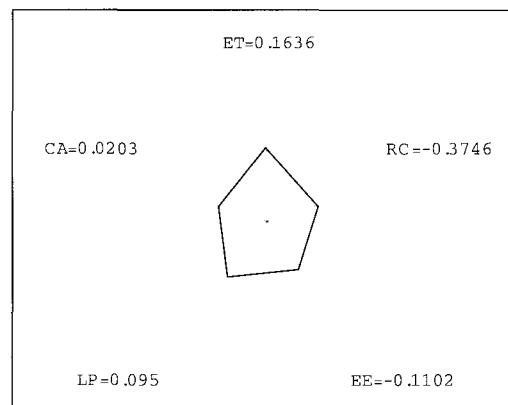


Fig. 2 Eulsook-do's post-construction image (On all five dimensions, the center of pentagon is -3, the middle 0, outer side +3 in value)

4. Significance of Research Results

The estuary dike construction caused a lot of controversy before the project started, especially fear of the ecological disturbance of coastal areas of Busan. Nonetheless, it was built since a combination of irrigation purpose, including the prevention of seawater intrusion into Kimhae plain and the protection of clean water in Mulgeum water storage tank, and provision of a recreational and leisure space for Busan citizens was put on priority for policy decision-making. However it has brought about negative impacts—the loss of the Eulsook-do's own image as well as the environmental and ecological destruction of coastal areas and the lower Nakdong River. It has allowed irrigation, while losing us the Eulsook-do's own friendly image. The lower Nakdong River, including the Eulsook-do, is no longer a friendly, comfortable and enjoyable space but it becomes a mere estuary, reduced to a place for protecting Kimhae plain and Mulgeum water storage tank. The dike has created accessible road that allows easy access to the Eulsook-do, while reducing it to part of land, not an island.

The Eulsook-do on the coast of Busan, therefore, should be transformed into a pleasant space for leisure by its well-balanced development on the five dimensions suggested in this research, which will change Busan citizens' leisure pattern to the following Fig. 3.

Development of the Eulsook-do with the regular pentagon-shaped leisure pattern requires consideration of the systematic introduction of the urban and rural recreational planning facilities, assuming environmentally sustainable development.

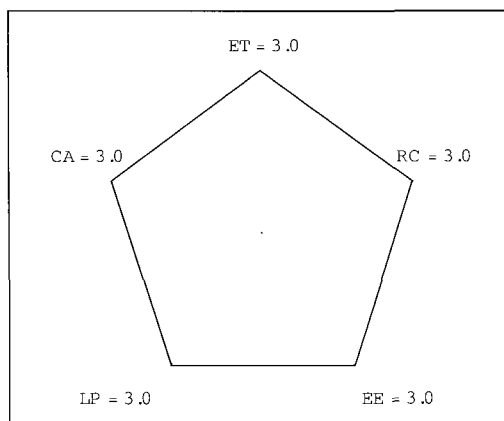


Fig. 3 Right Direction for Development : Pentagon(regular pentagon) Completed.

(On all five dimensions, the center of pentagon is -3, the middle 0, outer side +3 in value)

5. Conclusion and Recommendations

Study of the pre- and post- construction images of the Eulsook-do located on the coast of Busan suggests the dike construction has brought about negative changes in the Eulsook-do's overall image. There can be two alternatives for improving the negative image: restoration and development of aquatic and surface ecosystem on environmental sustainability. The former involves the elimination of the estuary dike to return the Eulsook do's ecological system to its original state. In the latter case where the estuary dike is maintained as is, there should be overall change of master plans for the Eulsook-do development, along with its ecological preservation. They should be put in motion with the above dimensions into account, by reflecting this analysis results of local residents' image of the Eulsook-do.

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