

DISCOVERING THE CONFIGURATIONS OF THE FACTORS AFFECTING COMMUNITY WELL-BEING IN KOREA USING QCA METHOD

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ABSTRACT

This study was conducted to ascertain what combinations of conditions are associated with community well-being, which is crucial for enhancing national well-being in every country, and to put forward policy suggestions whereby each local authority may raise the level of its community well-being. The community well-being score of 17 second-tier local authorities at provincial level in Korea was selected as an indicator of community well-being, and some independent variables such as per-capita GRDP and local financial autonomy were included in the analysis. The Qualitative Comparative Analysis (QCA) method was employed to analyze the complex causal relationships among the factors affecting community well-being. The research results show that there is one significant combination of variables affecting community well-being. They suggest that each local authority should endeavor to enhance its own community's well-being, considering how the different factors associated with this relate to each other.

Keywords: Community Well-Being, Qualitative Comparative Analysis (QCA)

INTRODUCTION

Many factors affecting well-being operate at community level, not at central level. For example, levels of employment, access to education, and quality of environment vary by community. Differences between communities within a country are as important as differences between countries (OECD, 2013). Recently, there has been a consensus that macro-economic statistics on well-being at national level do not reflect the genuine well-being of people and their aspirations. Accordingly, it is said that there is need for evidence enabling us to explain people's well-being in a variety of areas. From this point of view, in order for us to show the full picture of people's well-being, we need to explain how people think of the community in which they live, how they respond when the community does not meet their needs, and whether access to services influences people's choices of community to live in. In this regard, we can say that investigating community well-being can contribute toward discovering problems hidden behind well-being at national level. An overview of well-being at community level helps communities with low levels of well-being benchmark other communities with high levels of well-being within a country or in other countries. Furthermore, indicators of community well-being help policymakers and academics evaluate the extent to which community achievements and performances affect national prosperity and diverse social challenges. Understanding well-being in communities where people live and comprehending what factors determine levels of community well-being

matters to community policymaking and design at both central and local level, because policymakers can thereby identify which elements are poor in communities with low levels of well-being and what should be done to strengthen them.

Under this background, this research aims to identify which communities can be included in the category of those meeting the requirements for community well-being in Korea, to discover the combinations of conditions that affect those communities which have deficiencies in the area of community well-being, and to forward policy suggestions for policymakers in each community aimed at enhancing that community's well-being.

THEORETICAL DISCUSSION

The lexical meaning of well-being is 'a state of emotion reaching avid pleasure through satisfaction' (Kim et al., 2008). The concept of well-being has been defined differently at different times according to different philosophies and religious perspectives. Scholars argue that the factors affecting well-being are diverse, and that their effects and relationships differ. In determining a well-being index at national or individual level, economic factors have been considered important in the past. Recently, however, other factors, such as social or environmental factors, have been regarded as essential, indicating that perspectives on well-being and methods of measuring it vary according to period. In addition, in certain periods objective conditions have primarily been taken into account in measuring well-being, whereas at other times subjective conditions have been looked upon as essential. It is also true that many scholars have been conducting research work investigating precisely what well-being and a state of well-being mean (Choi and Moon, 2011).

The word 'well-being' has sometimes been used interchangeably with 'happiness', 'quality of life', 'subjective happiness', 'life satisfaction', and 'psychological happiness'. More specifically, the word has the following three characteristics. First, it has subjective aspects. Scholars argue that well-being exists within the scope of individual experience. This means that external conditions such as health, wealth, prestige, and physical comfort may affect well-being, but they do not include the intrinsic elements of it. Second, well-being reflects positive and optimistic aspects relating to life (Choi, 2008). Third, well-being includes an evaluation of the general aspects of individual life. Even though well-being seems to embrace specific aspects of life, its core value relates to an evaluation of general aspects of individual life.

A community can be defined as a small or large social unit (a group of people) who have something in common, such as norms, religion, values, or identity. Often - but not always - communities share a sense of place that is situated in a given geographical area (e.g. a country, village, town, or neighborhood). Durable relations that extend beyond immediate genealogical ties also define a sense of community. People tend to define those social ties as important to their identity, practice, and roles in social institutions like family, home, work, government, society, or humanity, at large. Although communities are usually small relative to personal social ties (micro-level "community" may also refer to large group affiliations (or macro-level), such as national communities, international communities, and virtual communities (Wikipedia; Kee et al., 2016). Here, we define community well-being as a state of condition reaching avid pleasure

through satisfaction at individual level as well as at community level, reflecting individual and collective interests together within community (Kee et al., 2016).

