

# A SCIENTOMETRIC REVIEW OF CITIZEN PARTICIPATION RESEARCH: WORLD TREND

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## **Abstract**

Nowadays, "Citizen Participation" (CP) has changed our societies and attracted a wide range of researchers, practitioners, and even politicians although few studies have outlined the global research trends in CP. This study conducts a scientometric review of global CP research in 1990-2017 based on the "Citizen Participation" keyword, through analyzing: i) the productivity of the countries, ii) the most cited publications, and iii) the co-author based on the countries, institutes, and authors. Totally 280 articles from the Science Direct (Elsevier) website were analyzed. The results illustrate that the Arnstein's article "A ladder of citizen participation" was the most cited publication and that the USA and the University of Kentucky were the most active country and university in the CP research field. In the case of co-author, the European articles with two or more authors from different countries were the most in comparison with others. Furthermore, the number of this kind of research has risen since 2000.

**Keywords:** Citizen Participation, Scientometric, Co-authors, Research trends

## **1. INTRODUCTION**

Being social is one of the distinctive key features of humans, so voluntary participation is a key difference between human beings and other creatures (Rahnavard, 2006). Although participation, in its general meaning, has long been linked with human life, its new definition in politics has begun after World War II.

In some developed countries, this type of participation began in the economic and industrial realm to share ownership with people and strengthen the industry and economy (Alavi Tabar, 2001), and as a result of this change, there has recently been a gradual shift in international development initiatives,

from top-down centrally-managed planning procedures to participatory, bottom-up, community-driven strategies (Wahid, et al., 2017). Furthermore, through various government attempts, citizen participation comes to be a critical part of governmental decision-making (Anuar & Saruwono, 2012), and there are debates over concepts and strategies leading the community to develop the democratic decision-making, and many accept participation as a human right. These notions were discussed after World War II (in Europe). At that time, some protests were made by many people who were marginalized by the government in social decision-making. On the other hand, governments did not provide opportunities for citizens to participate in social affairs and they were looking for a rapid and one-way development without any human values (Islami, Hanachi, & Kamelnia, 2009). At first, it is necessary to find a good definition of participation because a wide range of interpretations has been presented by researchers. For instance, in some essays it is put that participation is " For instance, in some researches, "participation" is defined as "any process by which a user helps to shape the environment used" (Alexander, Silverstein, Angel, Ishikawa, & Abrams, 1975), or as "the mutual and face-to-face intercourse of individuals based on their fundamental values." (Sanoff., 1992). All in all, as Sanoff mentioned "Participation means different things to different people and different things to the same people, depending on the issue, its timing, and the political setting in which it takes place" (Sanoff., 1992). Now, after some decades, the citizen participation is frequently recognized by scholars and practitioners as an active factor in the process of sustainable development. In theory, this belief that those affected by a decision have rights to involve in the decision-making process is the basis of citizen participation (Slocum & Thomas-Slayter, 1995). In practice, citizen participation has covered a wide variety of activities. Efficient citizen participation can help government officials and planners to achieve better planning alternatives (Konisranukul & Tuaycharoen, 2013).

Today, it is accepted that the participation has four basic features:

- Participation is beneficial per se.
- Participation is a source of knowledge and information about local conditions, needs, and attitudes and therefore improves the efficiency of decisions.
- Participation is a comprehensive and pluralist approach which reflects people's basic needs and users' values.
- Participation is a protection tool for the interests of citizens to ensure the provision of their needs often overlooked (Muzaffar, 2009).

For last decades, the citizen participation study has been one of the most common research subjects in many fields of study like computer studies, politics, urban and architectural design. Although there are a lot of researches in this case, the review articles are in the minority. So this article is an attempt to make a considerable review of citizen participation articles, but it is a scientometric one. Scientometrics is a

“quantitative study of science, communication in science, and science policy” (Hess, 1997). "It is centrally, but not only, concerned with the analysis of citations in the academic literature. In recent years it has come to play a major role in the measurement and evaluation of research performance" (Mingers & Leydesdorff, 2015)

This study is a review of scientific literature of "Citizen Participation" causing to stand out the research trends in this research field from 1900 to 2017.

