

Available online at www.sciencedirect.com**ScienceDirect**

Procedia Environmental Sciences 20 (2014) 543 – 552

Procedia
Environmental Sciences

4th International Conference on Sustainable Future for Human Security, SustaiN 2013

Social Capital and Migration in Rural Area Development

Gunawan Prayitno^{a,b*}, Kakuya Matsushima^a, Hayeong Jeong^a and Kiyoshi Kobayashi^a^a*Department of Urban Management, Graduate School of Engineering, Kyoto University, Japan*^b*Brawijaya University, Indonesia*

Abstract

Indonesia's rural regions are characterized by widespread poverty, underemployment, and surplus of low-skilled labor. Migration is common among rural inhabitants for survival, to pursue economic opportunities, and support household activities. The aim of this study is to investigate the relation between social capital and migration from rural areas in Indonesia. The definition of social capital is not derived from theories of networking, bonding and bridging ties, but from community psychology developed by Perkins and Long. A sense of community and a sense of place measure the relation between neighboring, participation in community activity and migration. Using data from 250 household respondents (with at least one migrant worker) in Arjowilangun village, Malang, Indonesia, this study constructs three factors through principal component analysis: *sense of community*, *sense of place*, and *neighboring*. This three factors plus some demographic attributes: income, education and type of migrant, are used as explanatory variables for modeling the relation between social capital and migration using structural equation modeling (SEM). Our results suggest that a sense of place and a sense of community and some demographic attributes significantly influence the duration of work of migrant workers. We concur with hypothesis two, that is, households with higher social capital affordable to send family members as migrant labor.

© 2014 The Authors. Published by Elsevier B.V. Open access under [CC BY-NC-ND license](https://creativecommons.org/licenses/by-nc-nd/4.0/).

Selection and peer-review under responsibility of the SustaiN conference committee and supported by Kyoto University; (RISH), (OPIR), (GCOE-ARS) and (GSS) as co-hosts

Keywords: Migration, sense of community, sense of place, social capital, and structural equation model

* Corresponding author

E-mail address: gunawan_uin93@yahoo.com

1. Introduction

Underemployment and surplus of low-skilled labor are two major characteristics of a rural area in Indonesia. Therefore, rural households use migration strategies and allocate labor resources for increasing their income and to reducing the risks. Migration is commonly used by rural inhabitants to ensure survival, pursue economic activity, and support household living. Migration has always been positively viewed in terms of the visible monetary gains generated for the origin country. However, in assessing the benefits of migration, the issue of the invisible, non-monetary social cost remain largely unrecognized as part of the inevitable “cost” migrants have to pay in exchange for the prospect of a better life for their families. One of the impacts of migration is on the reduction in the number of labor available in the village [1].

Migration happens due to many factors. Aside of economic considerations, research over the past two decades shows the centrality of social networks to the process of migration. As social beings, humans are inevitably enmeshed in interpersonal webs of strong ties to close friends and relatives and weak ties to more distant relatives, casual acquaintances, and friends of friends. By drawing on the social ties, an individual can mobilize the social capital embedded within it to gain valuable information, moral support, and material assistance that may reduce, often quite substantially, the costs and risks of migration. As a result, people with migrant friends and relatives display a much higher likelihood of emigration compared to those who do not have any; stronger the social connection, more and better the person’s migratory experience, the higher are the odds of eventual out-migration [2].

People gain access to social capital through membership in interpersonal networks and social ties and then convert them into other forms of capital to improve or maintain their position in society [3,4]. Portes and Sensenbrenner [5] point out that social capital may have negative as well as positive consequences; theorists generally emphasize the positive role it plays in the acquisition and accumulation of other forms of capital, an emphasis that has been particularly strong in migration research.

Our first hypothesis is that communities and households with higher social capital can afford without migration workers even though they have comparatively lower income. Research on this topic is rare; one of the studies that relates to migration and social capital is of Morrison. Morrison on Land [6] found that the probability of an individual migrating diminishes as his “duration status” or “cumulated length” increases. In line with our research Jeong [7] found that age (duration of stay) in the community over the years affected the involvement and strong sense of solidarity with the environment and neighbors.

