

Geocological Systems on Cone Karst in Tropical and Subtropical Regions, Eastern and Southeastern Asia

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Physical geography is an important discipline to evaluate natural and cultural landscapes. In eastern and southeastern Asia various karst landforms lie on terrains, where temperate, subtropical and tropical zones are distributed in terms of climatic geomorphology. Previous studies mainly discussed climatic controls on karst landforms based on measurements on climatic environments such as air temperature, soil moisture and carbon dioxide concentration. However, geomorphic processes on karst landforms depend on not only climatic conditions but also limestone formation. This study compares several fields located in low and mid latitudes regions in eastern and southeastern Asia, where karst landscapes are extensively distributed on various age limestone. Especially, this poster presentation focuses cone karst formed under different climate regions. Cone karst is generally considered as a tropical and subtropical landform related with rapid chemical weathering controlled by high temperature and heavy rainfall. Field observation, however, revealed that various geomorphic processes occur in cone karst and surrounding areas. For instance, cone karst in Ryukyu Islands (Southwestern Japan) is characterized by layered limestone, where physical weathering easily occurs by disintegration. In contrast, cone karst in low latitude regions (e.g. Visayas in central Philippines) frequently shows deep chemical weathering by rapid decomposition and leaching, which is affected by both tropical climate and non-layered limestone. These environments on geosphere influence geoecosystems and human activities such as soil, vegetation and land use. This observation indicates that limestone formation also controls karst landscapes, and that geomorphology and geocology play important roles in landscape appreciation.

Keywords: landscape, karst, limestone, weathering, climatic geomorphology, geocology

Impact of planters in alley environments: A case study in Kyoto area

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Introduction

In many previous studies, it has been shown that greenery contributes to landscape appreciation in urban areas. However, it is difficult to conserve green space in urban areas. However, residential houses constitute a large part of urban land use. In addition to public administration, residents also should be encouraged to grow plants in their private gardens to create a greener environment in future.

Planters could be considered to be mobile green spaces and can be placed in environments without soil. Therefore, planters enable development of green environments in urban spaces outside gardens, thereby contributing to greener city environments. In particular, placing planters in alleys could improve the amount of greenery.

Alleys are spaces which are close to people's lives. They tend to have a double role as a public thoroughfare and a private space for the local community to meet. If planters are placed in these alleys, they could possibly serve as a trigger for conversation, a connection between neighbors, and a place for the local community to interact with each other.

The present case study in Kyoto area, examined the function and usefulness of planters in terms of their impact on the local resident consciousness. Moreover, this study also examined the relation between the number of pot plants and condition of environment. The primary purpose of this study was to examine whether the planters contributed to landscape appreciation in the alley and in the local community.

Methods

From an urban area in Kyoto, 126 alleys were selected for this study. A survey regarding the alleys was conducted with 278 residents living around alleys.

(1) Text mining approach

A text mining approach was applied to analyze the responses about the impression of the alleys. Correspondence analysis and cluster analysis were also applied for the analysis.

(2) Physical environmental condition

We counted the number of planters in each alley. Further, we examined the relation between the number of planters in, and the width and forms of the alleys. Alleys were classified into six categories, identified by direction of movement and forms, and 5 categories as per their width, based on measurements of 2 meters.

(3) Resident consciousness

We investigated activities of neighborhood community and degree of peoples' friendliness in each neighborhood.

Results

(1) Text mining approach

Frequent key words regarding the residents' comments on the alley were identified and grouped. The results showed that an extension of commodities, for example, "pot plant," "bike," and "bicycle," were representative of objects found in the alleys. "Green condition" was also one of the 5 concepts residents recognized when classifying the alley.

(2) Physical environmental condition

A correlation was found between the number of planters and alley forms as well as between the number of planters and the width of the alley. It was found that many planters are placed in narrow alleys.

(3) Resident consciousness

It was found that residents who placed many planters in the alleys frequently used the space for chatting and sharing something with the neighbors, thus increasing the activities in the neighborhood community.

