

Analysis of Research Trends and Co-Author Patterns in Community Well-Being

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Abstract

The aim of this study is to conduct thematic analysis and co-author pattern analysis of academic research papers on community well-being. In this way, it is possible to form a clearer understanding of the academic identity of the field of community well-being and of the types and characteristics of each subject, and also to understand the patterning of co-authors of works on community well-being. The latter will be adjudged on the basis of four network types. The analysis results of this study may be summarized as follows. The research topics relating to community well-being fall into seven main categories. When we examine the patterns of co-authors who have conducted community well-being research, we find many networks of a circle type. The fact that the pattern is close to that of a circle, which may be said to be an active pattern in terms of high levels of academic exchange and performance, augurs well for future community well-being research.

Key words: community wellbeing, research trends, semantic network analysis

1 Introduction

Economic interests such as growth, income, and employment, which are regarded as important factors in GDP, have historically driven regional development (Tomaney, 2015: 1). However, as Seers (1969) has argued, development involves another factor besides economic growth. Easterlin (2010) observed a paradoxical relationship between income and happiness in the United States. His conclusion is that, for each country, at any one point income can have a variety of effects on happiness, but, if a country is observed for an extended period of time, even if income increases happiness does not increase proportionally. This relationship is currently being observed in Western Europe and the post-socialist countries, as well as in Latin American and Asian middle-income countries. Accordingly, "happiness economics" has emerged, and many researchers are looking for new ways of measuring regional development. Against this background, the research topic that has emerged is *community well-being*.

The concept of community well-being has been prone to various interpretations and perspectives according to different scholars and varying research areas, even though there is no disagreement about the fact that the concept connotes a state that reflects happiness and health. In other words, the concept of community well-being has complex and multi-purpose properties. Well-being can include the psychological components of an individual's feelings, and this psychological dimension can be changed through relationships with others or through participation in society. In addition, such psychological differences may vary depending on the extrinsic properties of the region in which the subject lives. This means that community well-being includes several components, and so studies of it have attempted to distinguish these different areas. As a result, community well-being efforts have broadly divided into two categories: a method of establishing and evaluating the well-being area of the local community; and, a method of establishing a new community well-being area by collecting data and viewpoints from previous studies.

As mentioned above, since community well-being is defined in various ways, it is not easy to find an agreed-upon definition, but it is commonly accepted that it is centered on the role of local government. In other words, community well-being means well-being at the community level.

Community well-being is a concept in which “community” encompasses not only physical spaces, but also social, economic, political, psychological, and cultural situations, and so should include various different areas of the local community. This concept is based on the argument that ensuring sufficiency of well-being should be dealt with on a regional and community basis (Murphy & Kuhn, 2006; Cuthill, 2002). To define the concept of community well-being more specifically: social well-being refers to satisfaction and development potential in human relationships, while economic well-being refers to satisfaction and potential in the economic field, well-being in residential and natural environments, and well-being at the individual level. It is divided into several sub-areas, such as well-being that affects the health of the child (Campbell, 1974; Chanan, 2002). The conditions applying in a community, the activities of the residents, and the components of the local authority’s public services, which differ slightly according to area, are all factors that satisfy the needs of residents.

Since the research topic of community well-being has become such an important topic in social science, the need for in-depth research on this topic is increasing. What is important in these early days of study is what subject groups are being studied: in other words, what the actual research topic is. By analyzing these research topics, it becomes possible to grasp the current identity and characteristics of this research field, and the research areas that should be supplemented in the future. In addition, it is necessary to analyze the patterns of co-authoring by researchers in the field.

Community well-being research topics are multidisciplinary (Christakopoulou et al., 2001; Kruger, 2010). Therefore, when researchers from various disciplines apply a multidisciplinary perspective along with convergent thinking, community well-being research will be enhanced and gain in aptitude (Ransey & Smit, 2002; Kusel, 1991). Against this background, this study attempts to classify studies on community well-being by subject and to identify specific characteristics according to this classification (White, 2008; Whorton & Moore, 1984; Wiseman, 2008). Furthermore, it aims to understand the co-authoring pattern of researchers who write papers on community well-being. If we analyze the co-authoring pattern of multidisciplinary community well-being studies, we can find complementary points for future studies. Against the background of this research, the purpose of this study is, first, to classify and grasp the characteristics of each subject by classifying academic papers relating to community well-being as research subjects, and secondly to analyze the patterns applying to co-authors of community well-being.

2 Review of prior research on community well-being research trend analysis

Up until now, there have been few prior domestic and foreign studies on research content and trend analysis relating to community well-being (Alper & Golbahar, 2009; Bond, 2018; Baydas et al., 2015; Bozkurt et al., 2016; Martin et al., 2018; Reiser & Dempsey, 2007; Bemard et al., 2009). Although some research trend analysis on happiness has been discovered, it is no exaggeration to say that there are few studies relating to community well-being that are conceptually different from studies on happiness. The reason for this is that there are not many research papers relating to community well-being relative to studies in other academic fields. This may be because many papers have not been published, owing to the short history of development of the research topic of community well-being. In addition, the difference between related concepts such as happiness, quality of life, and satisfaction is conceptually somewhat unclear, because analysis of research trends on community well-being has not been conducted.

