# Development of a Social Capital Index that can Contribute to Elderly Health in Rural Communities

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## Chapter 1 Introduction

1. Introduction

In rural communities where aging is rapidly progressing, it is crucial to find ways to maintain connections with people who have grown up in and communed with the rural environment and to allow people to continue living active and healthy lifestyle. Since living environment and cultural background vary among regions, the types and levels of social networking and support are also likely to vary. Therefore, to assess the social capital (SC) that can contribute to the lives and health of people who reside in rural communities, it is necessary to include items that account for social characteristics that are unique to such communities.

2. Definitions of Terms Used in this Study

1) Operational definition of SC

In this study, “SC” is referred to as a “resource” that enhances the efficiency of the entire society, including the characteristics of groups, societies, and communities, which are built on horizontal connections supported by people, such as trust, norms, and networking. In addition, SC captures people’s subjective perceptions structurally.

2) Operational definition of “rural community”

In this study, by referring to “perceptions of rural communities” issued by the Ministry of Agriculture, Forestry and Fisheries[1)], rural communities are defined as “regions that are typically made of agricultural villages, sustain mutual complementary functions related to the maintenance and management of the local agricultural resources and the production in rural areas, and maintain village functions related to living, such as mutual aid.”

3. Study Structure

The purpose of Study 1 is to conduct a qualitative study on SC that can contribute to elderly health in rural communities and organize the details of SC using the actual statements of elderly residents. In Study 2, we aim to conduct a confirmatory factor analysis on the results obtained in Study 1, create a rural community SC index, and develop a scale after verifying its validity and reliability. Finally, in Study 3, we intend to examine correlations between the created rural community SC index and the health index of the elderly.

## Chapter 2 Qualitative Analysis of Potential Health Benefits of Social Capital in Rural Community - Based on Data Obtained Through Group Interviews with Old People

This study was conducted to identify regional characteristics of salubrious aspects of social capital in a rural community. For this purpose, group interviews took place with three groups, each consisting of six to nine people aged 65 and older in Village A and what those interviewees said with reference to social capital were analyzed qualitatively and descriptively. A total of 610 views were extracted and organized into 141 codes, from which 20 codes that seemed to characterize the rural community in general were sampled and were divided into four categories and eight subcategories. The four categories were made up of “communing with nature,” “maintaining a relationship of trust among community members,” “regarding social norms highly,” and “encouraging social intercourse among individuals and families, and networking.” The benefits of social capital in the village to the health showed characteristics of Japanese rural communities - close links among community members who have communed with nature. There were plenty of indications showing a solidarity type of social capital based on a shared territorial bond strengthened in the milieu of a rural community where people had kept cultivating lands from generation to generation. There were also indications that a growing number of people had become aware of the need to strengthen networking from the viewpoint of a bridge type of social capital. The present study has afford us

useful hints for maintaining the health of the aged in rural areas as well as for building a community very pleasant to live in.

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### Chapter 3 Development of a Social Capital Index for Good Health in Rural Residents

This study sought to develop a social capital index that can contribute to good health in rural communities. A questionnaire was mailed to 7,114 residents of Village A aged 20 years and over in June 2016. A total of 1,327 questionnaires were returned; 4 unfilled forms were eliminated from the analysis and the remaining 1,323 were used to develop a rural community social capital index comprising 4 concepts and 16 items. The goodness of fit of the model was satisfactory, and comparison with other scales confirmed its validity. The model is also associated with the outcomes of self-evaluation of health, sleep status, elderly life competence, frequency of social outings, and Global Deterioration Scale score of 5, thus confirming its criterion-related validity. The reliability of the index was also good with a Cronbach's α value ≥ 0.80 for each concept and all 16 indices. The rural community social capital index developed in this study will help establish healthy communities. Studies of other rural areas are anticipated to accumulate research outcomes.

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### Chapter 4 Correlation between the Rural Community Social Capital Index and Health Index of the Elderly

Since aging is rapidly progressing in many rural communities compared with urban areas, the analysis focused on the elderly and was conducted on the contextual effect of SC at a regional level on the health index of the elderly. In addition, further analysis was conducted on the correlation between the total rural community SC index scores and subscales and the health index.

In the analysis of the contextual effect of SC at a regional level, self-evaluation of health, sleep status, Tokyo Metropolitan Institute of Gerontology Index of Competence (TMIG-IC), Japan Science and Technology Agency Index of Competence (JST-IC), and Geriatric Depression Scale 5 were used as dependent variables. In addition, for the compositional effect at individual level, a multilevel analysis was conducted using a hierarchical linear model that was explained by the following two levels of independent variables: basic attributes and individual SC scores and the rural community SC index at a regional level.

Furthermore, individual level analysis was performed for rural community SC index individual subscales and the total scores, and a partial correlation analysis was conducted on self-evaluation of health, sleep status, TMIG-IC, and JST-IC using gender, age, employment status, and highest level of education as control variables.

In regional analysis, we attempted to analyze 617 elderly people aged 65 or over in 10 districts, but a negative association was found as context effect.

The individual level analysis targeted data obtained from 347 elderly people who were 65 years or older and responded to all applicable items. The results revealed weak to moderate correlations between total rural community SC scores and health levels, including self-evaluation of health, total TMIG-IC scores, and total JST-IC scores.

Based on the aspect of the dark side of SC, due to the declining birthrate and aging of the communities, there is a possibility that a fatigue and a sense of burden may be generated for maintaining the SC depending on the communities.

To generalize the rural SC index It is necessary to investigate in other rural areas, and to accumulate research results.

**Conclusions**

To develop SC that could contribute to good health in rural communities, we consider it crucial to understand the most current SC of people who live in these communities. Therefore, Study 1 focused on the frank opinions of residents and analyzed the data obtained through focus group interviews. The results revealed characteristics attributed to personal connections that were unique to rural residents who had communed with nature up until this point. These characteristics included “communing with nature,” “maintaining a relationship of trust among community members,” “highly regarding social norms,” and “encouraging social intercourse among individuals and families and networking.” Although the interviews revealed many solidarity types of SC that were based on a shared territorial bond, it was clear that the viewpoint of a bridge type SC was steadily increasing among rural residents. The aim of Study 2 was to develop the SC index that could contribute to good health and also capture the characteristics of rural residents’ lives. Consequently, the study elicited criteria comprising 4 concepts and 16 items. Although issues remained in terms of the response rate, suitability of the model, concurrent validity, and criterion-related validity were found to be adequate. In addition, as Cronbach’s $\alpha$ was over 0.80, it appeared that this index is useful for measuring SC that could contribute to good health in rural communities. Thus, the developed rural community SC index could be helpful not only for elderly health but also for understanding the community as a whole from the health perspective.

Study 3, At the individual level, identified a low- to mid-level correlation with the health index of the elderly but the rural community SC at the regional level has a negative relation as a contextual effect.

Going forward, more studies will need to be conducted in other rural areas and more results accumulated to generalize the rural community SC index.