Considerations

Residents believed planters to be important parts of the alley as well as of the greening of the environment. However, alley width and forms affected the number of planters which were placed in the alleys. It was found that in many cases, the residents' consciousness prompted them to place the planters. Further, because potted trees and flowers require maintenance, neighbors often met each other in the alley, which encouraged and developed neighborhood participation. Therefore, it could be said that the greening of the alleys contributed to both the general urban landscape and the development of the local community.

HGG01-P02

Room:Convention Hall

Time:May 27 18:15-19:30

Keywords: alleys, planters, extension of commodity, greenery, local community

Attitudinal Difference Toward Green Conservation Activities Based on Population Density At Prefectural Level

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1. Introduction

Green conservation in cities is one of the ways to develop a green city environment. Green conservation activities by citizens have been in action in Japanese cities. In this study, the objective was defined to uncover differences between cities and other areas with respect to situations of green conservation activities.

2. Study Methods

An attitude survey regarding participation in green conservation activities was conducted with citizens as a study subject (n=1,500). This survey was conducted online through a private company specialized in online research. Research contents included: demographics of respondents, participation experience in conservation activities, interest in participation, and attitude toward participation. In this study, for the purpose of comparison, prefectures were divided into three groups based on population density of each regional government, with 3,000 populations per square kilometer and 1,000 populations per square kilometer as cut-off figures. The prefectures with population density of 3,000 populations per square kilometer include Tokyo (6,016/km²), Osaka (4,667/km²), and Kanagawa (3,745/km²); and this group is indicated as *O3000* in the article. Those with population density of below 3,000 but 1,000 or above per square kilometer include Saitama (1,894/km²), Aichi (1,438/km²), Chiba (1,206/km²), and Fukuoka (1,019/km²); and this group is indicated as *U3000*. Lastly, all other regional governments fall under the *U1000* group with population density below 1,000/km². A chi-square test was applied to this analysis.

3. Results And Considerations

3.1 Individual demographics

The respondents consist of 50% each of male and female with 750 respondents each. The distribution of ages was; 250 respondents (16.7%) for each 10-year segment from 10's to 50's, 188 (12.5%) in 60's, and 62 (4.1%) in 70's. As for the employment status, 779 (51.9%) were employed, 439 (29.1%) were unemployed (e.g. homemaker), and 285 (19.0%) were under another status. The respondents are relatively well distributed through different genders and age segments. Next, respondents' residence areas were as following: The number of residents in the area of *O3000* counted 475 (31.7%), that in *U3000*, 328 (21.9%), and that in *U1000*, 697 (46.5%).

3.2 Participation experience and interest

The number of respondents who had had participation experience in green conservation activities counted 92 (19.4%) in *O3000*, 86 (26.2%) in *U3000*, and 190 (27.3%) in *U1000*; and a statistically significant difference was detected ($p < .05$). The number of those who are interested in participation was; 178 (37.5%) in *O3000*, 141 (43.0%) in *U3000*, and 190 (45.3%) in *U1000*; and this result also exhibited a statistically significant difference ($p < .05$). Compared to the respondents from *O3000*, those in *U3000* and *U1000* resulted with a higher rate of participation experience and interest in green conservation activities.

3.3 Attitude towards participation in conservation activities

The number of respondents who answered, *don't know how to collect information* was 216 (45.5%) in *O3000*, 120 (36.6%) in *U3000*, and 307 (44.0%) in *U1000*, with which a statistically significant difference was detected ($p < .05$). There was no significant difference with 14 other question items.

4. Conclusion

In the study of participation experience and interest in green conservation activities, there was a statistically significant difference between regional governments of population density 3000/km² and above and those of below 3000/km². From this result, difference has been identified between cities and other areas with respect to the situations of green conservation activities.