The second hypothesis is that communities and households with higher social capital are affordable to send their family members as migrant workers. This is in line with some research on social capital and migration where it is found that social ties among community members and trusts exacerbate migration. Our earlier finding [8] indicates that households with higher social capital tend to send migrant workers abroad even when they do not have higher income. Migrants maintain strong ties with their families and return periodically to their home areas [9]. Excepting for a strong relationship to the family, the prospective migrants have a strong relationship with prior migrants. So, migration is often slow at the beginning, but increases rapidly once it has begun [10]. Palloni [11] explains about the relation of migration and family network where the family with higher level of social capital (network ties) among siblings tends to send the members of family as migrant workers. We want to proof, between hypothesis one and two, which is suitable for this research.

Our aim in this study is to investigate the relation between social capital and migration in rural areas. In detail, Section 2 review the basic concept on social capital, sense of community, sense of place and neighboring. Section 3 presents the results of basic analysis on the characteristics of households, characteristics of migrant workers, sense of place, sense of community and community activities in Arjowilangun village. Section 4 discusses the measurement of social capital, and Section 5 the validity of covariance structure model for this research.

2. Literature Review

Bourdieu [3], who first analyzed social capital systematically, defined it as “the aggregate of the actual or potential resources which are linked to the possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition.” Coleman [4] later described social capital as a resource for

action “embodied in relations among persons,” which emerges from closure in the social structure and is convertible to other forms of capital. Social capital such as trust, norms, and networks improves the efficiency of society by facilitating coordination action [3, 4]. Social capital improves participants’ monitoring, reduces free-riders, thus mutual bonds of trust. Communities with high levels of social capital are more effective at exercising social control over deviant and uncivil behaviors [12, 13].

Several studies identify the relationship between migration and theory of social capital. Migrant networks (one component of social capital) are sets of interpersonal ties that connect migrants, former migrants, and non migrants to one another through relations of kinship, friendship, and shared community origin. Palloni et al. [11] show the relation of international migration and social capital using information of family networks. They found that families that have an older sibling migrating triple the likelihood of migration. The diffuse social capital distributed among community and household members strongly influences the likelihood of out-migration. Garip [12] says that migrant social capital (resource of information or assistance) generates migration from rural areas in Thailand. In line with Massey and Aysa [2], Garip found that stronger the social connection and the more and better the person’s migratory experience, the higher are the odds of eventual out-migration.

The above literature shows the relation between social capital and migration as norms, networks, and mutual trust of “civil society”. But the relation between social capitals as sense of community has not been much explored. Firstly, in this study, we use the concepts thoroughly studied by community psychologists as a part of social capital (Table 1) such as sense of community, collective efficacy/empowerment, citizen participation, and neighboring base on the research of Perkins and Long [14]. In this study, we use the definition of sense of community proposed by McMillan, “a feeling that members have of belonging and being important to each other, and a shared faith that members’ needs will be met by the commitment to be together” [13]. Secondly, there are many cases from developed countries, Africa and Latin America and are rare from South-East Asia. This explains our motivation to study the relation of social capital and migration in the case of a less-developed country.

Table 1. Four dimensions of social capital.

	Cognition/Trust	Social Behaviour
Informal	Sense of community	Neighboring
Formally Organised	Collective efficacy/ Empowerment	Participation

Source: Perkins and Long [1]

The link between participation and sense of community has been found at both the individual and community level of analysis [15]. It makes sense that a group of residents must have at least some sense of community to be interested in organizing and working together to solve common problems. Sense of community consists of social connections, mutual concern and community values. Besides four components of sense of community, *place attachment* or *sense of place* is an important construct in its relationship to sense of community and social capital, but one that is often overlooked by community psychologists. It refers to emotional bonding, developed over time from behavioral, affective, and cognitive ties to a particular socio-physical environment [16]. These bonds are integral to individual and community aspects of self-identity and provide a source of stability and change for individuals and communities alike. The higher the feeling of place the higher will be the increase in the sense of community and the more they want to interact among themselves (neighboring). In general, residents who socially interact with their neighbors are more likely to be aware of local voluntary organizations and become members [17]. In this study, we measure the level of social capital using the concept of sense of community. We assume that a sense of place will have an impact on the sense of community and will have some relation to neighboring or empowerment and participation in community activities. Related to our hypotheses we assume some relation between this construct of social capital and migration.

