

Development of Public Sphere in Local Community Utilizing GIS

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Abstract

Though the commitment of local residents to urban planning is crucial, lack of information on local community seems to have prevented residents from participating in the official process for urban planning in Japan. Under such circumstances we introduce a concept named “Informed Decision by Informed Citizens through Geographic Information Systems” to try and verify the effectiveness and validity of the concept by conducting a pilot study in a typical Japanese local town, town of Shingu in Hyogo Prefecture. In the pilot study, we conducted a questionnaire survey evaluating over 55 fields such as public transportation, health and welfare services, education, and accessibility to stores or shopping malls in terms of satisfaction and importance to their daily lives to discover the needs from local residents for the local government or community and showed local residents the results by utilizing ArcGIS.

Introduction

In recent years we have been experiencing the third drastic changes or revolutionary reforms regarding the government administration system. The first being the Meiji Restoration of 1868 and the second being the promulgation of the Constitution of Japan in the next year of the end of the World War II. Though under the new Constitution in which the renouncement of the war was proclaimed and a new democratic government was promised, Japanese administrative system remained centralized as it was ever since the Meiji Restoration of 1868 in pursuit of economic growth, delaying the decentralization of Japanese government system.

However, during the 1980s when Japanese people attained the miraculous economic growth and enjoyed the economic prosperity, the centralized government system began to show its dysfunctions and a shift from the centralized system to a more decentralized system has become a big political issue in Japan ever since. Under these circumstances the Decentralization Promotion Law aimed at promoting systematic and general advancement in government decentralization was enacted in 1995. In addition to this movement, the Omnibus Decentralization Act which holds great significance in promoting the transfer of administrative power to local governments was adopted in 1999 and enacted in 2004. In this series of laws the promotion of decentralization in Japan is entering full-scale implementation.

Under the decentralized government system, it is not the central government but the local residents who must form plans, make decisions and take responsibilities. However, it will be difficult for this process of decentralization to go without any problem. Whether local residents can actively participate in their local government to recognize and solve common local problems on their own is indeed a question.

Furthermore, in order to deal with tightened financial constraints, consolidation of municipalities has been promoted in pursuit of scale merit and the number of municipalities has decreased from 3,100 as of April 1, 2004 to 1,820 as of April 1, 2006. With such movements, those newly merged municipalities have expanded both its area size and population size and at the same time suffering problems from reconciliation of residents from former separate municipalities who had few or almost no opportunity for regional exchanges.

Can local governments and local residents identify various and diverse needs and problems in the community as their “own” issue, share the value within the community and come up with solutions is the question here which strikes at the basis of local government.

Possibilities of Local Community Management by Local Residents

We think that local governments from now on need a new framework based on the principle of local autonomy which can be named as “Local Community Management in 21st Century” or “Human-sized Town Development”. The key concept that characterize this framework will be “Informed Decision by Informed Citizens” and improved efficiency and efforts of the local governments or local authorities. As private enterprises do, local authorities as an organization do decision making and implement them, but as an organization formed under the local residents’ trust local authorities must reflect the various values and opinions of local residents in their decision making process. Also, business process and services they provide must be reviewed and reorganized in order to make their execution more efficient and effective.

In recent years various methods or measures such as introduction of executive agency and market testing, TQM (total quality management) and benchmarking, developed in the private sectors under the principles of market mechanism and management based on accomplishment have been in the spotlight for improving efficiency and effectiveness of local authorities. However, the object of these methods and measures are local public services and over-the-counter services such as registration, and we must never forget that it is the local residents and not government executives who are to set administrative goals to achieve and what and which level to provide as local public services.

In order for local residents to become involved in the process of local decision making residents must realize their role as citizens who have rights and obligation towards their local governing authorities. Also residents must have knowledge and access to information necessary and needed to recognize various problems within their residing area, and furthermore to discuss and come up with a solution for such problems.

Simon(1960) has divided the process of decision making into three phases: intelligence, design and choice, but when looking at local authorities or local government as a organization which do group decision making by local residents on local matters, they have to ensure the impartiality of residents’ chance to be involved in such group decision making processes and the access to necessary information and local residents are required enough knowledge to make responsible decisions in turn.

In this study, from these underlying perspectives we propose a new framework for local group decision making process: “Informed Decision by Informed Citizen through GIS” as the method for attaining “Community Management in 21st Century” or “Human-sized Town Development” in which the application of GIS becomes the key in supplying local residents, counselors and mayors as representatives of the residents, and their staffs needed information and knowledge in planning and executing and evaluating local policies.

