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## EXAMINATION OF THE EVOLUTIONARY DEVELOPMENT OF THE CONCEPT OF SOCIAL INNOVATION BY THE SCIENCE MAPPING METHOD

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### ABSTRACT

**Purpose-** The main objective of this study is to investigate the evolution of the concept of social innovation from 1966 to the present day.

**Methodology-** Bibliometric analysis enables researchers to examine statistically the country, author(s), cooperation among authors, citations, institutions, and published years of selected publications and to put forward the general structure of a certain discipline using obtained statistical findings. On the other hand, scientific mapping analysis is a method that concentrates on determining the evolution of a scientific field and its constrained scientific areas. In order to better understand how the evolution of the concept of social innovation changes and develops during the sample period, firstly, a bibliometric and secondly a scientific mapping analysis were performed and the findings were interpreted.

**Findings-** SciMAT package program was used to perform scientific mapping analysis. Results reveal that there are 1,428 publications concentrating social innovation under Scopus database, while 58.1% (830) of them were articles, 16% (229) of them were conference papers, 11.2% (160) of them were book chapters and the rest of them was other publications.

**Conclusion-** A thematic change was generally found for the concept of social innovation for the sample period of 1966-2016. The corresponding thematic change was generally evolved by the prominence and the decline of some associated scientific areas.

**Keywords:** Bibliometric analysis, science mapping analysis, social innovation, innovation, strategic management.

**JEL Codes:** M10, M14, M16

### 1. INTRODUCTION

The purpose of this research is to examine the scientific publications produced in the field of social innovation in the world in the period of 1966<sup>1</sup>-2016 by means of bibliometric analysis. Despite the fact that there are theoretical and practical studies on the concept of social innovation in the literature, no science mapping analysis study on the development of social innovation studies in the post-1966 period has been found. In this context, it is possible to attain social innovation studies and produced scientific publications through bibliometric databases, and to analyze and comment on them.

This research was carried out by bibliometric analysis method which is increasingly used in different disciplines day by day. Bibliometric analyzes are made with a variety of purposes in relation to scientific publications, such as making comparisons between countries, identifying prominent topics, seeing how a daily concept changes compared with the past, and finding out how these concepts relate to other concepts. In this study, how social innovation studies have changed and developed and the relation with other concepts will be revealed by bibliometric analysis method. In this context, the main concerns are the number of articles published in the Scopus database during the period of 1966-2016 concentrating the concept of

<sup>1</sup> Because there is no access to any data prior to 1966 on SCOPUS databases, the data after this year has been considered.

social innovation, the distribution of the corresponding articles regarding the topics on the basis of keywords, the difference among the topics in the field of management during the sample periods, and the themes that emerge when they are separated into periods (1966-1999, 2000-2008, 2009-2016). The rest of the paper is as the following. Second section gives information about the concept of social innovation along with reviewing the existing literature. Third section introduces the methodological background about bibliometric analysis and scientific mapping. Fourth section presents the findings obtained from bibliometric analysis and scientific mapping and interprets the corresponding findings in line with the existing literature. The paper concludes with the recommendations with respect to analysis results and suggestions for future studies.

## **2. THE CONCEPT OF SOCIAL INNOVATION**

The concept of social innovation is as old as mankind (Sims, 2006) but social innovation works in literature has received rapidly growing scholarly and policy interest during the last decade (Adams and Hess, 2010). The interest in social innovations has grown approximately since 2000 (Dainiene and Dagiliene, 2015).

Although the concept of social innovation was mentioned more often in the literature in the last decade, it did not receive as much interest as technological innovations. The most important reason for this is that, unlike concrete and well-defined technological innovations, it is not easy to observe social innovations and distinguish them from the social environment (Eren, 2010).

As a result of innovation (or, in other words, the innovation tendency) and the continuous and good operation of the cycle of change, civilizations and the world which they are in are developing and progressing. It is thought that innovation is not just an economic process or system. It is now an accepted fact that innovation is the process involving a set of subsystems that are the sum of social trends that eliminate inequalities, generate employment and contribute to the protection of the environment (Halaç et al, 2014).

The heart of the long run economic growth in the all economic growth models is technological change and innovation. In this context, countries must design economy policies in order to develop science-technology-innovation environment in the society and economy, leading sustainable economic growth and global competitiveness (Şener and Saridoğan, 2011; 816).