Keywords: Green Conservation Activity, Population Density, Prefectural Level

HGG01-P03

Room:Convention Hall

Time:May 27 18:15-19:30

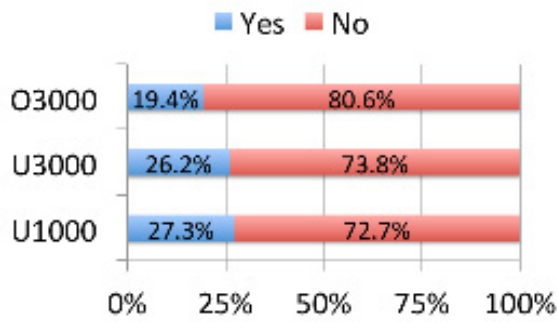


Fig.1 The percentage of participation experience in green conservation activities ($p < .05$)

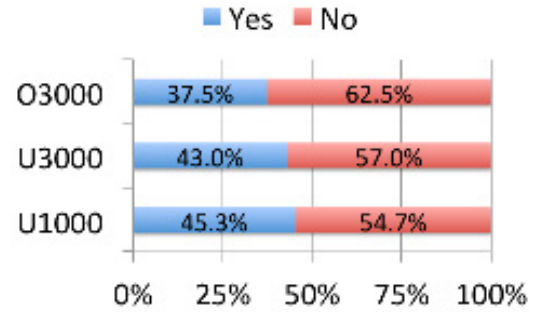


Fig.2 The percentage of those who are interested in participation ($p < .05$)

Comparison of Scenery Images of Japanese And Those of Indian Habitants in Fiji Through Image Sketches

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In this study, the objective was set to clarify the difference in images of forests between Japanese and Indian habitants in Fiji.

The gender composition of respondents was the same for both Japanese and Indian habitants in Fiji: 19 males and 31 females. The age distribution of respondents was also the same for both subjects: 21 respondents in the 20's, 6 in 30's, and 23 in 40's and above. With habitants in Fiji, a sketching survey was conducted in the Republic of Fiji between August and December in 2013. The same type of survey was administered with Japanese respondents between May and December in 2014.

In the respondents' sketches of FORESTS, many nature elements were drawn, such as mountains, trees, and the sun. In particular, the sketches by Indian habitants in Fiji typically included palm trees, which are common in tropical areas, together with mountains as a main feature. In addition, houses and villages were also included in the nature scenery. This result possibly implies that nature is closely connected with their everyday life. As a result of responses by each ethnic group, a statistically significant difference ($p < .05$) was detected between the Japanese and the Indians with the drawing of NATURE: 94% of Japanese and 54% of Indians. Another statistically significant difference ($p < .05$) was detected with the drawing of FARMING VILLAGE: 6% of Japanese and 46% of Indians. It is possible to generalize that Japanese people capture FOREST in the nature, while Indians consider FOREST not only as nature but also as part of a farming village. The definition of NATURE is where scenery is constructed with mountains, rivers, and forest trees; and that of FARMING VILLAGE is where manmade objects such as houses and farms are drawn as a main feature. Through the analysis of sketch details, it was observed that Japanese would draw details of natural items, while Indians do so with plants and vegetation items.

Next, spatial structures were examined per each ethnic group. A statistically significant difference was detected both in the close range view, 46% of Japanese and 2% of Indians, and in the distant view, 4% of Japanese and 68% of Indians. Regarding the spatial structures, majority of Japanese described forest scenery as a close range view, whereas Indians drew this as a distant view. A close range view by Japanese would include forests in the nearer site. A distant view sketch by Indians typically situates a range of mountains in a distance, from which waterfalls and rivers flow out and eventually connect to the ocean. In addition, other things were drawn surrounding these elements: palm trees, which are typical in tropical areas, other trees, and manmade objects such as houses and villages.

Lastly, forms of trees drawn were studied per each ethnic group. A statistically significant difference ($p < .05$) was detected with a cone shape, a random shape, a round shape, and a palm tree shape: With the cone shape, 43% of Japanese and 6% of Indian; the random shape, 28% of Japanese and 4% of Indian; the round shape, 39% of Japanese and 62% of Indian; and the palm tree shape, 0% of Japanese and 86% of Indian. Japanese drew coniferous trees such as cedar in a cone shape, while Indians who inhabit Fiji drew palm trees that are typical to tropical areas and known for their unique shape. The shapes of trees in the forest scenery sketches were the ones that were originated from the area of certain geographic location, geology, and weather.

