
Research on New Regional Creation Business Model Utilizing Social Network and Crowdfunding

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Abstract

This paper examines cases based on the hypothesis that using a regional vitalization technique that employs social media will create better relationships for the communities of both regional and urban residents by bridging the abundant regional resources of hometown areas and the human and material resources possessed by urban residents. It seems like the information technology skills and resources that urban residents possess could potentially develop into innovations that create new social capital by influencing old communities of regional residents. The development of IT has made it possible to create a bridge between regional and urban residents using things like SNS and crowd funding. The decline of local communities due to a reduced population is an important factor that has an impact on the future of the entirety of Japan. In response to this problem, the young generation is making attempts to vitalize regions based on a relationship of sharing, co-creation, and sympathy that come from sharing the same space by using IT. The general idea of a share village is that old Japanese-style homes in regions are regarded as villages and multiple hometown areas can be chosen for SATOGAERI (Country life experience). This project is an initiative with the objective of preserving old Japanese-style homes that are pieces of history and saving Japan's original landscape for the next 100 years. Thus, bridges are built between regional residents and the resources of urban residents based on a perspective of generating social capital and focusing on structures that are maintained by many people. This paper examines the possibility of generating new social capital through regional vitalization and reviving local communities by creating such bridges, and it presents a new design for local communities.

Keywords: Social Networks, Social Capital, Regional Vitalization, Crowdfunding, Bridging, SNS

1. Introduction

The decline of local communities consequent upon a reduced population has become an important factor that will impact the future of the entirety of Japan. It is anticipated that maintaining local communities will become difficult in many areas in Japan due to the declining population. This collapse of community is also happening in a similar manner in cities where the population is concentrated. The increase in single people in cities has changed people's lifestyles. Local communities that are based on traditional reciprocity and trust are dying out because of the weakening of relationships with other people. Therefore, it is becoming difficult to manage social life while maintaining relationship with social groups and organizations. In response to this, a variety of organizations, including the government, are making efforts to at regional vitalization and to revive local communities. The Cabinet Office for the Promotion of Regional Creation has taken up the slogan "Regional Creation Opens up Japan's Future." This slogan signifies the attempts of localities and cities, centrally led by local public groups, to independently work towards autonomous revival. Additionally, private initiatives such as non-profit activities by NPOs and Corporate Social Responsibility (CSR) activities by general corporations are also demonstrating rapid growth.

In Japan, volunteer activities by individuals and NPOs and CSR activities by general corporations that are focused on "kizuna" bonding) have become established since the Great Hanshin Earthquake and the Great East Japan Earthquake. In this way, there has started to be diversity in the manner of interacting with local communities. However, many of these interactions are initiatives that seek economic results through the sale of goods and the development of tourist attractions through regional branding. Accordingly, holding events plays a central role in

regional vitalization or the revitalization of towns. There are not many basic discussions being held about how these initiatives aimed at regional vitalization can design relationships between society and the people living in these areas so that it leads to rebuilding an independent and sustainable local community. Regional vitalization, as it is discussed in this paper, is taken to mean rebuilding local communities that have declined. Additionally, the present author has noticed that the development of IT is a big part of the underlying context for the acquisition of this diversity. New tools like crowdfunding, SNS, and the utilization of social media have made the transmission of information, an essential element for creating a network, possible.

It seems like a vitalization style where a network of urban and regional residents is created to mutually supplement the resources that each group lacks is different from the traditional approach to regional vitalization. It also seems that this will be an essential component of regional vitalization going forward and that it is also an element that cannot be excluded when thinking about new designs for local communities in the future. Based on this context, this paper presents a new design for local communities that vitalizes the region and rebuilds the local community by focusing on social capital and building a mutual resource bridge between urban and regional residents. It also examines the possibility of generating new social capital based on some examples.

2. Literature Review

2.1. Issues and the Utilization of Social Capital

There are several issues that need to be resolved for regional vitalization. One such issue is the problem of insufficient resources and another one is continuity. The term local community in this paper is not used in a manner that is especially limited to regional areas because of the fact that there are already unavoidable problems with local communities for urban residents living in major cities in Japan as well. Smoothly carrying out regional vitalization requires a place for communication between urban and regional residents and the actors who are charged with this task. It is possible to maintain a continuous local community by connecting people with large activities through involvement in these places. Therefore, social networks that connect individuals and many groups using their relationships are becoming very important. It seems that by combining the trust and reciprocity described by Putnam, R.D (2000) with social networks, groups of people are able to mutually mobilize and supplement resources, new innovation is created, and social capital accumulates. Additionally, Putnam brings up bridging, the connection of heterogeneous groups, and bonding, the connection of affiliated people, as the most important types of connections in the social capital system [1]. This paper will discuss regional vitalization through bridging.