From an empirical point of view, some studies of community well-being and community development have been conducted to date. Most of these have focused primarily on people's satisfaction in diverse areas of their lives, but without considering the levels of disparity in their satisfaction. In other words, mean scores for satisfaction have been considered, but differences in satisfaction levels have not been. Something that has also not been considered is people's perceptions of their community, especially in terms of conditions affecting diverse areas of their lives. Most studies have focused on people's perceptions of their individual satisfaction levels, not on their perception of their communities themselves. This study, based on the definition of community well-being mentioned above, attempts to remedy these shortcomings, considering the differences among people's satisfaction with life-areas such as health and education as well as the mean scores for their satisfaction with different life-areas. It also includes an analysis of people's perceptions of their individual levels of satisfaction with specific life-areas, and of their satisfaction with their communities.

RESEARCH DESIGN

The analysis subjects of this research are the 17 regions in Korea. The sample consisted of 2,723 respondents living in Korea, collected by Young-hwa Kee and Seung-Jong Lee's SSK research team in 2015. The questionnaire consists of six dimensions of capital. These are: Human Capital; Economic Capital; Natural Capital; Infrastructural Capital; Cultural Capital; and Social Capital. Human Capital consists of three sub-dimensions (health, welfare, education), and includes nine questions (indicators). Economic Capital includes six questions, Natural Capital five questions, Infrastructural Capital six questions, and Social Capital eight questions. For the analysis, Qualitative Comparative Analysis (QCA) was employed. Qualitative Comparative Analysis (QCA) was used. QCA is a comparative technique (Vink and Van Vliet, 2009) that is used to explain large social events concisely by using a small number of cases (5-55). Although QCA does not provide statistical results for generalization, it is a useful method that categorizes cases by their characteristics in a simple manner (Luck et al., 2006; Poveda, 2013; Rihoux, 2006). QCA, developed by Ragin (1987), has not provoked much interest until now. The main purpose of this method is to provide meaningful and concise interpretations on the causal patterns of the cases that are examined. This method aims to find the various causal conditions or condition factors that can fundamentally affect the result. That is, it begins with the assumption that one outcome does not belong to a set of one variable, but can belong to a set of many variables (Wagner and Shneider, 2010; Rihoux, 2006). Other characteristics of this methodology are the use of set theory, Boolean algebra, its formation of a truth table, and a concise approach to research data (Donnelly and Wiechula, 2013). The QCA method is of three broad kinds: crisp set QCA (CSQCA), fuzzy set QCA (FSQCA), and multi-value QCA (MVQCA). This research will use CSQCA, since this method processes data by changing independent variables and dependent variables into 0 or 1 according to a certain threshold. It is more convenient to set a threshold and categorize the independent values that affect the well-being score of communities (here second tier regions) included in this research into 0 and 1. This research will use the CSQCA program and the TOSMANA program.

ANALYSIS

It is hypothesized that the best community in terms of community well-being is one in which people's satisfaction (mean score) in the six life-areas and with their community is high, and where differences (s.d.) in their levels of satisfaction with these life-areas and with their community are low. Table 1 shows the mean scores and s.d. (standard deviations) for people's satisfaction in the six life-areas at individual level by 17 communities (provinces), and overall scores. It shows that Chungbuk has the highest mean score (6.45) in terms of overall score, followed by Chungnam (6.25). In terms of s.d. (differences in people's satisfaction levels), Gyeongnam scores the lowest, implying that people living there feel they live together in similar ways and on an equal basis.