One further discussion regarding research trend analysis concerns the analysis methodology. In the case of research trend analysis conducted in other academic fields, in most cases a simple frequency analysis was performed by pre-determining a category for classifying the subject and assigning the existing research paper to that category. However, in the case of such research trend analysis, since the exclusivity between categories is weak, there is too much subjectivity involved in assigning research papers to one category, and it is difficult to apply objective criteria. In order to overcome this problem, a network analysis methodology has recently widely been used. This is an analysis methodology that has been widely used since 2010 to analyze the research trends among academics

In the case of foreign papers, unlike a setup in which categories are selected in advance to classify papers for research, a method of deriving a specific category afterwards using keywords and connections in sentences has increasingly been used (Bodily et al., 2019). The advantage of this method is that it is possible to classify the trends of studies conducted over a certain period of time by subject while reducing the subjectivity of the researcher. In addition, it can help to classify and understand research trends more objectively, since it is possible to find a group by specific subject among subjects researched during a given period if the viewpoints are classified and analyzed. A further advantage of this research method is that it is possible to grasp the centrality of introverted and extroverted connections, thus enabling one to gain information about the basis on which concepts are centered and issues have developed, and at the same time ascertain which concepts generate subsequent issues and research.

On the other hand, studies using the network analysis methodology do not show any methodological problems and limitations (Bozkaya et al., 2012; Bozkurt et al., 2015). In the process of performing the network analysis, there is no room for subjectivity to intervene in the integration work on the rearrangement of similar terms. One issue here, however, is that even though the classification itself allows some degree of objectivity, subjective judgment will be involved in the process of interpreting correlations between subjects included in the same classification, or mutual causal relations between classification groups following classification by subject. There are cases where it is difficult to clearly explain the various relationships. In order to solve this problem, if several methods are used in combination, the network analysis methodology may be said to provide more information than the traditional categorization method in the process of explaining the frequency, strength, and connection relationships of core concepts (Subramanyam, 1983; Check &Schutt, 2012).

3 Research design

3.1 Analysis target and period

The subject of analysis of this study is 145 social science journals managed by Springer Publishing. The analysis period is from 2010 to 2019. Springer Publishing has signed a contract with Cyram, a manufacturer of Netminer 4.0, a program that it wishes to be used in this study, so that Netminer program purchasers can access Springer's journals. For this reason, in this study, the analysis is limited to journals subject to management by Springer.

3.2 Analysis method

In this study, we adopt a language network analysis method. The semantic network analysis method represents a kind of content analysis method for analyzing texts in language. It is a method (also called language network analysis) of analyzing the relational characteristics of various entities constituting an individual text. The salient feature of this method is that it is possible to extract concepts representing certain characteristics from messages expressed in linguistic texts, and to grasp the properties of semantic relationships formed between texts.

In this study, this semantic network analysis is used. Through this form of analysis, words with meanings are extracted from texts included in the papers relating to community well-being, and among them, keywords (that is, words that better represent the meaning of the text) are selected, and the semantic connection between them identified. This allows us to construct a keyword network based on relationships. In addition, it is possible to analyze various semantic characteristics of language messages by using the analysis indicators of the network. Using this method, we will be able to grasp the semantic characteristics of papers relating to community well-being.

3.3 Analysis procedure

The language network analysis process for papers relating to community well-being proceeds as follows. First, we collect a set of linguistic texts. In this case, "text" is not a single document, but rather a large set of texts. Next, the text itself is processed. Among the many words contained in the text, words that are considered unnecessary are excluded. This process includes word correction, control, and removal. The next step is to select keywords. Keywords are selected from the words extracted and refined in the previous step.

Keyword selection is a very important task, not only in language networks but also in various kinds of text analysis. This is because the quality of the analysis result varies according to the keywords selected. The next step is to identify relationships. Among the extracted words, a keyword is selected from words with high quality, or high core quality as keywords, or else a keyword is coded using a subject category system. The next step is to configure the language network. In the case of language networks, co-appearance relationships are mainly used. Therefore, when the relationship between the simultaneous occurrence of keywords is identified, a matrix of frequency of simultaneous occurrence of keywords is created on this basis, and a language network can be constructed with this matrix.

The language network is constructed from the co-occurrence relationship of keywords. The final step is that of analyzing the characteristics of language networks. In targeting the configured language network, various characteristics of the network are analyzed. These characteristics are analyzed using network analysis tools, mainly through visualization analysis and analysis indicators. The network analysis tool used here is the NetMiner 4.0 program. Visualization analysis refers to explaining visual characteristics following visualization of a language network. There are numerous analysis indicators, but the main indicator used by this study is the connection center.

4 Analysis result

4.1 Word cloud analysis

In all, 734 papers that have “community well-being” in their title, or that deal with the subject of community well-being, were found. The total number of words appearing in the papers is 8297. As Table 1 shows, the word that appeared most in terms of frequency was *community* (1080 times), followed by *health* (673 times), and *wellbeing* (554 times).