Keywords: Scenery Images, Japanese, Indian, Comparison

Acceptance of Forest Aesthetics in Japan ? A Technological System Applicable for Different Countries and Vegetation

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1. Backgrounds and Purpose of the Study

The existence of the Jingu Shrine forest is very precious as it provides vast green space in the center of the city. Upon the development of the forest plan for the inner garden of Meiji Jingu Shrine, although there seemed to have been the involvement of various forestry academics that had engaged in forest aesthetics during their studies abroad in Germany (Imaizumi, 2013), how the specific details were reflected in the forest garden plan was still unknown.

This study focuses on the specific area of forest management/silviculture, revealing both similarities and differences between the two, and considers the impact of forest aesthetics in constructing the Meiji Jingu Shrine forest.

2. Research Materials and Methods

2-1 Research Materials and Summary

The forest garden plan adopted the Meiji Jingu Shrine's monograph "Meiji Jingu Shrine grounds forest plan(Hongo 1921)" and for forest aesthetics, the second edition of the English version of "Forest Aesthetics (Cook2008)" was adopted as source materials.

2-2 Research Methods

From the overall review and design of the forest garden plan, contents that arise depending on the planning stage of the respective sections were extracted, descriptions about forest aesthetics corresponding to these items were extracted, matches the contents of the forest garden plan to the contents of the forest aesthetics was prepared, and upon clarifying the similarities and differences, the effect of forest aesthetics on the forest garden plan was considered (Shimizu et al.2014).

3. Results and Discussions

In the table of contents of the forest garden plan, the components that apply to each "section" indicates the processes for the construction of the forest garden, and they substantially corresponded to the structure that are applicable to the chapters pertaining to forest aesthetics, application Part A, chapters for forest construction and forest economics (Shimizu et al.2014).

In addition, for each "section", as a result of determining whether there are similarities and differences in the contents of each "item" (5) that respectively corresponds to the forest garden planning and forest aesthetics, there were 22 items with similarities and 13 items with differences. Upon classification of these items, the differences were noted in the descriptions for location and purpose. Similarities were noted in scenic beauty, use, respecting site conditions, constructing a forest with variety, forest duration, ancient trees, ponds and fountains, flow, respecting the placement of the forest and landscape viewpoints. In particular, although the forest plan aims to achieve a forest strictly composed of Castanopsis, oak, and camphor, it became clear that the effects of forest aesthetics can be seen pervasively in forest construction, by taking advantage of the original composition of the forest upon construction, considering the planting of coniferous trees in an area wooded with red pines and broadleaf deciduous trees, methods to utilize the original forest, and taking that as a concept of developing beauty.

Citations and References:

- 1) Yoshiko Imaizumi (2013): Meiji Shrine, Shinchosha, pp.351
- 2) Takanori Hongo (1921): Meiji Jingu Shrine Inner Garden Forest Garden General and Future Silvicultural Methods, Meiji Jingu Shrine Monograph, Volume 13 Construction Management section (2)
- 3) Heinrich von Salisch: Forest Aesthetics, Walter L.Cook Jr. other translations (2008), Forest History Society, pp.346
- 4) Seigo Ito, Yuko Shimizu (2014): Effects of forest aesthetics in the Meiji Jingu Shrine Forest Garden Plan, The 2014 Institute of Landscape Architecture Chubu Branch Conference Research Presentation Abstracts, 39-40.
- 5) An item is, for example, the comparison of information on the natural environment, targeted design, and consideration of silvicultural methods by item.

Keywords: Forest Aesthetics, Meiji Jingu Shrine forest, Takanori Hongo, Heinrich von Salisch, Meiji Jingu Shrine Inner Garden Forest Garden General and Fu