Joseph Schumpeter is the first person to emphasize the necessity of social innovation in parallel with technological innovation in order to provide economic efficiency (Schumpeter, 1942). Schumpeter also noted the importance of the role of social innovation in other areas of society (social, political and cultural life) as well as in the economy (Eren, 2010).

The basic characteristics of the existing social and cultural structure in the society must be well known and analyzed so that innovativeness can sustain a social continuity independent of individual achievements. Drucker (1985) and Osborne et al (1992) point out that assessments made on innovation will help managers and politicians with their long-term planning to improve the quality of life of societies. (Halaç et al, 2014).

In today's world, governments, public institutions and organizations, non-governmental organizations and companies have begun to meet on common grounds in solving the problems of societies. This union brings the concept of social innovation to the foreground.

The term social innovation, as used here, refers to the generation and implementation of new ideas about how people should organize interpersonal activities, or social interactions, to meet one or more common goals. As with other forms of innovation, the products resulting from social innovation may vary with regard to their breadth and impact (Mumford, 2002).

The term 'social innovation' has had two meanings in the academic literature. In its earliest scholarly uses, primarily in sociology, it was used to refer to the creation of new patterns of human interaction, new social structures, or new social relations. The second focuses on innovations designed to address a social or environmental issue or to meet a specific social market failure or need (Nicholls and Dees, 2015). Social innovation; adopt a process perspective and consider it to be "the generation and implementation of new ideas that are motivated by the goal of meeting a social need" (Hernandez and Cormican, 2016).

The role and importance of social innovations is growing nowadays as the traditional solutions are not enough to address deep-rooted social problems. Social needs and solvency of these problems become mainstream in terms of education, social mobility, trust and community life, obesity, violence, child well-being and etc. The reason for such increase was a demand for developing a new approach, which helps to review and analyze social challenges (Dainiene and Dagiliene, 2015).

Examples of this sort of social innovation may be found in the lives of Martin Luther, Henry Ford, and Karl Marx. At the other end of this continuum, social innovation might involve in the creation of new processes and procedures for

structuring collaborative work, the introduction of new social practices in a group, or the development of new business practices (Mumford, 2002).

There is an example about Professor Muhammad Yunus founded The Grameen Bank in 1976 as a microfinance organization that gives micro credit loans to impoverished people without demanding collateral. The bank was founded with the belief that one could fight poverty by bringing financial services to poor people and helping them to establish profitable businesses. The project turned out to be a driver of social change and has established a new method of money lending and fighting against poverty. Eventually, Yunus won the Nobel Peace Prize for his ‘...efforts to create economic and social development from below’ (Santana, 2014). . It has been a driver of social change and has been presented as a successful example of social innovation.

The concept of social innovation appears to be taking place more and more in discussions on political, scientific and public issues. The belief that social innovation is necessary in overcoming important problems that societies are and will be struggling with today and in the future is increasingly becoming widespread among researchers, policymakers and practitioners (Özdemir and Ar, 2015).

Social innovation is a phenomenon that is realized by introducing new services in areas where social problems such as health, culture, art, employment, accommodation, education, environment can be observed, identifying new routes for existing services, expanding beneficiary masses of services and the adoption of strategies to find new sources (Özdemir and Ar 2015).

**Table 1: Summary of Contribution to Social Innovation in the Literature**

The Field in which Contribution is Made to the Definition of Social Innovation	The Details of the Field	The Author who Contributed to the Definition
Participants	A process created with the involvement of the society	Crozier and Friedberg (cited from 1993 Fujisawa et al 2015: 680)
Target Group	Targeting individuals and societies facing social and economic difficulties	Goldenberg (2004:1)
	Creating value for the whole society rather than individuals	Hubert (2010: 7); Edwards-Schachter et al (2012: 680)
Areas of Interest	Introducing new services in areas where social problems can be observed, implementing new revenue generating activities	Haugh (2005: 5)
	Restructuring of existing assets (social capital, historical heritage, traditional craftsmanship, accessible advanced technology)	Mulgan (2006: 8)
	It can be applied in many different fields such as government services (new model for public health systems), commercial markets (organic foods), social movements (fair trade), academic field (educational models in child care) and social enterprise	Fujisawa et al (2015: 2)
Goals	Improving economic and social performance	Heiskala and Hämäläinen (2007: 59)

	Including innovative applications not previously applied	Citing from Phills et al (2008) Fujisawa et al (2015: 1)
	An initiative, product, process or program that profoundly changes beliefs of the social system	Cahill (2010: 259)
Used Concepts	Institutional capacity is needed and concepts such as "learning regions" and "learning institutions" are the most important elements in the social innovation process	Andrew and Klein (2010: 22)

Source: Kazançoğlu and Dirsehan, 2016

### 3. DATA AND METHODOLOGY

Bibliometric analysis will be applied in the research. For this, the "SCOPUS" database will be scanned using the keyword "social innovation". The analysis, visualization and interpretation of the data will be carried out using the SciMAT program, one of the science mapping tools.