Possibilities of Sharing Information among Local Residents through GIS

There are various definitions for the term “information” but McDonough(1963) have defined information from the perspective of economics and management as; “data” is messages which have not evaluated their values under the specific circumstance, “information” is the meaning of data which are evaluated under the specific circumstance and “knowledge” is the more general expression of information and the general stock or accumulation of useful matter by knowing. By utilizing this definition, we can say that our information activities are the process in which we gather or collect the vast amount of data consciously or unconsciously through our five senses, evaluate them based on awareness of the issues or problems set depending on value, place and situation, use them as information and save some of them as knowledge and throw away others. This obviously means that if we do not value certain issue as important then data related to that issue will not be converted into information. Our awareness of the issues may change with information and knowledge that have been accumulated. This definition by McDonough also means that as long as values and emphasis on issues are not shared, sharing information between individuals is impossible, for data is subject to discard when regarded as unimportant.

“Issue” or “problem” in this context means a gap between reality (what as is) and ideal (what to be). Local residents, whether consciously or unconsciously, have ideal images of their area they reside. However, both reality and ideals recognized by local residents tend to be limited by their reach of daily activities and knowledge. Further, information and knowledge that residents acquire in daily life varies due to their different lifestyles and personal values, making both reality and ideal subjective rather than objective. Individual concern also tend to become limited to certain fields such as education, child care, employment, welfare services and business promotion depending on the residents’ age, sex, occupation and such. Thus individual ideal image and need towards local community become subjective and limited in small and specific fields. As a result, sharing of information among local residents become difficult and thus becomes an obstacle for promoting autonomous community management by local residents.

In order to make our proposal of “Community Management in 21st Century” or “Human-size Town Development” work properly, local residents have to recognize the “reality” of the local community appropriately. However, as we have just mentioned above, it is difficult for individual local residents to recognize reality comprehensively and objectively. On the other hand, data and information and knowledge that local government possess and store are both comprehensive and objective. However, they are official and thus tend to lack in richness as information compared to its unofficial or local counterparts and suffer from negative influences of sectionalism as well. This lack of richness and vividness of data and knowledge tend to prevent local government officers from fostering an awareness of issues of problems.

For this issue we think that the concept of “public” and application of GIS technology will become the key in solving the problem. Though there are many ways of interpreting “public” we would like to pay attention to the concept of “public sphere” advocated by Habermas(1989) which logically supports public activities led by citizens such as those typically seen in Non Profit Organizations or Non Government Organizations.

According to this concept of “public sphere”, active communication among local residents is necessary in order to share information and awareness of the issue or problems. Thus it can be said that local residents who have the needed information and knowledge who can be called conscious as citizens, or “informed citizens” are necessary for “Community Management in 21st Century” or “Human-sized Town Development”, and GIS will play the key role as the communication media for achieving local-residents-led local autonomy.

Empirical Experimentation Conducted in Town of Shingu

To test the possibilities of the concept of “Informed Decision by Informed Citizens through GIS” we conducted a questionnaire survey in town of Shingu and showed the results through leaflet to the local residents. Town of Shingu, now is consolidated with neighboring towns and city into City of Tatsuno, is a typical small local town in Hyogo Prefecture, Japan. The population and the number of households was 16,948 and 5,224 as of April 1st, 2005.

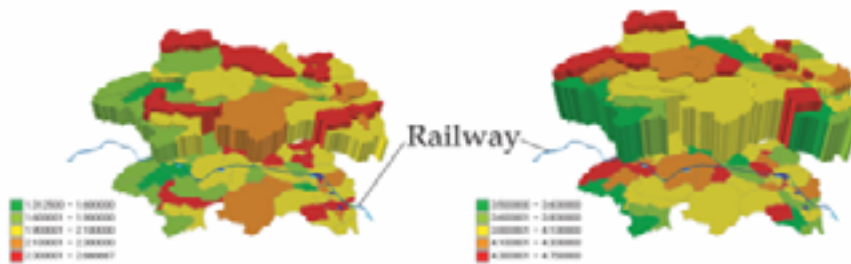
In the questionnaire we asked local residents to evaluate 55 fields regarding their living environment including public transportation, health and welfare services, education, and accessibility to stores or shopping malls and their participation to public administration in terms of satisfaction and importance level over 1 to 5 “Likert” scale. The questionnaire was distributed 4,860 households belonging to neighborhood associations in the town of Shingu with the help of each neighborhood association in November 2004 and 1,105 questionnaires was collected through mail by the end of January 2005.