Table 1 Words by frequency of appearance

		1	2	3	4	5
		Part of Speech(P	Frequency	Word length	Name Type	Author Keywor
1	community	Common Noun"	1,080.0	9.0	"-	"False"
2	health	Common Noun"	673.0	6.0	"-	"False"
3	wellbeing	Common Noun"	554.0	9.0	"-	"False"
4	development	Common Noun"	385.0	11.0	"-	"False"
5	policy	Common Noun"	312.0	6.0	"-	"False"
6	change	Common Noun"	312.0	6.0	"-	"False"
7	approach	Common Noun"	299.0	8.0	"-	"False"
8	intervention	Common Noun"	273.0	12.0	"-	"False"
9	practice	Common Noun"	259.0	8.0	"-	"False"
10	impact	Common Noun"	259.0	6.0	"-	"False"
11	result	Common Noun"	258.0	6.0	"-	"False"
12	level	Common Noun"	249.0	5.0	"-	"False"
13	activity	Common Noun"	248.0	8.0	"-	"False"
14	person	Common Noun"	245.0	6.0	"-	"False"
15	analysis	Common Noun"	234.0	8.0	"-	"False"
16	life	Common Noun"	231.0	4.0	"-	"False"
17	outcome	Common Noun"	218.0	7.0	"-	"False"
18	system	Common Noun"	211.0	6.0	"-	"False"
19	indicator	Common Noun"	208.0	9.0	"-	"False"
20	process	Common Noun"	202.0	7.0	"-	"False"
21	method	Common Noun"	201.0	6.0	"-	"False"
22	area	Common Noun"	195.0	4.0	"-	"False"
23	group	Common Noun"	191.0	5.0	"-	"False"
24	framework	Common Noun"	189.0	9.0	"-	"False"
25	model	Common Noun"	186.0	5.0	"-	"False"

As a result of including the frequency of the words appearing in the papers as weights, a *word cloud* was formed, as shown in Figure 1.

Topic 2 (Figure 5) consists of *management, sustainability, action, water, value, system, and business*. This can be said to be the sustainability and management group relating to community well-being.

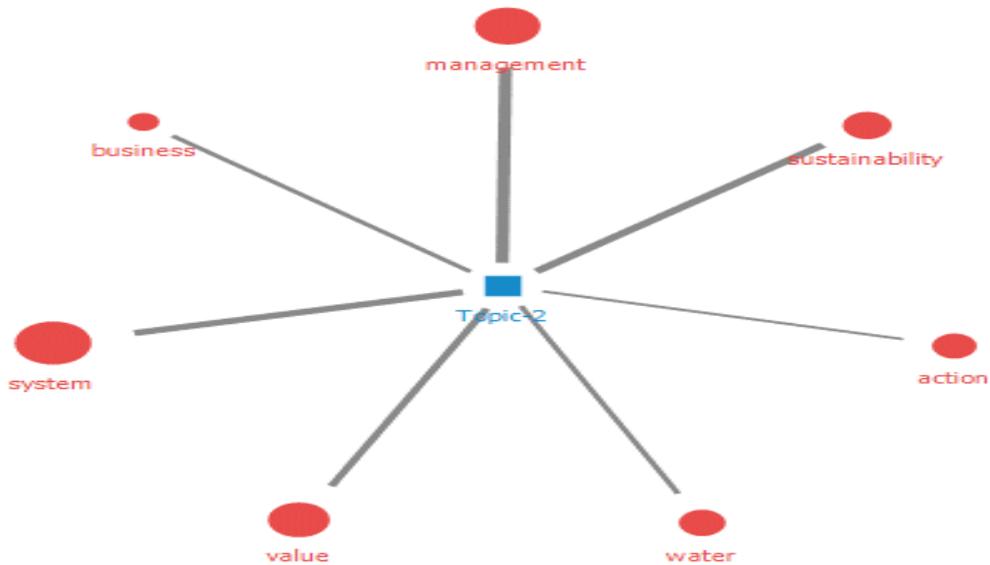


Figure 5 Topic 2: community well-being sustainability and management group

Topic 3 (Figure 6) consists of *work, crime, resilience, capital, concept, perspective, and experience*. This can be said to be a group of major components of community well-being.

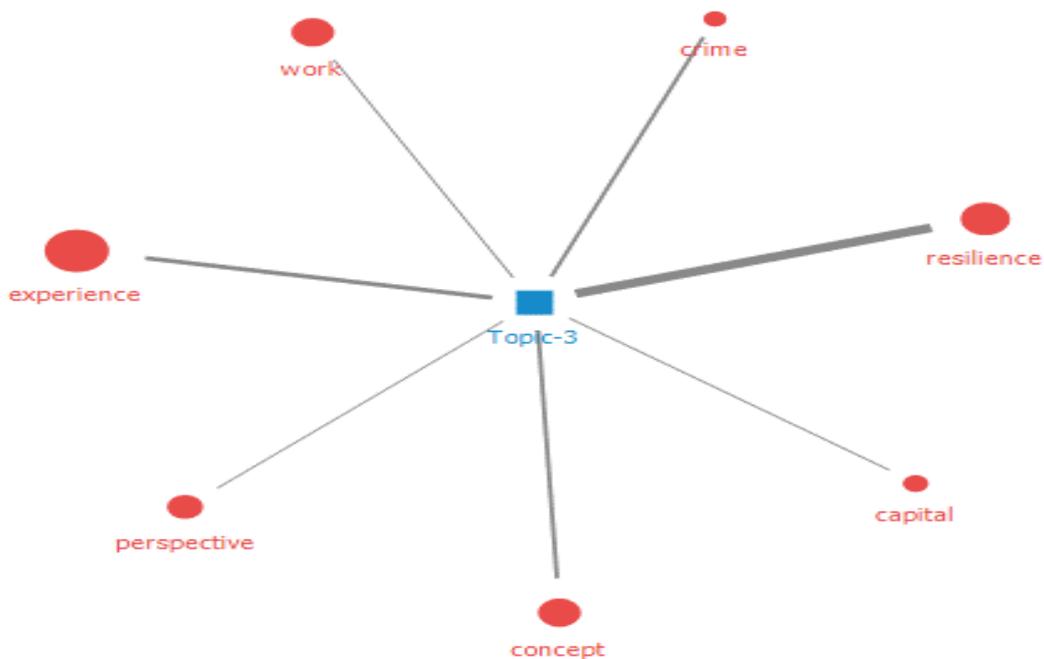


Figure 6 Topic 3: community well-being major components group

Topic 4 (Figure 7) is made up of words such as *city, population, quality, adaptation, climate, life, and resident*. This can be called a community well-being living standards group.