#### 3.1. Bibliometric Analysis and Science Mapping Analysis

Bibliometric analysis is generally a tool for measuring international scientific activities. Science mapping, on the other hand, has widely been accepted as a new developing field in a short time. Science mapping analysis is a method that evaluates the structure and change of information and facilitates access to information. (Saka and Igami, 2007:1).

Science mapping or bibliometric mapping is an important research topic in the field of bibliometry. It is a tool that explains different disciplines, fields, articles, authors and their relations with each other. Science mapping analysis is a method focused to identify a scientific field with limited research areas and the evolutionary development of these areas. In other words, the purpose of science mapping is to demonstrate the structural and dynamic image of scientific research (Cobo et al, 2012:1609). Bibliometrics is also an important tool for analyzing and evaluating the progress of academic research in countries, universities, research centers, research groups and journals (Martinez et al, 2015: 257).

Citation networks constitute the basic principle of bibliometric analysis. The bibliometric method features two components. These are citation analysis and science mapping for research performance evaluation. Both can be obtained by the same network methods (Van Raan, 2014:19).

We can evaluate mapping studies that have been published until today in two ways: The first of these is mapping a specific topic, the domain of the cluster of topic, and the second is mapping all databases. Science mapping aims to find the dynamically changing structure of scientific knowledge and representations of intellectual bonds within the system (Small, 1997:275).

Web-based online bibliographic databases ISI, Web of Science, Scopus, CiteSeer, Google Scholar or NLM and MEDLINE or others are common data sources for bibliometric research (Cobo, 2015:43).

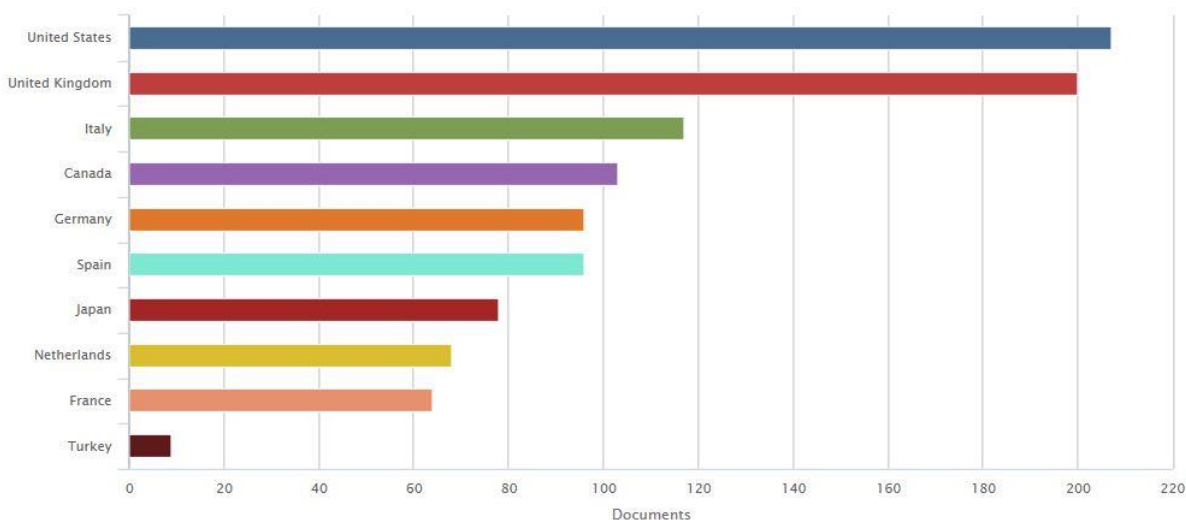
The research was carried out using science mapping analysis and the Science Mapping Analysis Software Tool (SciMAT) program was used for this analysis. This program was selected among data editing options because it is a science mapping program that can perform rich and diverse analysis methods alone (Cobo, 2012).