Figure 1 shows several examples of graphical representation of average “satisfaction level” and “importance level” aggregated for all 47 neighborhood associations within the town of Shingu. From these GIS figures we can see that though located within a same town, for specific topics *deleted* residents or households belonging to individual neighborhood associations rank them highly while others do not.

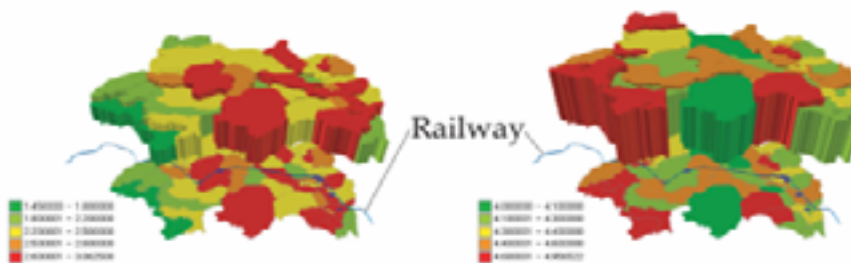
We presented the results of the survey to the mayor and executive managers of the town in March, 2005 and they agreed fully with the maps which visualize the local issues and commented that the diversity of requirements and requests they had been receiving (or had received) from local residents is well-represented in the map and the locations of public facilities such as town hall, library, healthcare center, fire station, police office and railway stations properly influence the aggregated evaluations by each neighborhood associations.

We also presented the survey results to the council members of the federation of neighborhood association in April, 2005. At the meeting some of the council member expressed the opinion that the maps such as shown in Figure 1 helped them understand some neighboring associations had

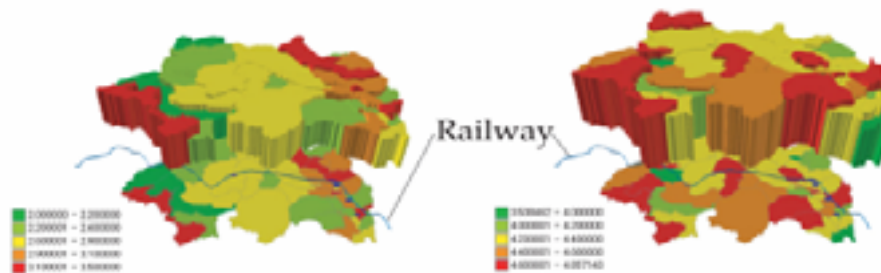
On Railroad Accessibility
Satisfaction Level(L) Importance Level(R)



On Medicare Service
Satisfaction Level(L) and Importance Level(R)



On Emergency Service
Satisfaction Level(L) and Importance Level(R)



On Shopping Accessibility
Satisfaction Level(L) and Importance Level(R)