2.2. The Importance of the "Actors"

In modern times, many of the communities that are the same as they were a long time ago have already collapsed. Accordingly, a necessary condition for regional vitalization is the rebuilding of communities that attract diverse and heterogeneous individuals and allow them to coexist. To accomplish this, it is essential to recreate place for it.

The present author feels that the participation of urban residents is indispensable for such places and that regional vitalization that is done solely at the regional level will not be succeeded. However, it is not attractive for urban residents to actively participate in the local communities that demand the old-style local bonds. Rather, urban residents tend to prefer weak relationships where there is a certain amount of space from a situation where their personal freedom is mutually restrained by duty or responsibility. Making urban residents that don't belong to any specific community voluntarily participate in a community faces the difficulty of creating a new place that serves as a loose community that is unconnected to responsibility or duty and does not infringe on individuality at all. On the other hand, regional residents also have little need to ordinarily use social media; also, the lack the technical literacy necessitates a dependence on external actors in situations when many expectations are pinned on the use of social media for regional vitalization. Therefore, an actor that allows for bridging between regional and urban residents seems to occupy an important position. According to Matsuda (2017), for leadership to cause innovation in the information society is bridging leadership. "Bridging leadership" is a model that each reaches Co-CREATION based on ownership [2]. M•Granovetter (1973) describes the importance of actors in the "The Strength of Weak Ties" stating that weaker social ties are important and create benefits [3]. R•S•Burt (1992) argued that social capital is

related to the structural holes in the net [4]. Along these lines, there are always individuals or small groups of people who perform the bridging of the gaps between mutual networks, and they can be thought of as a presence that holds the key to the potential of social capital.

3. Research Methodology

3.1. Ventures to Utilize Social Media for Regional Vitalization

Masahiro Takeda who organized the share village project left his home area of Akita prefecture and worked as a game creator in a city. On the news he learned that Akita prefecture was the most aging prefecture in all of Japan and that there is the concern that this would result in 95% of all of the cities, villages, and towns disappearing by 2040. At the age of 25 he decided he wanted to make Akita lively by using his own special skills (IT) and set out to start a business. Takeda initially tried selling Akita rice over the Internet with 3 young farmers [5]. He raised funds using crowdfunding under the name the "Social Farmer 'The Tractor Guys' Project" to test how much recognition of this concept has spread, but the project failed [6]. Through this failure, Takeda realized the importance of integrating into support communities as a sympathizer rather than as a consumer. The second crowdfunding project entitled "A New Community that Connects you with the Farmer 'The Tractor Guys' Project" was started focusing on sympathy and community, and this project succeeded in fund raising [7]. Based on this success, Takeda thought of networking relationships that interweave multiple layers for the objectives of many independent individuals rather than networking relationships that are restricted to a single level like that of consumers and producers. The foresight that this loosely connected community was the key to the continuity of the project was the foundation for the development of the plan for the share village.

3.2. Social Media and Urban Residents

The importance of social media is increasing in the lives of urban residents. For young people, in particular, everyday life is centered on social media. The term "the sociality of connections" was used to denote young people's dependence on social media in Japanese cyberspace (Kitada, 2006) [8]. The "connected sociality" described by Kitada is one characteristic of the young people who use social media and who consider being connected in a formal and self-contained manner as important in and of itself (Figure 1). The urban residents who sympathized with Takeda's shared village and became SONMIN had a sex ratio of 59 males to 41 females, and this roughly coincides with the sex ratio of Internet users in Japan. Additionally, most of these people were between the ages of 25-45, and it was supposed that this was the class of people who had work experience as working adults [9-11]. Takeda defined the target of his project as people working in cities who were tired of city life and wanted relief. A mechanism is needed to get this type of young people to be focus on the external problems of rebuilding old Japanese styles homes and reviving communities [10]. Additionally, the question of what type of information these people can provide is important for the formation and maintenance of communities of urban residents.