### 4. FINDINGS AND DISCUSSIONS

Within the scope of this research, the period of 1966-2016 was chosen as the time interval to be taken as basis in the analysis. According to the results of the inquiries made in the SCOPUS database according to the title and keywords of scientific publications, a total of 1,428 publications have been published throughout the world as of February 2017. A significant increase was observed in the research in the number of publications after 2007.

As can be seen in the following figure, the US ranks first with 207 publications, while the UK ranks second with 200 publications, and Italy ranks third with 113 publications. However, 144 publications were included in the "undefined" category by SCOPUS. Turkey is in the 31<sup>st</sup> place with 9 publications.

Figure 1: Numbers of Publications Based on Countries

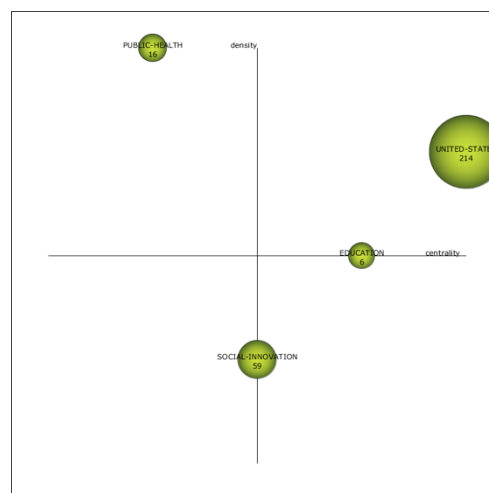
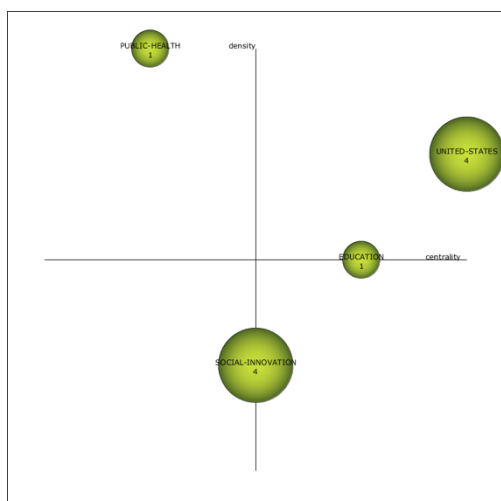


As a result of the analysis made with SciMAT, strategic diagrams were examined by periods. "Centrality" on the horizontal axis in the strategic diagram refers to the degree of strength of the related theme's relation with other themes or thematic areas. The relation strength increases towards the right direction on the horizontal axis while it decreases towards the left direction. The "density" on the vertical axis in the strategic diagram expresses the abundance of the number of scientific publications. The intensity of the theme, i.e. the frequency of work, increases upwards on the vertical axis while it decreases downwards. The themes in the upper left part of the diagram are the themes that have strong bonds in research field but have weak bonds with other thematic fields. The themes in this field, which have been studied hard and in which the specialization increased much, remained weak in establishing relations with other themes. The themes in the bottom left part of the diagram are either new emerging or disappearing themes. These themes are both poorly studied and weakly related to other thematic fields. The themes in the lower right part are the ones that are important for the development of the research field but have not been studied adequately. Finally, the themes in the upper right part of the diagram are the advanced themes in the center of the field with high concentration and high centralization (Monica et al, 2015: 2260).

Figure 2: Strategic Diagrams of the Period of 1966-1999

a) Strategic Diagram (Number of Documents)

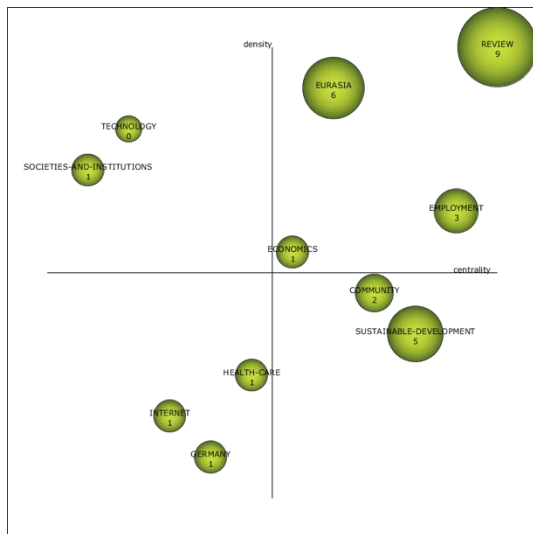
b) Strategic Diagram (Number of Citation)