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Table 1
COMMUNITY WELL-BEING: PEOPLE'S SATISFACTION WITH LIFE-AREAS AT AN INDIVIDUAL LEVEL

Community (province)	Human		Economic		Natural		Infrastructural		Cultural		Social		Overall	
Community (province)	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Seoul	6.29	1.41	5.30	1.51	6.33	1.54	6.71	1.33	5.47	1.76	5.40	1.55	5.90	1.22
Busan	5.79	1.17	4.95	1.16	6.28	1.45	6.47	1.18	5.41	1.29	5.23	1.32	5.69	0.93
Daegu	5.66	1.24	4.92	1.49	5.66	1.84	6.10	1.71	5.09	1.63	5.44	1.80	5.48	1.41
Incheon	6.80	1.35	5.43	1.56	6.82	1.74	6.51	1.61	5.29	1.83	5.82	1.88	6.15	1.35
Gwangju	6.44	1.29	5.26	1.61	6.39	1.42	6.45	1.26	4.92	1.62	4.96	1.57	5.75	1.06
Daejeon	5.83	1.43	5.01	1.24	6.30	1.50	6.26	1.26	4.80	1.49	5.12	1.37	5.56	1.08
Ulsan	5.10	1.40	5.22	1.13	6.45	1.98	5.74	1.31	5.12	1.33	5.16	1.19	5.44	0.93
Gyeonggi	6.20	1.18	5.42	1.35	6.77	1.35	6.38	1.29	5.13	1.45	5.60	1.39	5.91	0.99
Gangwon	5.50	1.40	4.44	1.79	6.01	1.79	5.41	1.59	4.32	1.95	5.03	1.70	5.09	1.30
Chungbuk	6.39	1.34	5.80	1.39	7.29	1.31	6.61	1.24	6.22	1.33	6.36	1.24	6.45	1.00
Chungnam	5.99	1.48	5.78	1.31	6.90	1.61	6.68	1.59	5.45	1.63	6.75	1.55	6.25	1.18
Jeonbuk	6.11	1.42	4.82	1.58	6.96	1.61	6.45	1.52	5.59	1.75	6.08	1.61	6.02	1.23
Jeonnam	6.06	1.31	4.94	1.46	7.03	1.48	5.91	1.42	5.03	1.81	5.45	1.27	5.74	1.14
Gyeongbuk	5.13	1.46	4.83	1.36	7.29	1.54	5.94	1.40	5.37	1.61	5.71	1.57	5.71	1.09
Gyeongnam	5.47	1.12	5.10	1.11	7.43	1.29	6.20	1.16	5.66	1.53	5.47	1.37	5.88	0.76
Overall	5.92	1.33	5.15	1.40	6.66	1.56	6.25	1.39	5.26	1.60	5.57	1.49	5.80	1.11

use of set theory, Boolean algebra, its formation of a truth table, and a concise approach to research data (Donnelly and Wiechula, 2013). The QCA method is of three broad kinds: crisp set QCA (CSQCA), fuzzy set QCA (FSQCA), and multi-value QCA (MVQCA). This research will use CSQCA, since this method processes data by changing.

Table 2 shows that Chungbuk's mean score in terms of people's satisfaction with their communities is the highest (6.35), meaning that people living there feel themselves to have a greater level of well-being at community level than those living in the other communities. In other words, people living in Chungbuk are the most satisfied with their community. However, in terms of s.d. Gyeongnam scores the lowest (0.89); this means that the differences among people living in Gyeongnam are not great, implying that satisfaction with the community is fairly uniform.

Table 2 shows mean scores and s.d. for people's satisfaction with their communities at community level, plus overall scores.