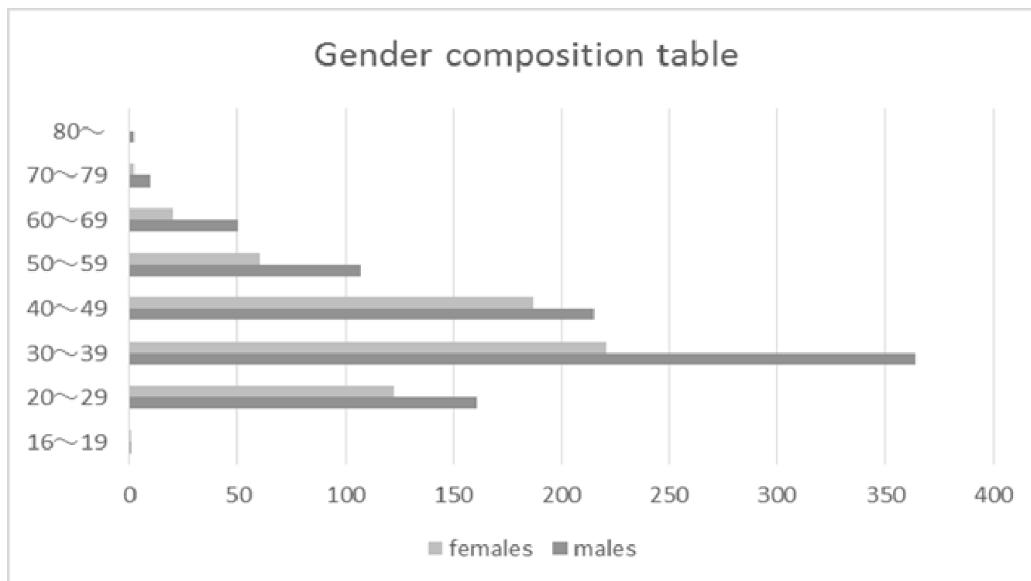


Figure. 1. Gender composition table

3.3. Ventures to Connect Urban and Regional Residents with IT

Takeda's initiatives to create social capital started from hearing that an old Japanese-style house in Gojomemati in Akita prefecture that had a thatched roof for more than 100 years was being torn down because it had high maintenance costs and no one was living there. He made an appeal for the creation of a personal village through a SNS by regarding an old Japanese-style house that had stopped being maintained in a rural area as a single village. He had a plan to maintain these old Japanese-style houses for the next 100 years by gathering virtual SONMIN and covering the majority of the maintenance costs of these old houses using crowdfunding.



Figure 2. Share Village Machimura exterior

Crowdfunding is a mechanism to raise funds from an unspecified number of crowds. Many companies have started services in Japan since 2011 as well [13,18]. The project to revive old Japanese-style houses that was "recruiting 1000 SONMIN" going for 45 days starting on February 27th, 2015 succeeded in fund raising 571 million yen from 865 people, and this exceeded the goal they set of 1.0 million yen. The most support for the project to revive old

Japanese-style houses who didn't even know about Akita prefecture came from a total of 524 people in the Kanto region (60.57% of all of the supporters): 337 people in Tokyo, 99 people in Kanagawa, 44 people in Chiba, and 44 people in Saitama [14]. There were also 222 supporters in Akita prefecture, and this made it clear that there is a limit to fund raising that is restricted to a region (Figure 3).

MACHIMURA Project Top 5				NIO Project Top 5			
	Prefectures		Total villager		Prefectures		Total villager
NO 1	Tokyo	Kanto	337	NO 1	Tokyo	Kanto	255
NO 2	Akita	Tohoku	222	NO 2	Akita	Tohoku	100
NO 3	Kanagawa	Kanto	99	NO 3	Kanagawa	Kanto	73
NO 4	Saitama	Kanto	44	NO 4	Kagawa	Shikoku	61
NO 5	Chiba	Kanto	44	NO 5	Chiba	Kanto	25

Figure. 3. Top 5 supporters by area (MACHIMURA Project & NIO Project)

The similar Kagawa prefecture project done as a second village also finally succeeded in fund raising 3.53 million yen, and this exceeded the goal of 3.0 million yen that was set for it [15]. This case had similar results, and 382 of the 742 supporters were from the Kanto region. This proves that crowdfunding is a technique that makes it possible to recruit supporters for regional projects outside beyond the project regions (Figure 4).