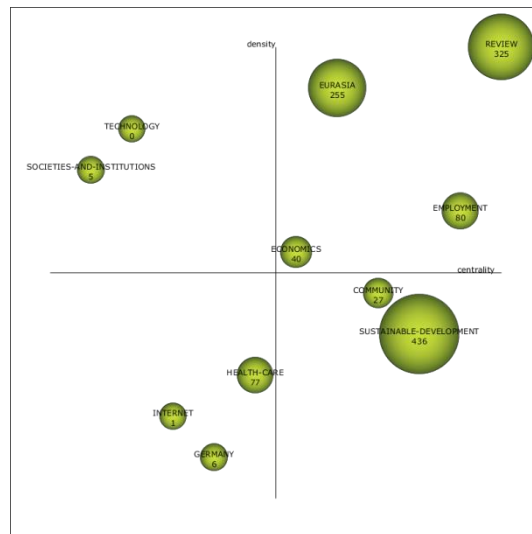
When the strategic diagrams obtained from the analysis of the social innovation studies between the years of 1966 and 1999 were examined, 4 themes came to the forefront. Two of these themes are engine themes and basic themes, and they appear as United States and Education themes. The theme of social innovation, on the other hand, emerges as a rising or disappearing theme. Public-health theme in this period has a strong but isolated structure.

Figure 3: Strategic Diagrams of the Period of 2000-2008

a) Strategic Diagram (Number of Documents)



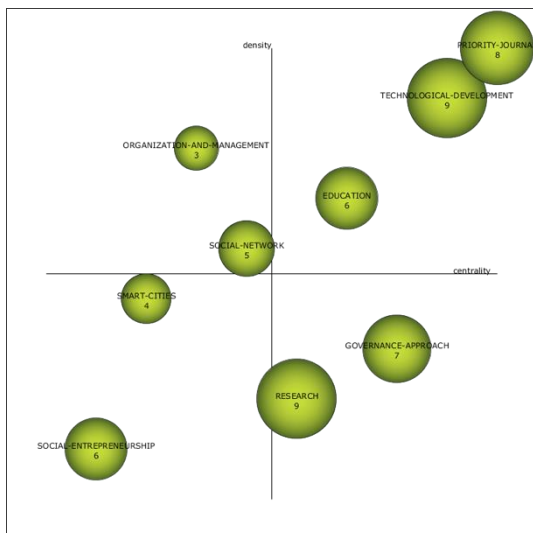
b) Strategic Diagram (Number of Citation)



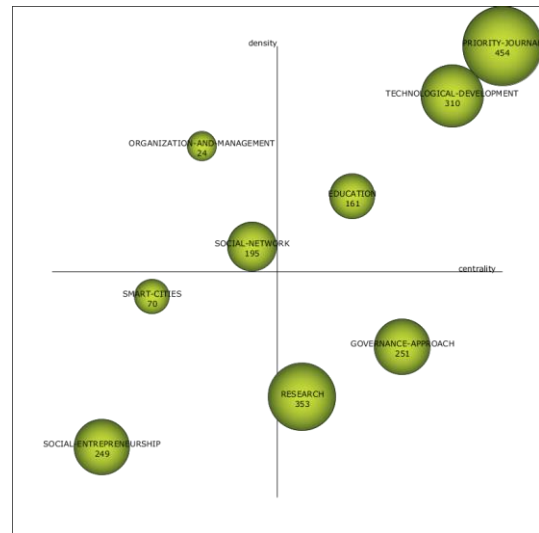
When the strategic diagrams obtained after the analysis of social innovation studies between 2000 and 2008 are examined, 11 themes came to the forefront. Six of these themes are engine themes and basic themes, and they are Review, Eurasia, Employment, Economics, Community, Sustainable-Development themes. Health-Care, Germany and Internet themes appear as rising or disappearing themes. Technology and societies-institutions themes in this period have strong but isolated structures.