Table 2
COMMUNITY WELL-BEING: PEOPLE'S SATISFACTION WITH THEIR COMMUNITIES AT A COMMUNITY LEVEL

Community (province)	Human		Economic		Natural		Infrastructural		Cultural		Social		Overall	
Community (province)	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Seoul	6.31	1.39	5.35	1.49	6.28	1.60	6.63	1.45	5.79	1.67	5.66	1.44	5.96	1.25
Busan	5.70	1.34	4.91	1.10	5.96	1.33	6.19	1.21	5.40	1.27	5.59	1.31	5.61	0.98
Daegu	5.49	1.31	4.85	1.37	5.47	1.79	5.97	1.63	5.11	1.64	5.43	1.68	5.39	1.36
Incheon	6.87	1.41	5.64	1.62	6.63	1.70	6.60	1.58	5.59	1.69	6.05	1.76	6.24	1.34
Gwangju	6.36	1.24	5.02	1.48	6.47	1.58	6.44	1.31	4.91	1.47	5.22	1.36	5.74	0.98
Daejeon	5.82	1.29	5.20	1.29	6.08	1.40	6.08	1.24	5.2	1.30	5.31	1.27	5.62	1.08
Ulsan	5.40	1.27	5.34	1.22	6.52	2.06	5.89	1.37	5.65	1.31	5.43	1.17	5.69	1.15
Gyeonggi	6.23	1.18	5.31	1.27	6.66	1.39	6.39	1.38	5.43	1.29	5.93	1.27	6.01	0.94
Gangwon	4.98	1.43	4.17	1.72	5.64	1.79	5.22	1.49	4.32	1.96	4.93	1.59	4.89	1.32
Chungbuk	6.25	1.33	5.64	1.43	7.15	1.26	6.42	1.19	6.32	1.27	6.33	1.19	6.35	1.00
Chungnam	5.97	1.40	5.70	1.31	6.66	1.75	6.52	1.55	5.57	1.60	6.76	1.50	6.19	1.19
Jeonbuk	5.85	1.54	4.48	1.53	6.45	1.50	6.35	1.50	5.42	1.82	6.11	1.48	5.76	1.19
Jeonnam	6.00	1.34	5.00	1.55	6.96	1.54	5.87	1.38	5.09	1.85	5.64	1.17	5.77	1.16
Gyeongbuk	4.99	1.49	4.65	1.29	7.31	1.43	6.03	1.49	5.70	1.78	6.19	1.58	5.80	1.12
Gyeongnam	5.84	1.19	5.33	1.19	7.39	1.34	6.40	1.13	6.43	1.32	6.00	1.26	6.23	0.89
Overall	5.87	1.34	5.11	1.39	6.51	1.56	6.20	1.39	5.47	1.55	5.77	1.40	5.82	1.13

Figure 1 is a quadrant graph indicating the distribution of communities (provinces) according to the mean score and s.d. for people's satisfaction in the six life-areas. As an example, Quadrant 1 includes four communities (Incheon, Jeonbuk, Seoul, Chungnam). The characteristics of Quadrant 1 are that people's general life-satisfaction is high, but differences among people are also high, so that we can say that people living in these communities are basically satisfied with their life (average score), but that the gap between those who are satisfied and those who are not is a large one. The optimal quadrant is Quadrant 4 which includes three communities (Gyeonggi, Chungbuk, Gyeongnam), because the mean score for these communities is high and the s.d. low.

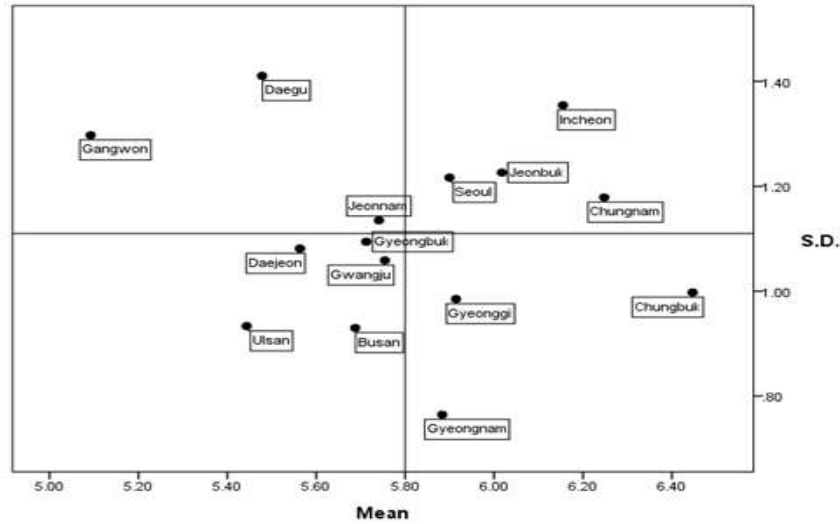


Figure 1
QUADRANT GRAPH SHOWING DISTRIBUTION OF COMMUNITIES ACCORDING TO MEAN AND STANDARD DEVIATION REGARDING PEOPLE’S SATISFACTION IN THE SIX LIFE-AREAS

Figure 2 is a quadrant graph showing the distribution of communities according to mean score and s.d. for people’s satisfaction with their communities. As in Figure 1, the most desirable quadrant is Quadrant 4, which includes three communities (Jeonnam, Gwangju, Gyeonggi). These three communities are those where people’s level of satisfaction with their communities is high and the differences between their satisfaction levels low.