## 2. METHOD

This study is an attempt to analyze all the researches of Elsevier website between the years 1990 and 2017- including journal articles, editorials, reviews, and conference papers to make a comprehensive study- which includes the "Citizen Participation" (CP) keyword in their abstracts, titles, and keywords. Furthermore, during finding articles, the search on the website was limited to journals with "Social sciences"; "Arts and Humanities"; "Decision Sciences"; "Environmental Sciences"; and "psychology" research area. The result was a collection of about 300 essays.

Figure 1 illustrates the number of articles published in the CP field of research over 29 years from 1990 to 2017. Overall, the publication of this subject increased over the period given, and it was in its minority between 1990 and 1995, so 1990 was the start point for analyzes in this research.



FIGURE 1 - THE NUMBER OF ARTICLES ON CP FROM 1990 TO 2017

Also, three kinds of bibliometric methods were applied:

1. Analyzing the productivity of countries in the CP research field between 1990 and 2017;

2. Identifying the most cited publications including books and articles without any time limitation. With this technique, the most popular resources of "citizen Participation" from the past to 2017 will become stood out;

3. Analyzing the co-author that indicates the author co-occurrences, country co-occurrences, and institution co-occurrences.

### 3. RESULTS AND DISCUSSIONS

#### 3.1. The Most Productive Countries, Universities, and Authors

Active countries and institutes in the CP research area can be recognized based on the investigation of the picked articles. As can be seen in the Figure 2, the USA is the most active country in this field and after that UK and Canada are the most productive countries in the CP subject between 1990 and 2017.

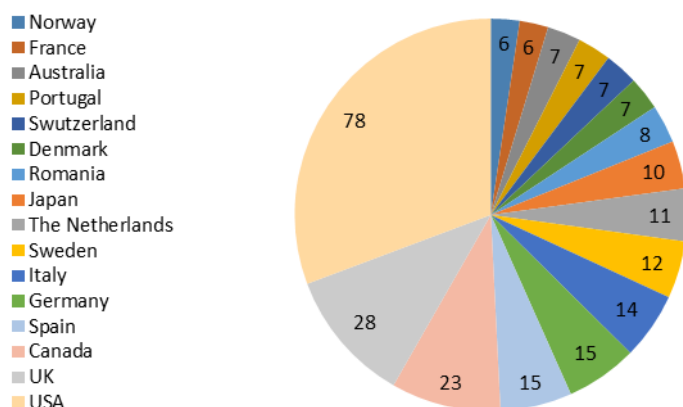


FIGURE 2 - THE 16 MOST PRODUCTIVE COUNTRIES IN THE CP FIELD RESEARCH BETWEEN 1990 AND 2017

Also, Table 1 shows ten most interested universities in CP research field between 1990 and 2017. Moreover, it illustrates that the University of Kentucky has reached the highest number of publications in this research field since 1990.

TABLE 1 - THE TOP 10 MOST PRODUCTIVE UNIVERSITIES IN PC RESEARCH FIELD FROM 1990

Institution	Country	Count	Percentage
University of Kentucky (Bryan, Jones, Allen, & Collins-Camargo, 2007) (Miller, Collins-Camargo, Jones, & Niu, 2017) (Levine, Hughes, Mather, & Yanarella, 2008) (Hawthorne, et al., 2015) (Collins-Camargo, Buckwalter, & Jones, 2016) (Jones, Litzelfelner, & Ford, 2003) (Bryan., Collins-Camargo, & Jones, 2011)	USA	7	2.5%
University of Washington (Dierwechter & Coffey, 2010) (Hall, Gilbertz, Anderson, & Ward, 2016; SUTTON & KEMP, 2002; JACKSON, 2000) (Steel & Weber, 2001) (Chatfield, Schöll, & Uuf BrajawidagdaAkemi Takeoka Chatfield a, 2013)	USA	4	1.42%
University of Louisville (Potter, 2000) (Miller, Collins-Camargo, Jones, & Niu, 2017) (Collins-Camargo, Buckwalter, & Jones, 2016) (Bryan., Collins-Camargo, & Jones, 2011)	USA	4	1.42%
Ryerson University (Ordóñez, Beckle, Duinker, & Sinclair, 2017) (Hachmann,	Canada	4	1.42%