3. Survey Design and Implementation

3.1. Survey Method

There are no rules for sample size in qualitative inquiry [18]. Israel [19] provides a table of recommended

sample sizes for +7% precision level where confidence level is 95% and $P = .5$. According to the table, and for purposes of this study, the researcher used an estimated population size $N = 3470$ (between 3000 and 4000) and thus a sample size goal of $n = 194$. We added 56 respondents to seek a large number numbers of participants so the total respondents are 250. Patten [20] suggests that a researcher should first consider obtaining an unbiased sample and then seek a relatively large number of participants.

Face-to-face interviews have been conducted effectively within seven days by 10 surveyors. Interviews were scheduled between 07:00 a.m. and 09:00 p.m. depending on the respondent's convenience. Through systematic sampling, the target for the respondent survey was 250 households living at Arjowilangun village, which is inhabited by 3.470 households.

We preferred interviews directly with the migrant worker; the second option is where the migrant worker was not accessible at the time of the interview, a representative of the family (husband, wife, mother, father, grandfather, grandmother, children, brother or sister) can substitute him/her depending upon their willingness.

3.2. List of Questions

The main research aims cover four items as follows:

- To explore the demographic attributes and the characteristics of migrant workers;
- To investigate the sense of place;
- To investigate the sense of community (sense of community, neighboring or informal neighbor behavior, empowerment and citizen participation), and
- To investigate the relation between the level of social capital and migration.

3.3. General Description of Research Area

In general, the total area of Arjowilangun village covers 1,598.01 Ha, whereby the land use is dominated by: (i) paddy and dry field (80.09% or 1,279.95 Ha), (ii) government plantation and forest (4.69% or 75.02 Ha), open space (1.50% or 23.98 Ha); and (iii) residential (13.70% or 219.07 Ha). This village lies at 293 m above sea level, at a distance of 22.5 km to the capital city (Malang Regency) and about 6 km to the district centre (Kalipare district).

3.4. Demographic Attributes

The respondents of this study are households that have one or more migrant workers. The questions were designed into two types, for household and migrant worker. Households were asked questions about income, and years lived in the village. Migrant respondents were asked about their income (before and after migrate), sex, age, education, type of migration and duration of work.

In the questionnaire survey, the respondents were asked to reveal their household monthly income, divided into seven categories. The minimum wage in Malang Regency (UMR), as decided by the government in 2013, is IDR 1,343,700 or JPY 13,437. The income of 34 respondents or of 13.6% of the population of the village is below the regional minimum wages or UMR (*upah minimum regional*), that of 68 respondents or 27.2% is in the range of regional minimum wages, and 148 respondents or 59.2% had income above the regional minimum wages (Figure 1 a).

There are more female respondents (142 or 56.8%) than male respondents (108 or 43.26%) (Figure 1b). In migration, among the female, 127 were international workers, 15 local workers, and among the male, 69 and 39 were international and local workers, respectively. Here, we propose a dummy variable to type of migrant, international migrant as 1 and 0 otherwise. The critical values of type of migrant level of respondent show χ^2 ($df = 1, N = 250$) = 82.944 at $p < 0.000$.

The four groups of education levels of the representative households are: (i) elementary school, (ii) junior school, (iii) high school, and (iv) university level. The elementary school has six years of education, whereas junior and high schools have three years. According to data, the average schooling of adults in Indonesia is 5 years. The largest number of respondents had high-school-level education (110 respondents or 44%) (Figure 1c). Those with

junior high-school-level education had 90 respondents or constituted 36% of population; those with elementary school education or even lower constituted 19.6% or 18.6%, and at the level of university just one respondent (0.4%). This study suggests that respondents in the study area have higher level of education than the national average. In other words, it means that the education level in the village is more than the average years of schooling in Indonesia. We propose a dummy variable for respondents with a level of education lower or equal to elementary school as 0 and 1 otherwise. The critical value of education level of respondent shows χ^2 ($df = 1$, $N = 250$) = 92,416 at $p < 0.000$.