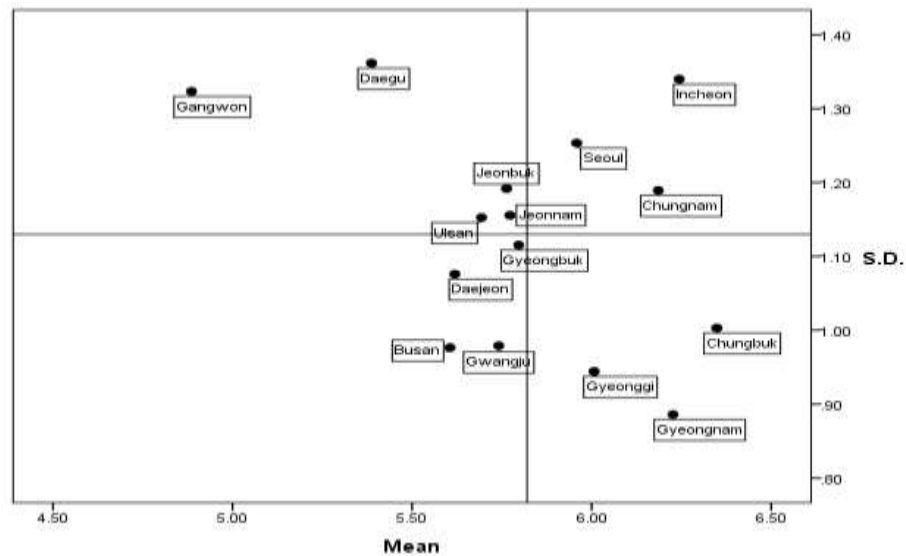


Figure 2
QUADRANT GRAPH SHOWING DISTRIBUTION OF COMMUNITIES ACCORDING TO MEAN AND STANDARD DEVIATION REGARDING PEOPLE’S SATISFACTION WITH THEIR COMMUNITIES

Table 3 below shows how people are Table 3 satisfied with their individual lives and with their communities.

Note. A value of 1 for each community in Mean means that a community's mean satisfaction score is higher than the average for all communities, and a value of 0 means that its score is lower than the average for all communities. Similarly, a value of 1 for each community in S.D. means that the S.D. value for each community is higher than the average for all communities, and a value of 0 means that its score is lower than the average for all communities.

Comprehensively speaking, the most desirable community in terms of community well-being is one which can meet four criteria: high levels of satisfaction with the life-areas; low differences in levels of satisfaction with the life-areas; high levels of satisfaction with the community; and low differences in levels of satisfaction with the community. There is only one such community in Korea: Gyeonggi, with a value of 1,0,1,0, as shown in Table 3.

Community (province)	Satisfaction with lives		Satisfaction with communities		Overall
	Mean	S.D.	Mean	S.D.	
Seoul	1	1	1	1	0
Busan	0	0	0	0	0
Daegu	0	1	0	1	0
Incheon	1	1	1	1	0
Gwangju	0	0	0	0	0
Daejeon	0	0	0	0	0
Ulsan	0	0	0	1	0
Gyeonggi	1	0	1	0	1
Gangwon	0	1	0	1	0
Chungbuk	1	0	1	0	1
Chungnam	1	1	1	1	0
Jeonbuk	1	1	0	1	0
Jeonnam	0	1	0	1	0
Gyeongbuk	0	0	0	0	0
Gyeongnam	1	0	1	0	1

Table 4 below shows the values of variables included in the QCA.

Province	GDRP	Officials' integrity	Autonomy	Welfare expenditure	Crimerate	Wellbeing
Seoul	33122	7.06	83.04	612	35.24	0
Busan	21613	7.59	55.37	711	38.01	0
Daegu	18940	7.2	51.65	669	38.4	0
Incheon	23920	7.15	63.07	604	32.46	0
Gwangju	20447	7.16	45.77	794	43.92	0
Daejeon	21169	7.6	48.27	676	31.05	0
Ulsan	61102	7.28	63.78	536	35.29	0
Gyeonggi	26826	7.41	55.2	400	32.72	1
Gangwon	24573	7.04	21.38	671	34.78	0
Chungbuk	31519	7.44	28.9	650	32.21	1
Chungnam	49904	7.36	32.77	580	32.07	0
Jeonbuk	24831	7.37	22.45	816	30.26	0
Jeonnam	35883	6.89	18.35	833	33.16	0
Gyeongbuk	34711	6.36	30.32	682	32.93	0
Gyeongnam	31311	7.59	38.08	577	33.51	1

The next element that must be considered is which combined conditions of variables lead to high community well-being levels (Table 5). As was mentioned above, communities with a high well-being level and low community disparity are seen as having a high level of community well-being. That is, knowing the combined conditions of the 3 communities belonging to the fourth quadrant of Figure 1 and Figure 2 is important for analysis. Table 6 below explains the results of variables dichotomized on the basis of the mean score of each variable.