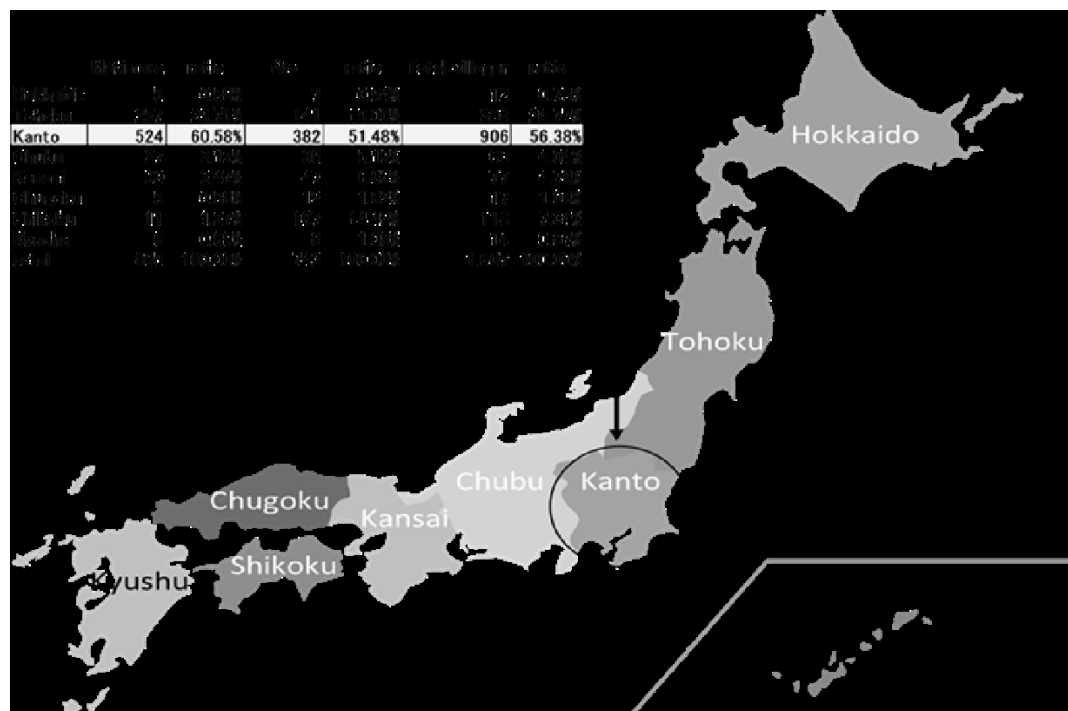


Figure. 4. Total table by supporter's area

The project announcements and advertisements were mainly done using Facebook and Internet articles. The network of weak ties the recruiter has becomes important for fund raising using crowdfunding, and in this case, that network is Facebook [16]. Thus, the number of friends who are potential cooperators is quite important. In Takeda's case, he became connected to a network of weak ties by steadily increasing his friend's accounts, and this can be expected to have an effect of increasing the success rate. In this way, the use of the Internet and social media transcends temporal and spatial distances, and this has been considered an advantage that can be effective for regional vitalization [17]. On the other hand, SNS use requires the inclusion of elements that make the receiver sympathize and want to connect

with the information being dispatched. The technique that Takeda employed is always transmitting information primarily over Facebook.

The implementation period of crowdfunding frequently corresponds to all sorts of speeches or interviews in local newspapers or magazines because it is appealing to how the project is being viewed [19]. Takeda adopted the strategy of gradually increasing the topical nature by using the media starting with local newspapers, then using national papers, and finally using TV programs, and he transmits information so that the SONMIN who are its receivers can experience a sense of growth and the increase in size of the project. This point seems to be a successful element for stimulating regions using social media [20]. Thus, bridging urban residents with this project was done not by merely transmitting information but rather by providing information that has a high entertainment value and a unique perspective that is always aware of the receiver. Takeda describes this type of information as having game like elements.

A unique point in Takeda's examples is that it ascertained the characteristics of the individual who would be receiving the information on the net. He has presented a new regional design that made the individuals into the main constituent by stating that "there aren't SONMIN (villagers) because there is a village, rather a village can be created because there are SONMIN." Takeda's trials are a completely different approach from those that have traditionally been seen in regional vitalization whereby revitalization of a town is done primarily by regional producers who attract buyers from outside and create relationships with them. Additionally, this eliminates the disadvantage of not being able to utilize successful experiences from other places in new regions because the actors are different in each regional project. Thus, it is possible to increase the success rate by re-using the population of as a project that succeeded once as a supporter. By doing this, it becomes possible to secure the continuity of a project. In this way, a success story done by the same actors can be used as a model, and even the population can be re-used in the next project. A such a structure has be confirmed as being able to produce a certain level of results, but it is difficult to be able to apply this to all of the cases of regional vitalization. Thus, it seems this has only proven the validity of crowdfunding as a new model for fund raising methods.

3.4. A share village for SONMIN that shares the local community's space and time

Takeda's share village plan is not bound to a specific region. At the current point in time, there are only the two cases of the first village known as the "Share Village Machimura" in Akita prefecture and the second village known as the "Share Village Nio" in Kagawa prefecture. The final goal is have villages that consist of 1,000,000 people. These villages are structured such that when a person pays NENGU (Rice Tax ; Membership dues) and becomes a SONMIN (villager ; Members), they can SATOGAERI (Country life experience) to a village of their choosing when they feel like it (Figure 5).