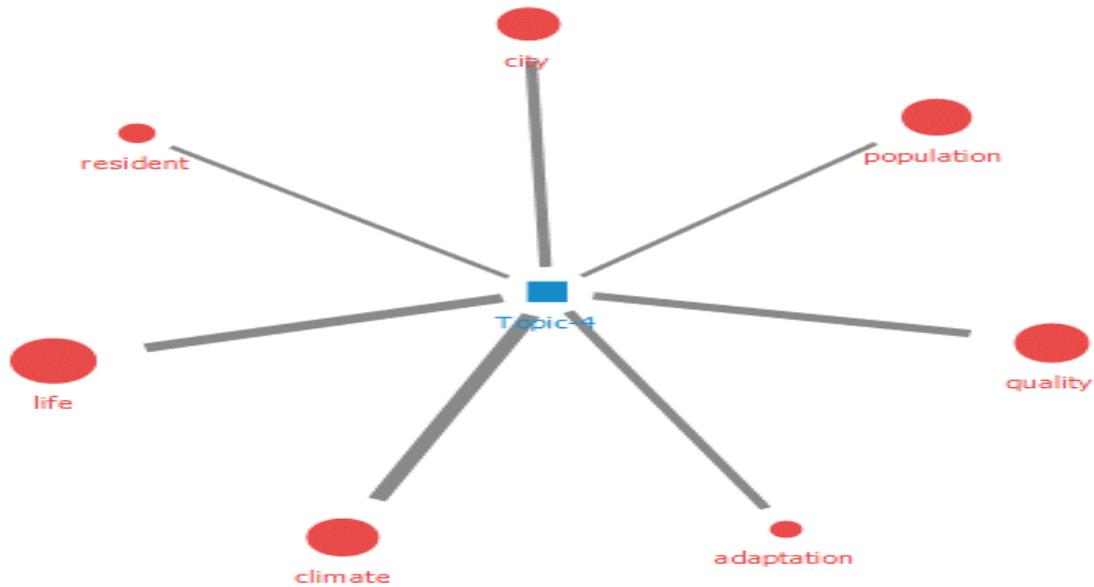


Figure 7 Topic 4: community well-being living standards group

Topic 5 (Figure 8) consists of words such as *neighbor*, *participant*, *measure*, *child*, *activity*, *association*, and *adult*. This can be termed a group of major stakeholders in community well-being.

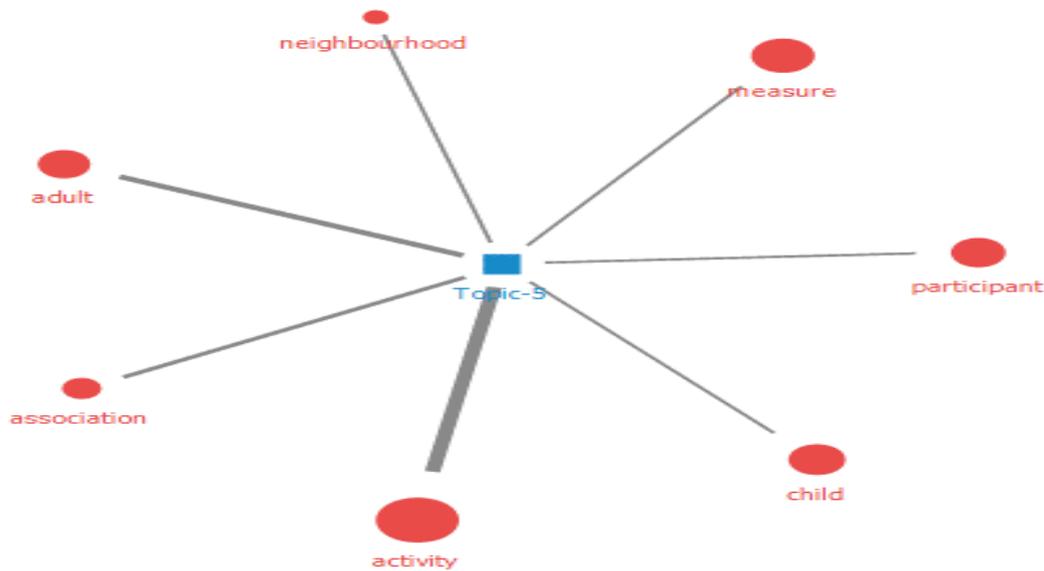


Figure 8 Topic 5: major stakeholders in community well-being group

Topic 6 (Figure 9) is made up of words such as *school*, *outcome*, *care*, *service*, *education*, *learning*, and *patient*. This can be called a community well-being performance group.