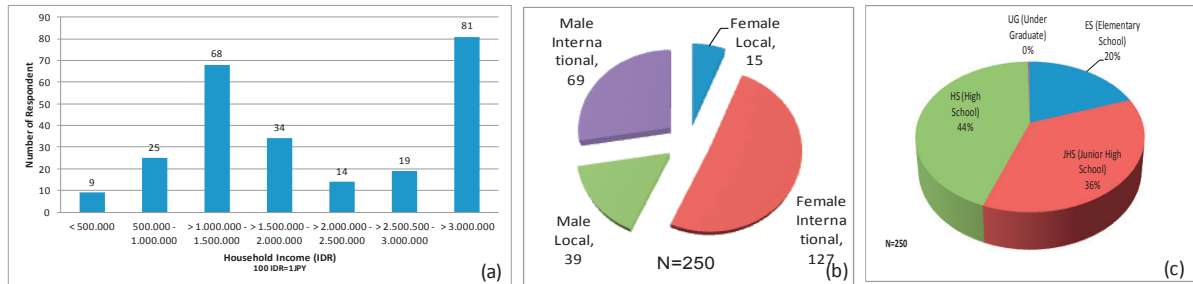


Figure 1. Household Income (a), gender and type of migration (b), and education background of respondents (c).

In duration of work, 102 respondents or 40.8% of migrant workers worked for more than four years. It means that these respondents have renewed their contract after the completion of the first contract (two-year contract). In general, the international migrant workers have two-year contracts and are renewed again. The next category is two-four-year contracts constituting 45 respondents (18%); it means that after completing a two-year contract they return back to their village, the next is for a duration of contract more than or equal to three years and less than four years (44 respondents or 17.6%). The smallest is the contract duration of less than one year (24 respondents or 9.6%). We propose a dummy variable for respondent with a duration of more than or equal to 4 years as 1, and 0 otherwise. The critical values of the level of contract show χ^2 ($df = 1$, $N = 250$) = 8.464 at $p = 0.004$.

4. Measuring Social Capital

There are a number of dimensions to social capital and to measure its level. Standardization in measuring social capital is still far away [21]. There has been an abundance of ad-hoc measures, often derived from data not specifically designed to measure it but that happened to be available readily for analysis. This has made a thorough and specific testing of social capital theory difficult for structural comparison.

Latent variables were used to define the concept social capital. We have designed some questions in the questionnaire survey to measure the use of four components of sense of community (SOC). They are: (1) sense of community; (2) empowerment; (3) neighboring behavior; and (4) participation in community activities.

We sought response on sense of place, sense of community, neighboring and collective efficacy or empowerment about values and beliefs of respondents (12 questions) and participation in community activities using 13 questions.

4.1. Principal Component Analysis

To construct uncorrelated factors of social capital a principal component analysis with varimax rotation was performed. PCA is a method of data reduction wherein the process it groups correlated variables into uncorrelated variable factors [22].

We use PCA in four-factor restriction (Table 2). Factor 1 is related to variables Y6, Y7, Y8 and Y9, Factor 2 to Y1, Y2 and Y12, Factor 3 to variables Y10 and Y11 and Factor 4 consists of variables Y3, Y4 and Y5. The first factor accounts for 62.4% of variance. Variables loaded on this factor mostly refer to “sense of community”. The second factor accounts for 10% of variance and describes relation to place, being a symbol of “sense of place”. The

third factor accounting for 6.2% of variance refers to “neighboring”, and the last, the fourth factor, accounts for 4.1% of variance as “collective efficacy/empowerment”.

Table 2. Rotated Factors Loadings.