Figure. 5. One million people village concept image

The villages have advocated "not having set entertainment," (Non-Omotenasi) and each person can spend their time as they please. These share villages are a system that offers the new value of sharing the space of a village and the progression of time. In the commercial world in Japan, the shift away from material things to selling experiences or events is moving forward, and one of the characteristics of this case is that it provides the value of sharing a local community's space and time and connecting the SONMIN in such spaces. The following two important points can be brought up with regards to Takeda's manner of using social media. The first such point is that he gave the receivers novelty and a fresh surprise by always thinking about things from their perspectives. The second such point is that he retained originality by not cooperating with a specific group or receiving subsidies.

3.5. Building bridges from the virtual network to the real network

The population of Takeda's share village plan were urban residents who were "tired of city living," "longing for life in the countryside," and "didn't have a country home." Social media is an extremely effective means of transmitting information to them. The SONMIN who sympathized and gathered around Takeda's plan initially formed a virtual community. Funding donors were solicited from across the entire country to simultaneously raise money and recruit SONMIN by creating web site and using crowd funding. However, the funding mainly flowed out of Tokyo. Inevitably, the success or failure of a project hinges on how fund raising can be achieved from the urban residents of Tokyo. Because urban residents live in cities that have optimized economic priorities, they have a tendency to seek relief, and this tendency made them have a strong reaction to Takeda's catch copy. However, in reality, a community formed via a virtual network rarely gets involved with the external problems of the depopulation of local communities or issues with their decline. Therefore, Takeda was very fastidious with naming things, and rather than using terms like membership fee, he used the term NENGU (Rice Tax ; Membership dues). He took in young people with unique expressions like the catch copy "isn't it time you also paid the piper" or advertisements that showed the holding of a village festival with music entitled "IKKI"(Figure 6).



Figure. 6. village festival with music entitled "IKKI."

The basic amount of money collected for NENGU (Rice Tax ; Membership dues) or at YORIAI (Village meeting) is 3,000 yen. This was calculated from the average amount of money that can be provided to another person free of charge, and he kept in mind a smooth switch over from a virtual network to a real network. There are already cases that are similar to Takeda's initiatives that are popping up. In Japan where there is not a culture of giving contributions, regional vitalization through the use of crowdfunding has many elements that will be expanded on in the future. Additionally, the Cabinet Office for the Promotion of Regional Creation established a liaison conference entitled "Investing in Hometowns" (established on October 31st, 2014), and government agencies are also

researching and utilizing it as a future technique for regional vitalization. Another one of Takeda's declared objectives was to save Japan's original landscape for the next 100 years. Thus, it is essential that fund raising is not stopped and that the continuity of the project is secured. To this end, the question of how a virtual social network can be made into a local community and bridged with a real network is important.

Takeda constructed a structure to attract SONMIN in multiple stages because the characteristics of the population are such that they are a loose community that doesn't want to be bound by something. First, he set up a place where there can be direct exchanges between fellow SONMIN that is known as a YORIAI meeting for the urban residents who became SONMIN upon paying NENGU. The YORIAI meetings are small parties for around 20 people, and they give a report of the recent state of share villages and announcements of events. People then enjoy the local alcoholic beverages and appetizer or snacks. This is the same as the YORIAI meetings that have been held in villages in Japan and have remained unchanged since long ago. This is an important place for bridging that develops the SONMIN's relationships with Takeda to being a relationship between fellow SONMIN, and it is a mechanism to build a bridge between the virtual community comprised of people in urban areas to a real community that consists of fellow SONMIN. These YORIAI meetings are held in a different location each time. The reason for this is that they are held a certain distance from the registered addresses of the SONMIN based on an analysis of past participation. To change a virtual community that is not bound by space and time into a local community in an urban area, it is essential to prevent it from transforming into a solidly united community where the same SONMIN always gather. Additionally, there is also an effect of inviting SONMIN who do not participate in real activities to the YORIAI, and this maintains a situation where 50% of the people are always new participants.

In this way, Takeda skilfully uses the sociality of connections that is a characteristic of social media users. Social media users who place importance on being connected to a community have a comfortable sense of distance when participating in YORIAI as well as when remembering their participation. Second, the fellow SONMIN that became acquainted at the YORIAI are incited to do a SATOGAERI where they actually visit an old Japanese-style house. To accomplish the original objective of maintaining the old Japanese-style houses, the income generated by lodging during a SATOGAERI or by participation in local experiential programs is important, and thus, the question of how to make the fellow SONMIN go on these SATOGAERI is important (Figure 7).