Province	GRDP_1	Officials' integrity_1	Autonomy_1	Welfare expenditure_1	Crimerate_1	Wellbeing_1
Seoul	1	0	1	0	1	0
Busan	0	1	1	1	1	0
Daegu	0	0	1	1	1	0
Incheon	0	0	1	0	0	0

Table 6 TRUTH TABLE ANALYSIS						
Truth Table:						
V1	GRDP_1		V2	Officials' Integrity-1		
V3	Autonomy_1		V4	Welfare Expenditure_1		
V5	Crimerate_1					
o	Wellbing_1		Id	Province		
Gwangju	0	0	1	1	1	0
Daejeon	0	1	1	1	0	0
Ulsan	1	1	1	0	1	0
Gyeonggi	0	1	1	0	0	1
Gangwon	0	0	0	1	1	0
Chungbuk	1	1	0	0	0	1
Chungnam	1	1	0	0	0	0
Jeonbuk	0	1	0	1	0	0
Jeonnam	1	0	0	1	0	0
Gyeongbuk	1	0	0	1	0	0
Gyeongnam	1	1	0	0	0	1

In a truth table (Table 6) produced using the TOSMANA 1.3 program, various conditions can be compared against each other, and ideally against an outcome, a high level of community well-being. The Venn diagrams presented in Figure 3 illustrate the logical relationships between conditions. Each space in a diagram can be color coded, shaded or patterned. Figure 3 is a graphical depiction of the configurations from the truth values presented in Table 6, and was produced by TOSMANA 1.3's 'visualizer' tool.

Note. Variables starting with a large capital letter have a positive meaning or a value of 1, and those starting with a small capital letter have a negative meaning or a value of 0.

As the truth table analysis results indicate, there is 1 sufficient conditions that affect a high community well-being level. It is the configuration in which Gyeonggi is included, which is formed of a low GRDP level, a low level of welfare expenditure, and a low level of crime rate