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Institution	Country	Count	Percentage
Arsanjani, & Vaz, 2017) (Bailey & Ngwenyama, 2011) (Jami & Walsh, 2014)			
University of Helsinki (Primmer & Kyllonen, 2006) (Rosenstrom & Kyllonenb, 2007) (Escuder-Mollon, Esteller-Curto, Issakainen, Lubkina, & Lozanova, 2014) (Ahern, Cilliers, & Niemelä, 2014)	Finland	4	1.42%
Michigan State University (Jacoby, 2009) (Carmichael & McCole, 2014) (Niță, et al., 2018) (Primmer & Kyllonen, 2006)	USA	4	1.42%
University of California (DI'AZ-CAYEROS, MAGALONI, & RUIZ-EULER, 2014) (Weber, 2003) (Miyazawa, 2014)	USA	3	1.42%
Curtin University (Khan & Swapan, 2013) (Swapan., 2014) (Swapan ., 2016)	Australia	3	1.07%
University of Victoria (Frankish, Kwan, A.Ratner, Higgins, & Larsen, 2002) (Zhou, 2012) (Wood, 2013)	Canada	3	1.07%
Universiti Teknologi Malaysia (Wahid, et al., 2017, p. 1361) (Koorosh, Sza, & Ahad, 2015) (Sarvarzadeh & Abidin, 2012)	Malaysia	3	1.07%

Furthermore, the most productive author in this area, among the writers of the selected articles, is "Blake Jones" with five articles from University of Kentucky (Jones, Litzelfelner, & Ford, 2003; Bryan., Collins-Camargo, & Jones, 2011; Collins-Camargo, Buckwalter, & Jones, 2016; Miller, Collins-Camargo, Jones, & Niu, 2017; Bryan, Jones, Allen & Collins-Camargo, 2007), the second active author is Crystal Collins-Camargo [ (Bryan, Jones, Allen, & Collins-Camargo, 2007; Collins-Camargo, Buckwalter, & Jones, 2016; Bryan., Collins-Camargo, & Jones, 2011; Miller, Collins-Camargo, Jones, & Niu, 2017), and the third one is Mohammad Shahidul Hasan Swapan (Swapan ., 2016, Khan & Swapan, 2013, Swapan., 2014) (Table 2)

TABLE 2- THE TOP 16 MOST PRODUCTIVE AUTHORS IN PC RESEARCH FIELD FROM 1990

Author	Institution	Country	Count	Percentage
Blake Jones (Bryan, Jones, Allen, & Collins-Camargo, 2007) (Miller, Collins-Camargo, Jones, & Niu, 2017) (Collins-Camargo, Buckwalter, & Jones, 2016) (Jones, Litzelfelner, & Ford, 2003) (Bryan., Collins-Camargo, & Jones, 2011)	University of Kentucky	USA	5	1.78%
Crystal Collins-Camargo (Bryan, Jones, Allen, & Collins-Camargo, 2007) (Miller, Collins-Camargo, Jones, & Niu, 2017) (Collins-Camargo, Buckwalter, & Jones, 2016) (Bryan., Collins-Camargo, & Jones, 2011)	University of Louisville University of Kentucky	USA	4	1.42%
Mohammad Shahidul Hasan Swapan (Khan & Swapan, 2013) (Swapan., 2014) (Swapan ., 2016)	Curtin University	Australia	3	1.07%
Valerie Bryan (Bryan, Jones, Allen, & Collins-Camargo, 2007) (Bryan., Collins-Camargo, & Jones, 2011)	University of South Alabama	USA	2	0.71%
Ana-Maria Branea (Radoslav, Branea, & Găman) (Izvercianu, Șeran, & Branea, 2014)	Politehnica University of Timișoara	Romania	2	0.71%
Alan Diduck (Diduck, 1995) (Sinclair & Diduck, 2017)	University of Winnipeg	Canada	2	0.71%
Julia Abelson (Lehoux, Daudelin, & Abelson, 2012) (Litva, et al., 2002)	McMaster University	Canada	2	0.71%
Jacek Kotus (Kotus, 2013) (Kotus. & Sowada, 2017)	Adam Mickiewicz University	Poland	2	0.71%
Simo Kyllonen (Rosenstrom & Kyllonenb, 2007) (Primmer & Kyllonen, 2006)	University of Helsinki	Finland	2	0.71%
Adegboyega Ojo (Porwol, Ojo, & Breslin,	National University of Ireland	Ireland	2	0.71%