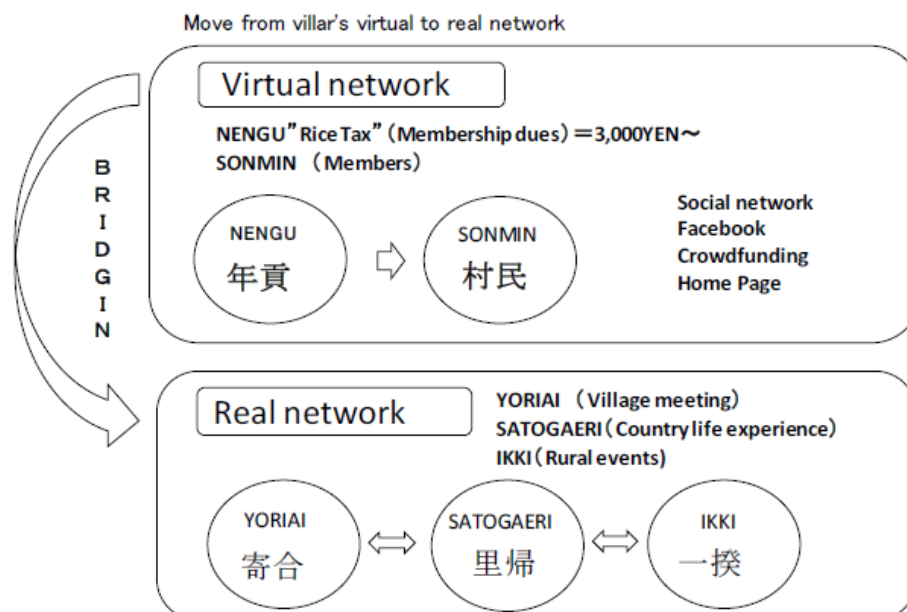


Figure. 7. Move from villar's virtual to real

To achieve this and create a sense of premium status, game like elements of feeling like a goal was achieved were incorporated. This was done by creating different tiers of involvement with different names depending on the number of times a person has visited a village, and there are "Bronze SONMIN," "Silver SONMIN," Gold SONMIN," and "Honored SONMIN." Additionally, the SONMIN who have done a SATOGAERI are connected to the SATOGAERI of other SONMIN by transmitting information via a SNS. The share villages function due to the creation of this type of circulatory cycle that uses the Internet. In the course of this series of events, there is little direct promotion with the regional residents, but it results in the old Japanese-style houses being maintained. Also, the urban residents who would normally not visit these areas have come to be interested in them, and some of these urban residents visit these sites and this produces exchanges. While these initiatives vitalize the communities of regional residents, they also make it possible to loosely accept SONMIN or immigrants without creating a sudden change in the living environment due to external forces. The visitors who share the awareness of being a SONMIN are different from normal tourists, and they create favorable relationships with the regional residents because they strongly oriented towards the region. The flow of people to and from depopulated villages is returning, but there is little risk that it will cause a deterioration of the public order.

Moreover, the regional residents also have an understanding of share villages, and they are gradually being accepted into the local community. As a result, there are local efforts being made to accept them as private residence temporarily taking lodgers. These sorts of exchanges confirmed that there are relaxed exchanges starting between urban and regional residents. In the end, one goal is for SONMIN who come to like the land that they visited to actually move there, but Takeda is not actively encouraging the SONMIN to do this. This is being completely left to the independence of the SONMIN, and bridging only occurs when there is a strong desire. In this project, four families moved to Akita prefecture. This was through the program where an instructor works with an individual to execute a moving plan, and the number of applicants is gradually increasing. This was the moment that human resources moved from the virtual community to the real community. All of these cases were instances when the SONMIN had a skill that made them self-reliant, and it has been supposed that currently the barriers to doing this are quite high. Takeda's idea of a shared village has the characteristic of not requiring excessive blending with the regional community and entrusting at this point the independent judgment of each of the SONMIN. It differs from traditional regional vitalization insofar as it is not completed through a specific region being vitalized and it is not tied to any region. The population of urban residents participated because they sympathized with the general idea of a share village and the project to revive old Japanese-style houses. They did not have an emotional attachment to a specific region, and these projects are growing quite well. Recently, the scope has expanded to a 5th village, and the current goal is to reach 20,000 SONMIN.

4. Result and Discussion

This case tested the hypothesis that an attempt to revive regional communities could be made by using IT to bridge the communities of urban and regional residents who are physically separated and would not traditionally have exchanges with one another. In this case, the spatial and temporal constraints were transcended by using tools like SNS or crowd funding that are a reflection of the Internet age, and it was possible to use the resources of urban residents for the regional vitalization of regional residents. It proved that it was possible for these communities to complement each other. The characteristics of this case contributed to the region and reviving the local community by increasing the population exchanges [21]. Since the share villages have been started, they have been brought up in a variety of media, and this has increased the observation of these sites by other municipalities. Additionally, progress is being made on planting rice and making local sake as plans by the SONMIN to utilize un-planted fields. Utilization of incubation centers that cultivate local industry and collaboration with local businesses has also started [22]. These activities invigorated the communities of regional and urban residents, but currently, a bit more time is needed to acknowledge this as revival.