Variables	Factors Loading			
	Factor 1	Factor 2	Factor 3	Factor 4
Y1. Place attachment to your village as your hometown	0.325	0.806	0.175	0.252
Y2. Nature and landscape of your village are nice	0.374	0.757	0.187	0.205
Y3. Foodstuff of your village is nice	0.334	0.419	0.117	0.671
Y4. Important to involve in community events activities	0.566	0.392	0.084	0.573
Y5. Important to consult people who are in trouble	0.356	0.220	0.388	0.696
Y6. Important to keep daily communication with neighbours	0.767	0.301	0.252	0.339
Y7. Important to respect ancestors and manage community grave	0.789	0.327	0.245	0.288
Y8. Important to communicate with relatives living in the village	0.775	0.371	0.249	0.231
Y9. Neighbours are very important for me	0.806	0.305	0.209	0.223
Y10. Neighbours will take care of my children and my parent when I am going abroad	0.199	0.189	0.876	0.056
Y11. Neighbours will help me and my family when we have some economic trouble	0.223	0.100	0.852	0.245
Y12. Want to continue living in this village	0.269	0.824	0.116	0.225
Eigen value	7.490	1.202	0.745	0.498
Contribution ratio (%)	62.4	10.0	6.212	4.150
Cumulative contribution ratio (%)	62.41	72.43	78.64	82.79

4.2. Participation on Community Activities

In this study, we have measured the activities of the respondents in the community by using their response to the question “did you participate or not in the community activity?” and the answers could be “yes” or “no”. If the respondents answered “no” it means that they did not participate in the community activity, and if “yes” it means they have participated.

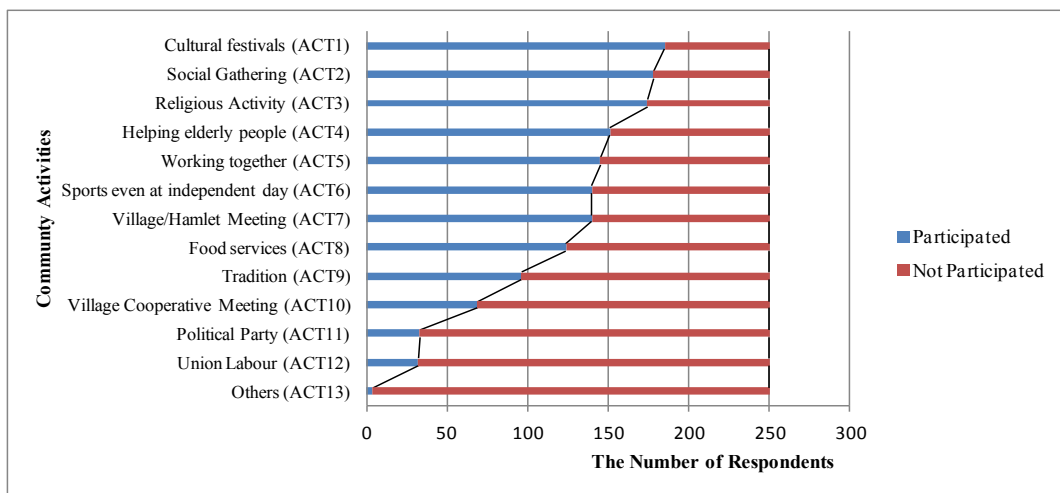


Figure 2. Participation in the community activities

Based on the interview, it can be seen that most of the respondents answered “yes” (Figure 2). For example, cultural festivals like “Bersih Desa” a once-a-year festival attracts many respondents who participate in it along with their kith and kin (185 respondents). The question related to “other activity” did not have much positive response. Among the respondents, 246 responded negatively and only four responded positively, meaning that only four people participated in community activities.

5. The Model

Based on the results from the survey and discussion in Chapter 2, we have observed variables as demographic attributes, characteristic of migrant, values and belief towards village and community participation and identified latent variables in this study as sense of place, sense of community, neighboring behavior, and empowerment.

This study proposes more than one latent variable (i.e., sense of community, sense of place, neighboring and empowerment) that explains the causal relationship among observed variables based on structural equation and applying structural equation model (SEM). The level of social capital interprets from the relationship between sense of place, sense of community and neighboring. We have used the observed variable duration of works to measure the relationship between social capital and migration.

5.1. Estimation of Model

This study configures the path, relationship between latent variables and observed variables based on principal component analysis. First, before conducting principal component analysis on values of sense of community (Y), we have performed proximity interpretation of each variable. For interpretation, it may be possible to classify Y into three groups as follows: Y1, Y2 and Y12 focus on “sense of place”, Y6, Y7, Y8, Y9 as “sense of community” and Y10, Y11 focus on “neighboring”.