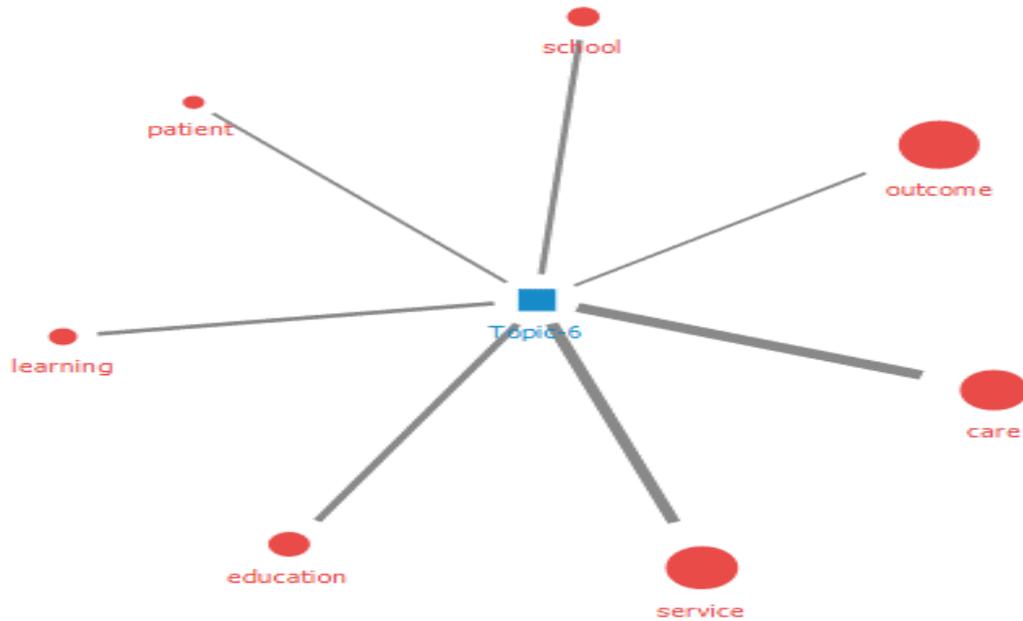
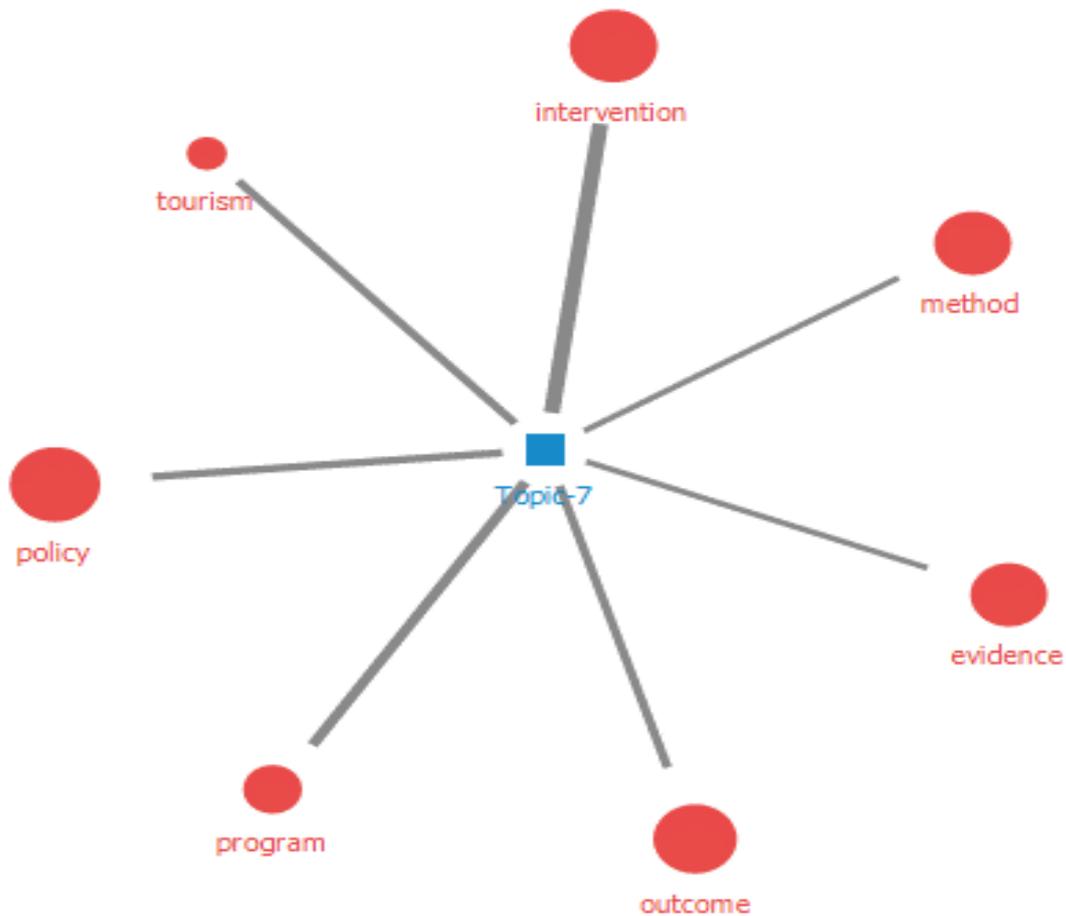


Figure 9 Topic 6: community well-being performance group

Finally, Topic 7 (Figure 10) is made up of words such as *intervention*, *method*, *evidence*, *outcome*, *program*, *policy*, and *tourism*. This can be defined as a community well-being program group.