The idea of shared villages recruited sympathizers by adopting the theme of preserving Japan's original landscape for the next hundred years and preserving old Japanese-style houses. This was very significant because it was an opportunity for urban residents to focus on external problems. At present, the impact on the local communities where the share villages were started is limited with the exception of preserving old Japanese-style houses. As human

exchanges become more active going forward, smooth communication will take place between the share village SONMIN and the regional residents. Additionally, there should be a careful discussion of how to deal with the various issues that will accompany the increased scale of the visiting SONMIN like having an accepting attitude in the region, garbage problems, and an impact on the living environment. While there are advantages and disadvantages to any type of impact that the resources of urban residents have on local communities, the relationship between rural and urban areas has a different role from the supply of labor for the long period of strong economic growth that existed in the 60s. Thus, it should be noted that the role of local communities is changing to provide space for relaxation in the modern stressful society. It has been proven that by actively utilizing social capital both urban and regional residents who are in a situation where they need each other can actually achieve trust and reciprocity and regional vitalization based on a social network. Also, the possibility of reviving local communities was demonstrated, and the effectiveness of social media like SNS and crowd funding was verified. It seems that this case presented one method for designing local communities.

5. Conclusion

This paper examined cases based on the hypothesis that using a regional vitalization technique that employs social media will create better relationships for the communities of both regional and urban residents whereby both groups help each other. The hypothesis assumes that it will do so by bridging the abundant regional resources of hometown areas and the human and material resources possessed by urban residents. Additionally, the results indicated that IT skills and the human and material resources that urban residents possess could potentially develop into innovations that create new social capital by influencing old communities of regional residents. The revival of local communities is an important factor that affects the future of all of Japan, and it became clear that the use of IT or social media has made it possible to handle problems with regional vitalization that are difficult to tackle by regional residents alone. Additionally, using the new technique of crowdfunding for the new trails to provide value to sharing the time and space of local communities and connecting the SONMIN in this scenario is a completely different approach from the development of tourist attractions through traditional regional branding or the economic results due to sales that accompany such attractions.

This approach was able to present the possibility of sympathy based bridging to urban residents who did not have an interest in external problems like the depopulation of regional cities or the maintenance of old Japanese-style houses that pass on original Japanese culture. Cooperation with external resources occurred and social capital was generated by bridging the communities of urban residents and regional residents through the use of social media. The present author believes that this will be connected to the supplementation of human capital and material resources that regions are lacking. Resultantly, there is a strong possibility that these efforts will promote the mutual revival of local communities. The initiatives for regional vitalization seen in this case have a universality that is not restricted to a specific area, and the possibility that they could become a "new design for local communities" that could be applied nation-wide has been presented. A future research task that should be tackled is answering the question of how the generation of social capital that will accompany the increased scope of these initiatives, assuming they are continued and matured, will have on the state of social networks and both regional and urban residents going forward.

References

- [1] T. Van Dat, "Exploring the Relationships Among Social Benefits, Online Social Network Dependency, Satisfaction, and Youth's Habit Formation," *Int. J. Cyber Soc. Educ.*, vol. 8, no. 2, pp. 99–114, 2015, doi: 10.7903/ijecs.1416.
- [2] O. Kwon and Y. Wen, "An empirical study of the factors affecting social network service use," *Comput. Human Behav.*, vol. 26, no. 2, pp. 254–263, 2010, doi: 10.1016/j.chb.2009.04.011.
- [3] B. Carminati, E. Ferrari, R. Heatherly, M. Kantarcioglu, and B. Thurainsingham, "A semantic web based framework for social network access control," *Proc. ACM Symp. Access Control Model. Technol. SACMAT*, pp. 177–186, 2009, doi: 10.1145/1542207.1542237.