Figure 4: Strategic Diagrams of the Period of 2009-2016

a) Strategic Diagram (Number of Documents)



b) Strategic Diagram (Number of Citation)



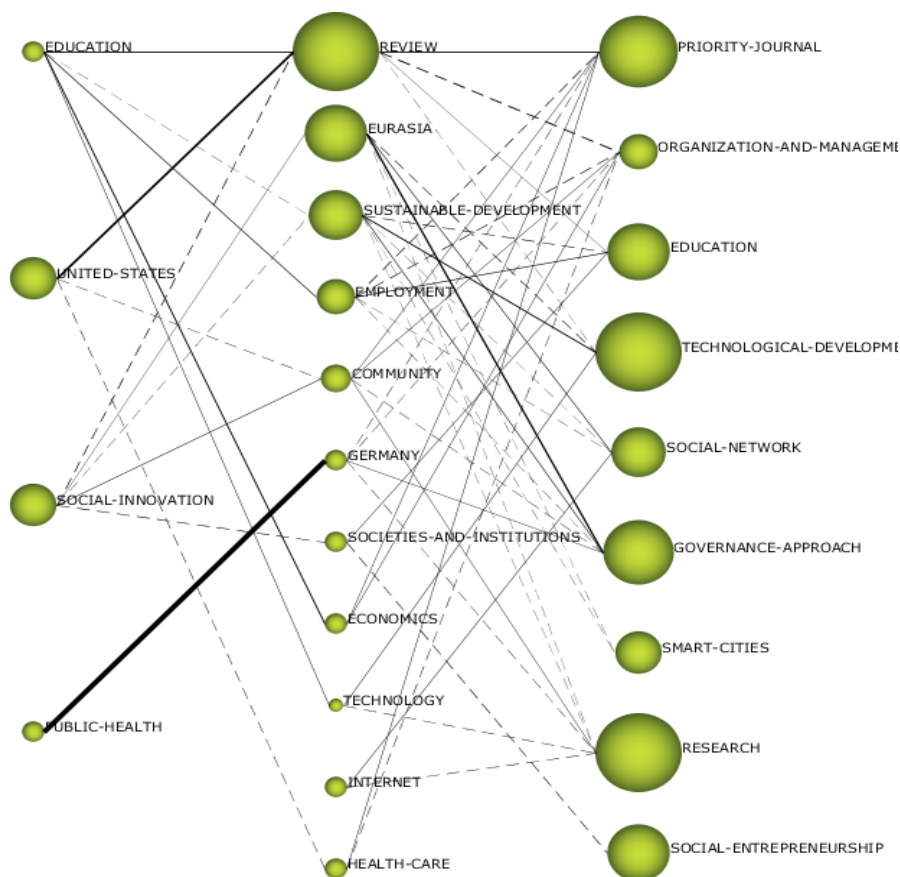
When we look at the strategic diagrams obtained from the analysis of social innovation studies between 2009 and 2016, 9 themes came to the forefront. Five of these themes are engine themes and basic themes and they are Priority- Journal, Technological-Development, Education, Governance-Approach and Research themes. Social-Entrepreneurship and Smart-Cities appear as rising or disappearing themes. The social-Network and Organization-Management themes in this period have strong but isolated structures.

An evolution map was developed in the research in order to see the evolution of social innovation studies on the basis of the period studied after the strategic diagrams. Evolution map reveals the periodical connections of themes to each other

that came to the forefront in each of the three (3) periods. The straight lines on this map show the thematic link and the dashed lines show that interlinked themes share common key words.

The evolution map of the period 1966-2016 is shown in Figure 5. Considering the number of themes by the periods during the period of 1966-2016, it was observed that 4 themes in the period of 1966-1999, 11 themes in the period of 2000-2008 and 9 themes in the period of 2009-2016 came to the forefront.

Figure 4: Thematic Evolution Map of the Social Innovation Field (1966-2016)



**5. CONCLUSION**

In this research, the conceptual structure and development of the concept of social innovation in the period of 1966-2016 was tried to be found by conducting science mapping analysis. The research was carried out using scientific publications for all fields in Scopus. In the analysis, it has been tried to identify the concepts and fields which are prominent based on the keywords of scientific publications. Science mapping analysis was conducted with the SciMAT program, and the themes highlighted by these keywords were determined during the examination period.

When we look at the period of 1966-2016 in general, it is observed that the thematic change emerged for the periods in which this study is based. This thematic change takes place, in general, by the prominence of some of the fields related to each other and the regression of others. The number of scientific social innovation publications made in Turkey and published in SCOPUS is 9. The number of these publications increased in the 2000s in line with the trend in the world, but this increase is not at a sufficient level. However, it is regarded necessary that publications made on this field be increased. In conclusion, bibliometric analysis and science mapping analysis can be used to understand the development of the concept of social innovation. In this context, the themes that emerge in terms of periods, the sub-themes that stand out or fall back from these themes, and the conceptual relationships of the themes both within the period and between the periods can be revealed.