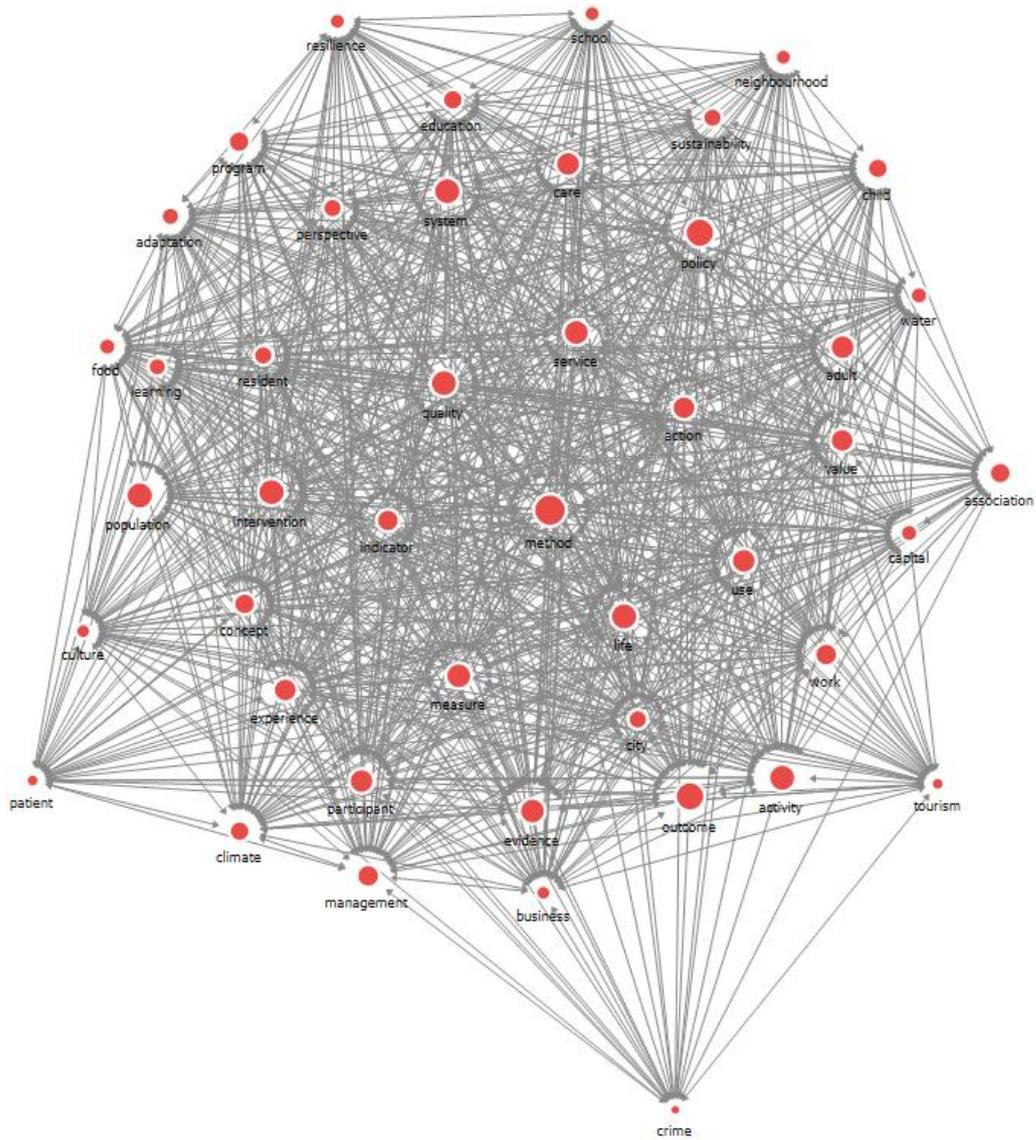


Figure 12 Connection centering analysis result

4.4 Co-author pattern analysis

Below, we analyze the patterns of authors who have written community well-being papers. The number of authors of the 734 papers is 2152. Of these, those who wrote two or more papers number 178. This study aims to analyze the co-author pattern of these 178 authors. Table 2 presents the authors who have written community well-being papers, ordered by number of papers written.

Table 2 Authors of community well-being papers

		1	2
		# of article	Affiliation
1	Suzanne Mavoa	16.0	of Melbourne, Melbourne, Australia"
2	Billie Giles-Corti	14.0	MIT University, Melbourne, Australia"
3	Marvin Schneider	12.0	"The KBA Consulting Group"
4	Denis Kilroy	12.0	"The KBA Consulting Group"
5	Melody Oliver	10.0	"Auckland University of Technology"
6	Seung Jong Lee	8.0	oul National University, Seoul, Korea"
7	Sally Brown	8.0	iversity and Independent consultant"
8	Hannah Badland	8.0	MIT University, Melbourne, Australia"
9	Kay Sambell	8.0	"Edinburgh Napier University"
10	Yunji Kim	8.0	ning, Cornell University, Ithaca, USA"
11	Linda Graham	8.0	"Northumbria University"
12	Ornette D. Clennon	6.0	"Manchester Metropolitan University"
13	Sarah Foster	6.0	Western Australia, Crawley, Australia"
14	Matthew Knuiman	6.0	Western Australia, Crawley, Australia"
15	Yin Paradies	5.0	content="yin.paradies@deakin.edu.au"
16	Hannah M Badland	5.0	of Melbourne, Melbourne, Australia"
17	Sally Hopewell	5.0	olfson College Annexe, Oxford, UK"
18	Paul Montgomery	5.0	nt="paul.montgomery@spi.ox.ac.uk"
19	Sean Grant	5.0	JD Corporation, Santa Monica, USA"
20	Neville Owen	5.0	betes Institute, Melbourne, Australia"
21	Tessa Hicks Peterson	5.0	"Pitzer College"
22	Evan Mayo-Wilson	5.0	content="e.mayo-wilson@ucl.ac.uk"
23	Hayley Christian	5.0	Western Australia, Crawley, Australia"
24	Girol Karacaoglu	5.0	"Victoria University of Wellington"
25	Anita King	5.0	"The New Zealand Treasury"
26	David Moher	5.0	or_email" content="dmoher@ohri.ca"

Marvoa has written the most papers relating to community well-being (16). In second place is Giles-Corti (14), and third Marvin Schneider (12).