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- [4] K. Chen, G. Liu, H. Shen, and F. Qi, "SocialLink: Utilizing social network and transaction links for effective trust management in P2P file sharing systems," 2015 IEEE Int. Conf. Peer-to-Peer Comput. P2P 2015, 2015, doi: 10.1109/P2P.2015.7328527.
- [5] A. A. Salama, H. A. El-Ghareeb, A. M. Manie, and M. M. Lotfy, "Utilizing Neutrosophic Set in Social Network Analysis e-Learning Systems," *Int. J. Inf. Sci. Intell. Syst.*, vol. 3, no. 4, pp. 61–72, 2014.
- [6] M. Haghshenas, "A Model for Utilizing Social Softwares in Learning Management System of E-Learning," *Q. J. Iran. Distance Educ.*, vol. 1, no. 4, pp. 25–38, 2019.
- [7] V. Barker, "Older adolescents' motivations for social network site use: The influence of gender, group identity, and collective self-esteem," *Cyberpsychology Behav.*, vol. 12, no. 2, pp. 209–213, 2009, doi: 10.1089/cpb.2008.0228.
- [8] J. Magnusson, "Social Network Analysis Utilizing Big Data Technology," 2012, [Online]. Available: <http://uu.diva-portal.org/smash/record.jsf?pid=diva2:509757&dswid=-6359>.
- [9] K. S. Kim and B. H. Yim, "Utilizing social network analysis in social sciences in sport," *Asia Pacific J. Sport Soc. Sci.*, vol. 6, no. 2, pp. 177–196, 2017, doi: 10.1080/21640599.2016.1271534.
- [10] J. P. Hatala and P. R. Fleming, "Making transfer climate visible: Utilizing social network analysis to facilitate the transfer of training," *Hum. Resour. Dev. Rev.*, vol. 6, no. 1, pp. 33–63, 2007, doi: 10.1177/1534484306297116.
- [11] J. Gatewood and C. Price, "Utilizing Social Network Analysis to Study Communities of Women in Conflict Zones," *J. Humanist. Math.*, vol. 7, no. 1, pp. 3–21, 2017, doi: 10.5642/jhummath.201701.03.
- [12] M. A. Stefanone, D. Lackaff, and D. Rosen, "The relationship between traditional mass media and 'social media': Reality television as a model for social network site behavior," *J. Broadcast. Electron. Media*, vol. 54, no. 3, pp. 508–525, 2010, doi: 10.1080/08838151.2010.498851.
- [13] T. S. Gruca and G. J. Russell, "A New Bass Model Utilizing Social Network Data Tae-Hyung Pyo School of Business," no. May, 2017.
- [14] H. Sharara, C. Westphal, S. Radosavac, and U. C. Kozat, "Utilizing social influence in content distribution networks," *IEEE Int. Conf. Commun.*, 2011, doi: 10.1109/icc.2011.5963382.
- [15] C. W. Scherer and H. Cho, "A social network contagion theory of risk perception," *Risk Anal.*, vol. 23, no. 2, pp. 261–267, 2003, doi: 10.1111/1539-6924.00306.
- [16] Nasirifard, Peyman, Peristeras, Vassilios, and Hayes, Conor, "Extracting and Utilizing Social Networks from Log Files of nShared Workspaces: Ecospace Project Case Study," pp. 643–650, 2009.
- [17] M. Jamali and H. Abolhassani, "Different aspects of social network analysis," *Proc. - 2006 IEEE/WIC/ACM Int. Conf. Web Intell. (WI 2006 Main Conf. Proceedings)*, WI'06, pp. 66–72, 2006, doi: 10.1109/WI.2006.61.
- [18] J. He and W. W. Chu, "A Social Network-Based Recommender System (SNRS)," pp. 47–74, 2010, doi: 10.1007/978-1-4419-6287-4_4.
- [19] E. Lacic, D. Kowald, L. Eberhard, C. Trattner, D. Parra, and L. B. Marinho, "Utilizing online social network and location-based data to recommend products and categories in online marketplaces," *Lect. Notes Comput. Sci. (including Subser. Lect. Notes Artif. Intell. Lect. Notes Bioinformatics)*, vol. 8940, pp. 96–116, 2015, doi: 10.1007/978-3-319-14723-9_6.
- [20] K. Konthong and W. Poopanee, "Utilizing Social Network for Corporate Social Responsibility Reporting: a Technology Acceptance Framework," *Rev. Bus. Res.*, vol. 12, no. 4, pp. 113–121, 2012, doi: 10.13140/RG.2.2.17206.45128.
- [21] T. Hariguna and V. Rachmawati, "Community Opinion Sentiment Analysis on Social Media Using Naive Bayes Algorithm Methods," *Int. J. Informatics Inf. Syst.*, vol. 2, no. 1, pp. 33–38, 2019.

- [22] Y.-M. Chen, "The Charisma of Online Group-Buying: The Moderating Role of Social Motivation," *IJIS Int. J. Informatics Inf. Syst.*, vol. 2, no. 3, pp. 99–101, 2019, doi: 10.47738/ijis.v2i1.86.