Author	Institution	Country	Count	Percentage
2016) (Porwol., Ojo, & Breslin, 2016)	Galway			
Lukasz Porwol (Porwol., Ojo, & Breslin, 2016) (Porwol, Ojo, & Breslin, 2016)	National University of Ireland Galway	Ireland	2	0.71%
Ortwin Renn (Schweizer, et al., 2016) (Schroeter, Scheel, Renn, & Schweizer)	University of Stuttgart	Germany	2	0.71%
Olivier Rousse (Rousse & Sevi, 2013) (Rousse, 2008)	Université Grenoble Alpes University of Montpellier I	France	2	0.71%
Oliver Scheel (Schweizer, et al., 2016) (Schroeter, Scheel, Renn, & Schweizer)	University of Stuttgart	Germany	2	0.71%
Pia-Johanna Schweizer (Schweizer, et al., 2016) (Schroeter, Scheel, Renn, & Schweizer)	University of Stuttgart	Germany	2	0.71%
John G. Breslin (Porwol, Ojo, & Breslin, 2016) (Porwol., Ojo, & Breslin, 2016)	National University of Ireland Galway	Ireland	2	0.71%

### 3.2. The Most Popular Publications

The ten most cited publications were stood out by analyzing the resources used in articles (Table 3). According to the table 3, the Arnstein's article named "A ladder of citizen participation" (Arnstein, 1969) is the most popular essay with a considerable difference in the count with others. After this publication "Voice and Equality: Civic Voluntarism in American Politics" (Verba, Schlozman, & Brady, 1995), "Participation and democratic theory" (Pateman, 1970), "Public participation methods: A framework for evaluation" (Rowe & Frewer, 2000), "Varieties of participation in complex governance" (Fung A. , 2006), "Deepening democracy: innovations in empowered participatory governance" (Fung A. , 2001), "Collaborative planning: Shaping places in fragmented societies" (Healey, 1997), "The deliberative practitioner: Encouraging participatory planning processes" (Forester, 1999), "Evaluating public-participation exercises: a Research agenda" (Rowe & Frewer, 2004), and "The Logic of Collective Action: Public Goods and the Theory of Groups" (Olson, 1971) are other most cited publications.

TABLE 3- TOP TEN MOST CITED PUBLICATIONS IN PC RESEARCH FIELD -

Author	Article name	Year	Journal name/publisher	Count	Percentage
Arnstein, S.R.	A ladder of citizen participation	1969	Journal of the American Institute of Planners, 35(4), 216-224.	55	19.50%
Verba, S., Schlozman, K. L., Brady, H. E.	Voice and Equality: Civic Voluntarism in American Politics	1995	Harvard University Press	19	6.73%
Pateman, C.	Participation and democratic theory	1970	Cambridge University Press	12	4.25%
Rowe, G., Frewer, L.J	Public participation methods: A framework for evaluation	2000	Science, Technology, and Human Values 25 (1), 3-29	11	3.90%
Fung, A.	Varieties of participation in complex governance	2006	Public Adm. Rev. 66, 66-75	10	3.54%
Fung, A., Wright Erik, O.	Deepening democracy: innovations in empowered participatory governance	2001	Polit. Soc. 29 (1), 5e41	10	3.54%
Healey, P.	Collaborative planning: Shaping places in fragmented societies	1997	Macmillan	9	3.19%
Forester, J. F.	The deliberative practitioner:	1999	MIT Press	8	2.83%

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Author	Article name	Year	Journal name/publisher	Count	Percentage
	Encouraging participatory planning processes				
Rowe, G., Frewer, L.J.	Evaluating public-participation exercises: a Research agenda	2004	Technol. Hum. Values 29 (4), 512-556	8	2.83%
Olson, M.	The Logic of Collective Action: Public Goods and the Theory of Groups	1971	Harvard University Press	8	2.83%

Besides, with extensive evaluation of table above, other information can be gained. According to this table, the most cited writers are as Figure 3. In that, Fung with two popular publications has been the most cited author after Arnstein from 1990.

Figure 4 indicates that most of the same resources cited were written between 2000 and 2005. Also, it represents that the popular resources grew rapidly between 1971 and 2005. After 2005, there is a significant drop in the number of popular articles in CP field.