Figure 13, by contrast, shows the author positions rearranged through concentric circle analysis. It shows that the authors located in the middle of the concentric circle have written numerous papers and are strong in terms of influence.

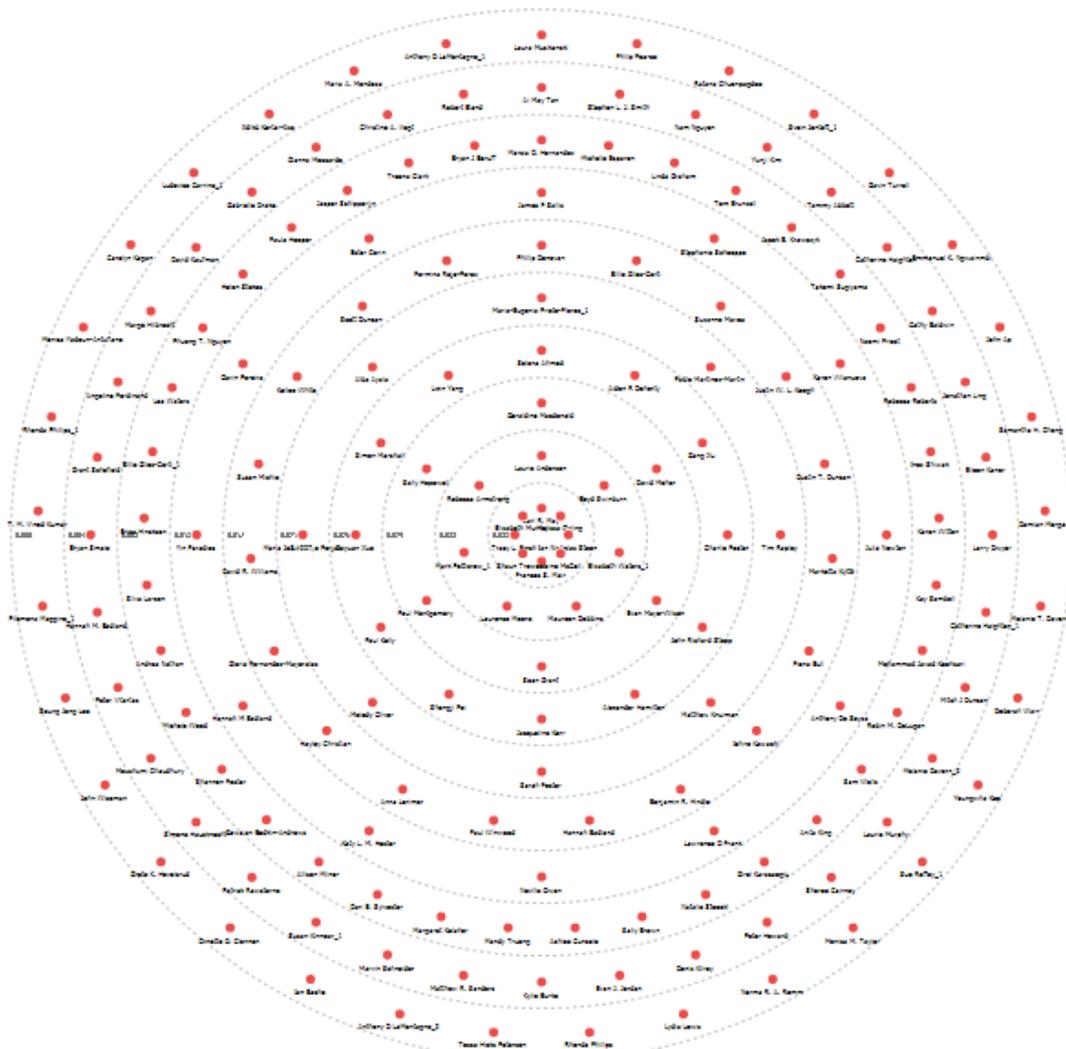


Figure 13 Analysis of concentric circles of co-authors

The *pattern picture* for co-authors, however, which may be considered the most important analytical content of this study, is shown in Figure 14. Looking at the shape of the relationship between network participants, we can make six key observations:

1. In general, it can be classified into four types of network: star-type (star); Y-type (Y); chain-type (chain); and circle-type (circle). In theory, the star and Y types are more effective in terms of problem-solving time than the chain and circle types.
2. The star type and the Y type exchange the least number of messages. The chain type is next, while the circle type uses the most messages.
3. Those who participated in the circle-type network have the most fulfilment and satisfaction from their research, followed in diminishing order by those in chain type, Y type, and star type networks.