Next, we conduct an SEM analysis on the correlation between independent variables and to understand the indirect effects. SEM is multivariate regression in which the response variable in the regression equation may become predictor in another equation. These allow us to account for correlation and distinguish direct and indirect effects of our exogenous and latent variables on sense of community. For estimation we use the general least square (GLS) method. In general, this method is preferable to Maximum Likelihood (ML) estimation when the data is severely normally distributed and includes ordinal data [23].

We use the factors constructed by the above PCA analysis as a basis for determining exogenous latent variables for SEM analysis. We have investigated several model structures and find that the model presented in Figure 3 provides the best model fit. The model fit can be considered “good” in terms of goodness of fit (CMIN/DF = 1.557, GFI = 0.901, AGFI = 0.869 and RMSE 0.047).

Figure 5 shows the model structure which we finally obtained. Through this analysis, we find out the structure among latent variables that could be explained to define the concept of social capital. There are significant paths to sense of place from type of migrant, significant paths to sense of community from education and significant paths to neighboring from the income of respondents. The duration of work is treated as observed, endogenous variable since we assume that it might be influenced by sense of place, sense of community or neighboring. From the results of analysis, we believe that only the duration of work has significant impact from sense of community. It means that the household with higher sense of community tend to affordable to send longer period of migration.

We find that education directly affects the sense of community with regression weight of 0.203 (Table 3), if the respondent has higher education, on average he has 20,3 % higher sense of community (for example, more communication with neighbors). From the latent variable, a sense of place significantly influences sense of community with positive regression value of 0.870. This is in line with the study of Perkins and Long [1], Li, [21], Preeza et al. [24] and Perkins et al. [16], which has found the impact of sense of place on sense of community.