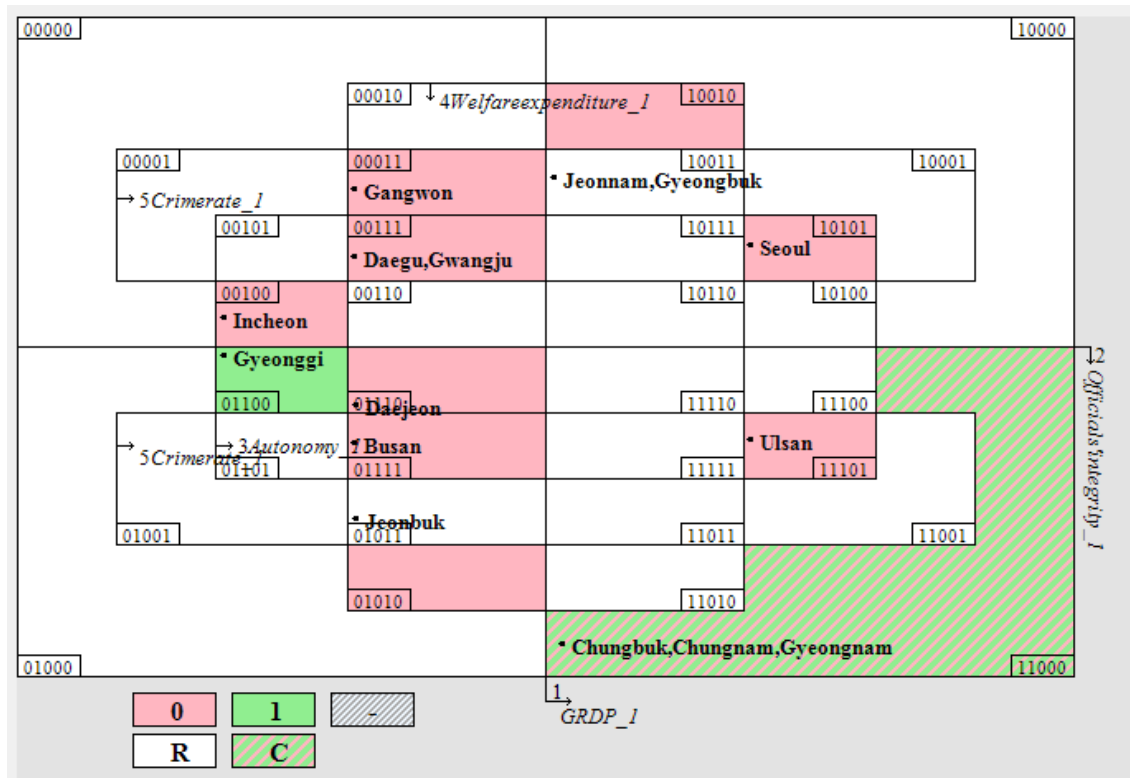


Figure 1
Venn Diagram

The research results implies that provinces with low levels of community well-being need to benchmark province with high level of community well-being (Table 1) and socio-economic conditions similar to their own, instead of trying to follow the provinces with high levels of well-being but socio-economic conditions which are different from theirs.

CONCLUSION

The main purpose of this study is to demonstrate specific configuration models explaining community well-being in 17 provinces in Korea, in order to (1) portray the causal connections among factors affecting community well-being and (2) to put forward policy implications whereby each province can strengthen its community well-being level. Following the requirements of the QCA model specification, we converted the actual value of each variable to membership (1) and non-membership score (0) using the TOSMANA software program, produced a truth table, and derived the one configuration explaining community well-being in Korean provinces.

QCA is an alternative approach to the analysis of community well-being that involves truth tables, Boolean algebra, and a search for a greater understanding of causal conditions. The use of QCA in community well-being studies has rarely been reported, and there are likely to be conceptual and paradigmatic challenges to its adoption in some settings. The potential of QCA to refocus research questions and to offer a logical interpretation of combinations of qualitative and

quantitative data may be especially useful for many small case studies.

Some limitations of this study can be identified. First, it is important to remember that this study has focused primarily on 17 provinces in Korea. Even though this research result supports the theoretical assumptions, it could result in a narrow view of the effects of community well-being effects, one that it might not be possible to extrapolate to other country groups less sensitive to the influence of economic and financial factors. Second, many variables exist which could influence the variables considered in the study, but which are not present in the study's conceptual model. More interesting and valid conclusions could be drawn from a more global study that could consider social and non-economic factors, such as civic organizational structure. The research results are summarized as follows.

First, the most desirable community in terms of community well-being is one which can meet four criteria: high levels of satisfaction with the life-areas; low differences in levels of satisfaction with the life-areas; high levels of satisfaction with the community; and low differences in levels of satisfaction with the community. There is only one such community in Korea: Gyeonggi, with a value of 1,0,1,0, as shown in Table 3. Second, there is only one configuration of variables affecting the most desirable community in terms of community well-being. This paper emphasizes the importance of community well-being, describes the usefulness of QCA in examining what causal conditions can influence high levels of community well-being in Korea, and attempts to discover configurations associated with community well-being. In this analysis, one configuration affecting community well-being, which is sets of conditions suggesting a relationship or solution between the conditions, is derived. QCA is an alternative approach to analysis in community well-being that involves truth tables, Boolean algebra, and a search for a greater understanding of causal conditions. The use of QCA has rarely been reported in regional well-being studies, and there are likely to be conceptual and paradigmatic challenges to its adoption in some settings. Future research will be required to measure not only objective community well-being but also subjective community well-being. This research covered only the subjective aspect of community well-being and did not cover objective community well-being. Research that measures community well-being using a comprehensive approach that covers both objective and subjective aspects and discovers the combined conditions that affect community well-being is needed in the future.

To sum up, the research result implies that in order for the provinces with a low level of community well-being to enhance their community well-being level, they may choose one path, considering their socio-economic conditions in terms of similarity with conditions of the province having high level of community well-being. This is because QCA here detects the conditioning effects of independent variables and specifies different paths to the outcome, a high level of community well-being.

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