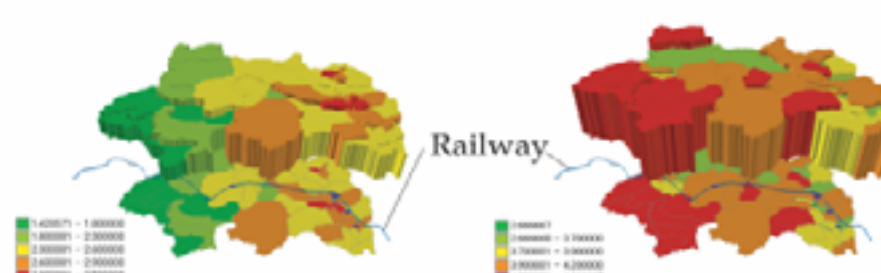


Figure 1. Visualized Local Residents' Satisfaction and Importance Level

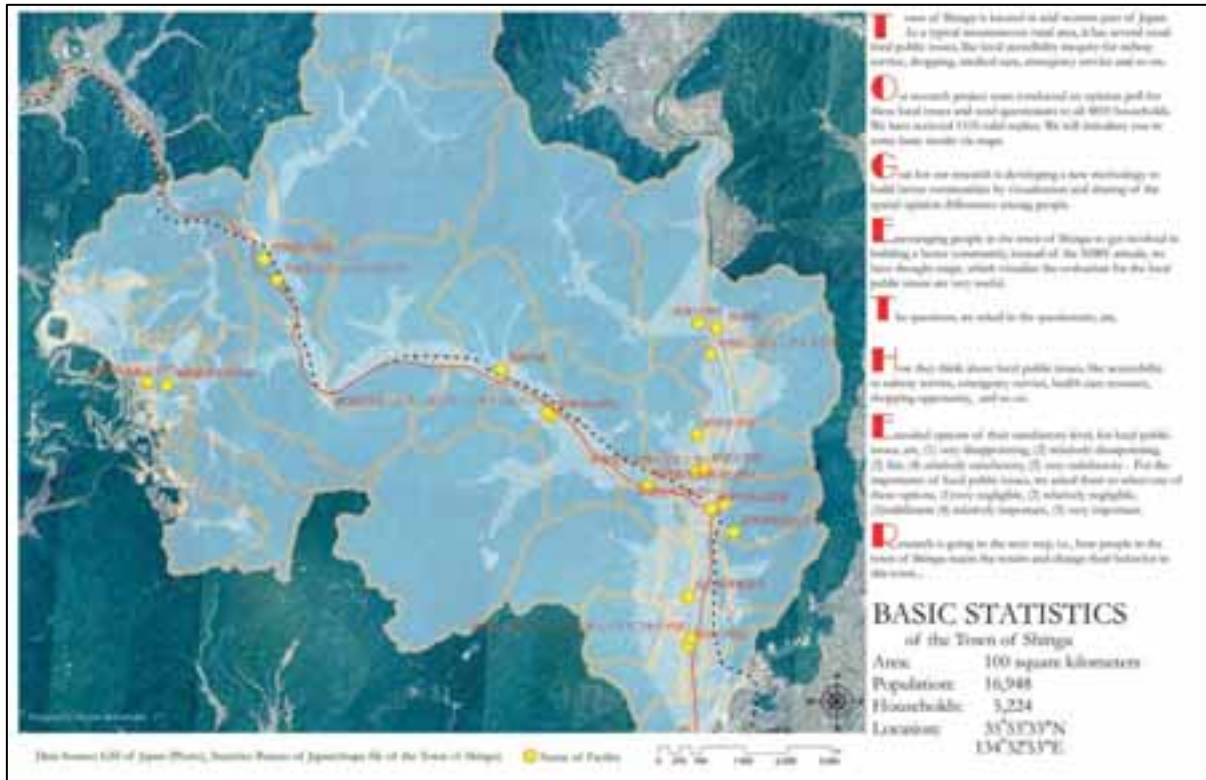


Figure 2. Poster to Show the Survey Results

common problems to tackle and would be useful in solving the problem in corporation with each other.

In May, 2005 we opened a web site to show the survey results to the public and distributed leaflets which show representative results of the survey to the households of the town of Shingu. Figure 2 shows the one of the posters we made to make the survey results widely known.

One of the main purposes of the experimental questionnaire survey conducted in the town of Shingu was to verify if the evaluation of the local residents over 55 life environment related fields would change or not after understanding the different satisfaction and importance level from other neighborhood associations. Though we planned to hold several town meetings to get direct responses from local residents, the town of Shingu has consolidated with two neighboring towns and one city to form the larger city of Tatsuno in October 2005 and our plan has been postponed since then.

Concluding Remarks

Having experienced the Hanshin-Awaji Earthquake of 1995 in Hyogo prefecture a new concept of “Human-sized Town Development”, a concept targeted at achieving citizen-led development is being suggested as a course for reviving Hyogo prefecture from the wreckage of the earthquake. What this “Human-sized Town Development” aims is not to be confused with the typical Japanese style “Residents’-Participation” through involvement of representatives from various conventional

local community based organizations such as neighborhood associations, association of retired persons and association of women in which a premise that such organizations function properly is required in order for the system to work correctly.

Rather, the points we like to emphasize are:

1. As residents and members of local communities who are obliged to participate in all steps of plan-do-see management cycle of local government be looked at and focused directly,
2. With realization of the diversity of members of local communities, make citizens participate in the planning process by having them think together about ideal visions of their own community based on the common understandings on the communities they live in,
3. By having citizens become aware of various gaps between their ideal and the reality, make citizens participate in the “Do” process by utilizing knowledge and experience about their own locality,
4. By promoting and helping citizens to attend the “See” process through town meetings or questionnaire surveys and promote understanding that their articulation of needs to local government and participation to “Plan” and “Do” process is necessarily to change their local community and their quality of life.

In continuing our studies we hope to build a system in which the sharing of information, a factor crucial to all four points of the “Human-sized Town Development” can be supported by geographic information systems and publish further report on its effectiveness on local government.

Acknowledgement

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