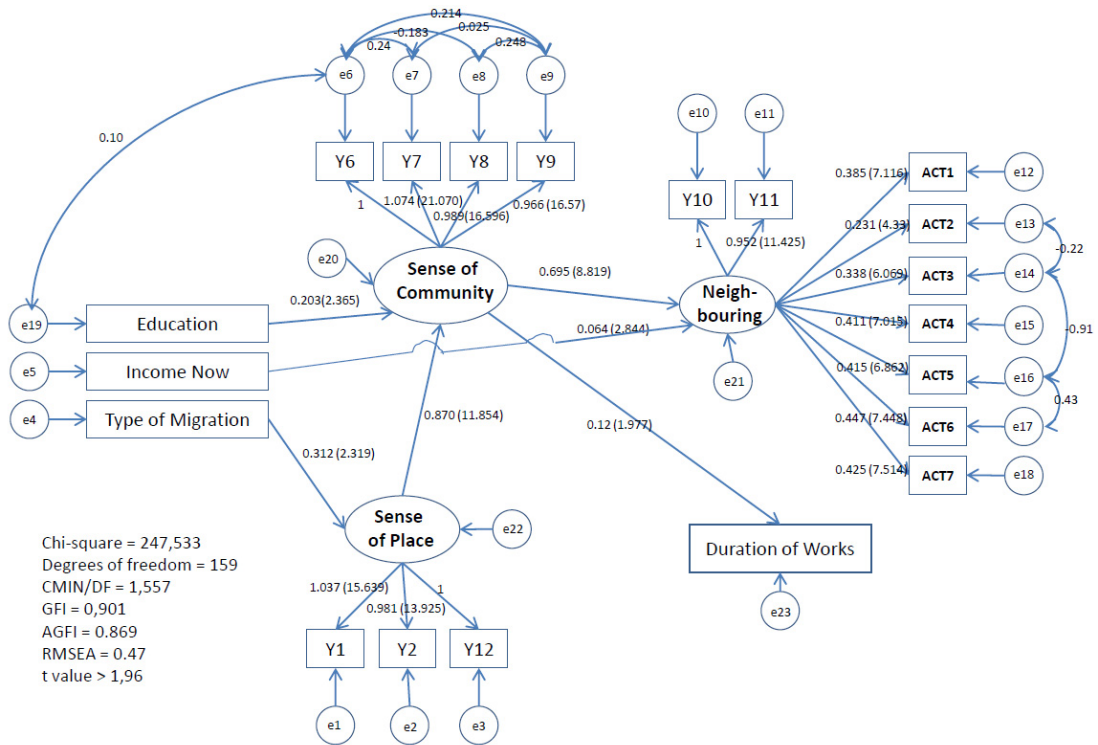


Figure 3. The Model

Figure 3 and Table 3 show that the respondents who have higher sense of community have significant impact on neighboring and have impact on the duration of work. The estimated value from sense of community to duration of work is 0.12. and the t value (C.R) is more 1,96. It means that if the sense of community is higher, then it will have a significant effect to be affordable to send a longer period of migration.

Table 3. SEM Model Estimation, in brackets standardized effects

Latent Constructs	Path		Estimate	C.R.	P
Sense of Place	<---	Type of Migration	0.312 (0.170)	2.319	0.02
Sense of Community	<---	Sense of place	0.870 (0.840)	11.854	***
Sense of Community	<---	Education	0.2023 (0.107)	2.365	0.018
Neighbouring	<---	Sense of community	0.695 (0.742)	8.819	***
Neighbouring	<---	Income now	0.064 (0.166)	2.884	0.004
Duration of Work	<---	Sense of community	0.12 (0.145)	1.977	0.048

In this paper, we have proposed two hypotheses, (i) communities and households with higher social capital can afford without migration workers even though they have comparatively lower income; and (ii) communities and households with higher social capital are afford to send their family members as migrant workers.

By observing this result, we have confirmed our second hypothesis that households with higher social capital are affordable to send a longer period their family members as migrant workers.

6. Conclusion

In this paper, we measure the relationship between social capital and migration in rural area development. We use the concept of sense of community and sense of place to measure the relationship of social capital and migration. The aim of this study is to investigate the relationship between social capital and migration. The analysis is based on a survey of community activities in Arjowilangun village which is typical of migrant rural area in Indonesia. To find response to the question, *does the level of social capital in the community have an impact on the number of migrating*, Section 2 first describes the concept of social capital and analyses it based on previous studies on sense of place and sense of community. Here we find the possibility of forming social capital from the concept of sense of community which consists of sense of community, neighboring, empowerment and participation on community activities. In Section 3, we present the characteristics of household income and migrant characteristics (type of migration and education). The household income, type of migration and education may have effect to latent variables that we have proposed. Section 4 examines the component to measure social capital. Principal component analysis was used to define the variable for each factor of latent variables. We have explained the respondent participation on the community activities and in Section 5 we present the covariance structure analysis to understand the relationship between latent variables and observe variables. From the structure of the model, we could estimate the relation between social capital and migration.

Our study shows that sense of community positively has a significant impact between neighboring and the duration of work. We have confirmed our second hypothesis that households with higher social capital are affordable to send a longer period their family members as migrant workers. Our current model so far could explain the relation between social capital and migration, but we need to do the next the research to calculate the social cost of migration and what the policy implication is.

Acknowledgements

I gratefully acknowledge the support received from the Directorate General of Indonesian Higher Education, Department of National Education, Indonesia. The sponsoring institution of the author, the University of Brawijaya Malang, has permitted to pursue a doctoral degree at Kyoto University, Japan. I thank HSE-GCOE Program of Kyoto University that has given me an opportunity to do my internship there and conduct survey in Indonesia.