- 4. The star type, Y type, and chain type generate the fewest errors, whereas the circle type generates the most errors.
- 5. The probability of a voluntary leader occurring follows the order circle type, chain type, Y type, star type.
- 6. In terms of performance improvement, circle-type researchers are the most efficient, while star-type researchers are the least efficient. We can observe that the circle type is desirable in terms of activating exchanges between academic researchers and improving performance.

As Figure 14 indicates, the central network form for researchers who write numerous papers can be said to be close to a circle. In other words, it has been shown that the level of information exchange is relatively high among key researchers, and productivity is relatively good. In other words, in the case of leading scholars leading research relating to community well-being, a large number of circle-type networks were found. In view of these characteristics, it is expected that the performance, and information exchange, of co-authors on community well-being will continue in the future.

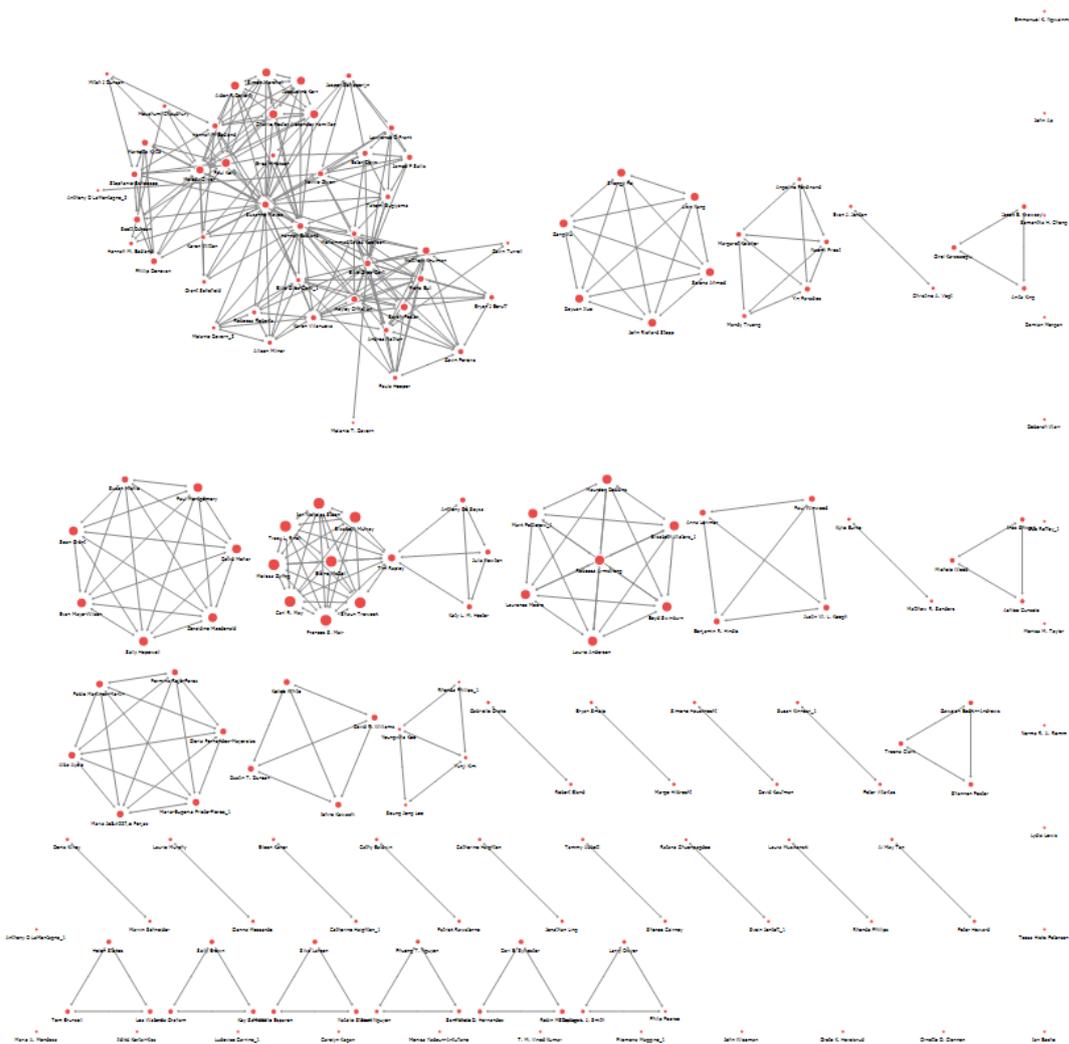


Figure 14 Co-author pattern

5 Conclusion

In this study, an attempt was made to analyze the trends and outcomes of research on community well-being, a topic which has recently attracted much interest in the social science field. Numerous researches relating to community well-being have been carried out, but research trend analysis, or co-author pattern analysis on the outcomes of community well-being research, have hardly been performed. Recognizing these problems, this study conducted research trend analysis and co-author pattern analysis in this field as a means of solidifying future community well-being research. For convenience, the subjects of study were research papers relating to community well-being included in 145 international journals managed by Springer Publishing.

Unlike other previous studies, this study is of great significance in that it analyzed these research trend using the so-called language network analysis method. Pattern analysis of community well-being co-researchers has not previously been conducted, and so the present analysis has important academic significance. As a result of the analysis, seven major topics relating to community well-being were identified: that is, all the research papers relating to community well-being that have been written to date fall into seven large topic groups. In addition, viewed through the lens of pattern analysis of co-authors, leading scholars exhibit a circle-type network. This bodes well in terms of the performance, and the vitality, of information exchange.

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