## REFERENCES

- Adams, D., Hess, M., 2010, "Social innovation and why it has policy significance". *Econ. Labour Relat. Rev.* 21, 139–156.
- Cobo, M. J. ve López-Herrera, A. G. and Herrera-V.,E, 2015, "A Relational Database Model for Science Mapping Analysis", *Acta Polytechnica Hungarica* Vol. 12, No. 6, pp.43-62.
- Cobo, M.J., López-Herrera, A.G., Herrera-Viedma, E., & Herrera, F.2012, "SciMAT: A New Science Mapping Analysis Software Tool", *Journal Of The American Society For Information Science And Technology*, 63(8):1609–1630.
- Eren, H, 2010, "Üniversite Öğrencilerinin Sosyal Yenilikçilik Kapasitelerinin Teknolojik Yenilikçilik Eğilimlerine Etkisini Ölçmeye Yönelik Bir Model Önerisi," *Kara Harp Okulu Savunma Bilimleri Enstitüsü Teknoloji Yönetimi Ana Bilim Dalı, Yayınlanmamış Doktora Tezi*,
- Halaç, D. S., Eren H., Bulut Ç. 2014, "Sosyal Yenilikçilik: Bir Ölçek Geliştirme Çalışması", *H.Ü. İktisadi ve İdari Bilimler Fakültesi Dergisi*, 32(1), 165-190.
- Hernandez, Y. Cormican, K. 2016, "Towards the Effective Management of Social Innovation Projects: Insights from Project Management" *Procedia Computer Science* 100, pp.237 – 243
- Kazançoğlu İ. ve Dirsehan T., 2016, "Sosyal İnovasyon ile Sakin Şehirlerarasındaki İlişkinin Sosyal Girişimciler Açısından İncelenmesi: Seferihisar Örneği," *Ege Stratejik Araştırmalar Dergisi Cilt 7, Özel Sayı*, ss.135-161.
- Mónica L. A.; Jadraque Gago, Eulalia; María Dolores Martínez Aires,María Martínez Rojas, 2015, "Musculoskeletal Disorders Research Evolution In Construction: A Bibliometric Analysis," *19th International Congress on Project Management and Engineering Granada*, 15-17th July, 2257-2266.
- Mumford, M. D. 2002, "Social Innovation: Ten Cases From Benjamin Franklin," *Creativity Research Journal*, 14:2, 253-266, DOI: 10.1207/S15326934CRJ1402\_11
- Nicholls, A. Dees, J. G.2015, "International Encyclopedia of the Social & Behavioral Sciences" (Second Edition), Pages 355-361
- Özdemir F., Ar. İ. M. 2015, "Sosyal Yenilik Üzerine Bir Alan Araştırması",*Girişimcilik ve İnovasyon Yönetimi Dergisi Cilt/Volume 4 | Sayı/Issue 1 | Haziran/June* , ss.17-43.
- Saka, A. ve Igami M. 2007, "Mapping Modern Science Using Co-citation Analysis," *11th International Conference Information Visualization (IV'07)*, pp.1-6.
- Santana G. C. 2014, "Social innovation: Moving the field forward. A conceptual framework", *Technological Forecasting & Social Change* Vol.82, pp.42–51
- Schumpeter, J. A. 1942, "Capitalism, Socialism and Democracy", New York, Harper&Row.
- Simms, J.R. 2006, "Technical and Social Innovation Determinants of Behavior", *Systems Research & Behavioral Science*, Volume 23, Issue 3, pp. 383–393.
- Small, H. 1997, "Update On Science Mapping: Creating Large Document Spaces," *Scientometric*, Vol. 38, No. 2, 275-293.
- Şener S.; Saridoğan E., "The Effects Of Science-Technology-Innovation On Competitiveness And Economic Growth", *Procedia Social and Behavioral Sciences* 24 (2011) 815–828.
- Van Raan, A. F.J. (2014) *Advances In Bibliometric Analysis: Research Performance Assessment And Science Mapping*, <http://www.portlandpress.com/pp/books/online/wg87/087/0017/0870017.pdf> pp 17-28