References

1. Prayitno, G., Nugraha, A.A., Sari N., Balqis Y.P.U. K., The Impact of International Migrant Workers on Rural Labour Availability (Case study Ganjaran Village, Malang Regency). *Procedia Environmental Sciences-Elsevier*. 2013; **17**: 992–998.
2. Massey, D. S., and M. Aysa-Lastra. Social Capital and International Migration from Latin America. *International Journal of Population Research*, **2011**, Article ID 834145. *Proc. of the National Academy of Sciences*. 2011; **5328**-35.
3. Bourdieu, Pierre. "The Forms of Capital." Pp. 241–58 in *Handbook of Theory and Research for the Sociology of Education*, edited by John G. Richardson. New York: Greenwood Press. 1986.
4. Coleman, James S. 'Norms as Social Capital', in Gerard Radnitzky and Peter Bernholz (eds), *Economic Imperialism: The Economic Approach Applied Outside the Field of Economics*, New York: Paragon House Publisher. 1988; 133-55.
5. Portes, Alejandro, and Julia Sensenbrenner. "Embeddedness and Immigration: Notes on the Social Determinants of Economic Action." *American Journal of Sociology*. 1993; **98**:1320–51.
6. Land, Kenneth C. Duration of Residence and Prospective Migration: Further Evidence. *Demography*. 1969; **6**(2).
7. Jeong, H., Matsushima K. and K. Kobayashi. Identity and Communication in Marginal Rural Area—Case Study of Nichinan Town in Japan, *Journal of Society of Civil Engineers*, Ser.D3, **68** No.5. 2012. p.I_499-I_511 (in English).
8. Prayitno, G., Matsushima K., Kobayashi K., Jeong H. Social Capital and Migration in Rural Area (A Case of Malang Regency, Indonesia). The 10th Workshop on Social Capital and Development Trends in the Swedish and Japanese Countryside in Amakusa. Japan. 2013.
9. Lu, Yao. "Rural–urban Migration and Health: Evidence from Longitudinal Data in Indonesia." *Social Science and Medicine*. . 2010; **70**(3): 412-419.
10. Dijk, Frans Van. *Social Ties and Economic Performance*. Kluwer Academic Publishing. 1997.
11. Palloni, Alberto., Douglas S. Massey, Miguel Ceballos, Kristin Espinosa, and Michael Spittel. Social Capital and International Migration: A Test Using Information on Family Networks. *American Journal of Sociology*. March 2001; **106**(5): 1262-1298.
12. Garip, F. Discovering Diverse Mechanisms of Migration: The Mexico–U.S. Stream from 1970 to 2000, Department of Sociology, Harvard University. 2012.

13. McMillan, D. W., & Chavis, D. M. Sense of community: A definition and theory. *Journal of Community Psychology*, **14**. 1986.p. 6-23.
14. Perkins, D.D., & Long, D.A. Neighborhood Sense of Community and Social Capital: A multi-level analysis. In A. Fisher, C. Sonn, & B. Bishop (Eds.), *Psychological sense of community: Research, applications, and implications*. New York: Plenum. 2002. p. 291-318
15. Perkins, D. D., Brown, B. B., and Taylor, R. B. The ecology of empowerment: Predicting participation in community organizations. *Journal of Social Issues*, **52**. 1996. p. 85-110.
16. Brown, B. B., & Perkins, D. D. Disruptions in place attachment. In I. Altman & S. Low (Eds.), *Place attachment* **12**. New York: Plenum. 1992. p. 279–304
17. Chavis, David M. and Abraham Wandersman. Sense of Community in the Urban Environment: A Catalyst for Participation and Community Development. *American Journal of Community Psychology*, **18**, No.1. 1990.
18. Patton, M. *Qualitative Evaluation and Research Methods*. Beverly Hills, CA: Sage. 1990. p. 169-186.
19. Israel, Glee D. Determining Sample Size. *Program Evaluation and Organizational Development*, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Publication date: November 1992.
20. Patten. Mildred L. *Understanding Research Methods: An Overview of the Essentials*. Pyrczak Publishing; 5 edition. May 2005.
21. Lin, N. *Social Capital: a Theory of Social Structure and Action*. Cambridge: Cambridge University Press. 2001.
22. Fabrigar, L.R., Wegener, D.T., MacCllum, R.C., and Strahan, E.J. Evaluating the use of exploratory factor analysis in psychological research. *Psychological Method* **4**. 1999. p. 272-299.
23. Schumacker, RE. and Lomax, R.G. *A Beginner's Guide to Structural Equation Modelling*. Third Edition. New York: Routledge, Taylor and Francis Group. 2010.
24. Prezza, M., Amici, M., Roberti, T., & Tedeschi, G. Sense of community referred to the whole town: Its relations with neighboring, loneliness, life satisfaction, and area of residence. *Journal of Community Psychology*. **29**. No. 1. 2001.