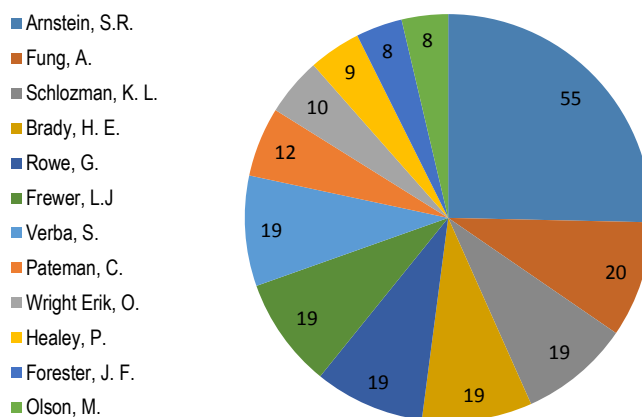


FIGURE 3 - THE MOST CITED AUTHORS IN THE CP ARTICLES BETWEEN 1990 AND 2017-

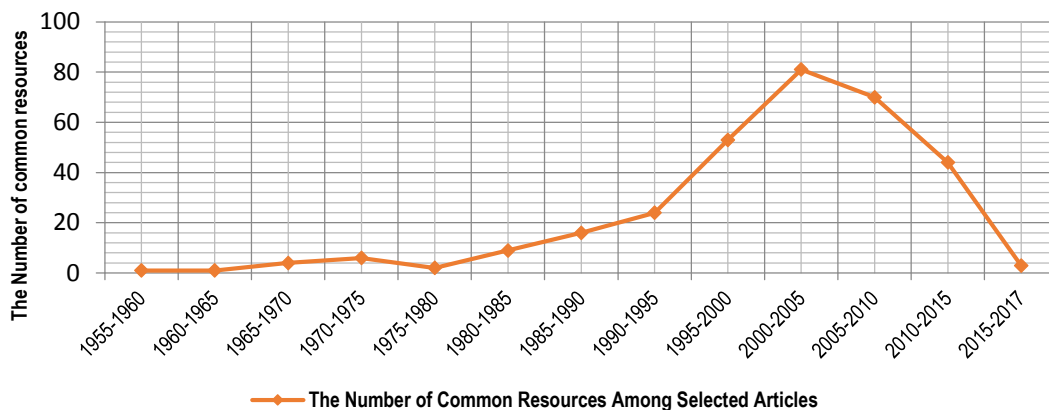


FIGURE 4 - THE NUMBER OF COMMON RESOURCES AMONG SELECTED ARTICLES FROM 1990 TO 2017

In the next statistical information, the popularity of these ten resources is estimated based on the countries of the articles using these publications. Table 4 explains that most of these popular publications are the main resources of CP researches in the USA, and some of them are the most famous resources in other countries. For example in the UK, resource 1, 3, 5, 6 7, and 9 are used, and resource 1 is the most significant resource in this country.

TABLE 4- THE POPULARITY OF THE TOP 10 MOST CITED ARTICLES IN DIFFERENT COUNTRIES-

Popular Resources									
RESOURCE-5		RESOURCE-4		RESOURCE-3		RESOURCE-2		RESOURCE-1	
Country									
45.45%	USA	18.18%	USA	50.00%	USA	45%	USA	21.31%	USA
18.18%	Singapore	9.09%	Cyprus	14.28%	Canada	10%	Canada	11.47%	UK
9.09%	Switzerland	9.09%	Belgium	14.28%	UK	5%	Chia	8.19%	Australia
9.09%	Sweden	9.09%	Canada	7.14%	Turkey	5%	Germany	8.19%	Canada
9.09%	The Netherlands	9.09%	Spain	7.14%	South Africa	5%	Portugal	6.55%	Poland
9.09%	UK	9.09%	Germany	7.14%	Finland	5%	The Netherlands	6.55%	Singapore
		9.09%	Malaysia			5%	Spain	4.91%	Finland
		9.09%	Iran			5%	India	4.91%	Sweden
		9.09%	Italy			5%	Czech Republic	3.27%	Italy
		9.09%	Poland			5%	Sweden	3.27%	Hong Kong
						5%	Nigeria	3.27%	Portugal
								3.27%	The Netherlands
								3.27%	Malaysia
								1.63%	China
								1.63%	Israel
								1.63%	Chile
								1.63%	Switzerland
								1.63%	Turkey
								1.63%	Germany
								1.63%	Romania



		Country																			
RESOURCE-10	66.66%	USA																			
	11.11%	India																			
RESOURCE-9	11.11%	Germany																			
	11.11%	China																			
RESOURCE-8	22.22%	USA																			
	22.22%	Germany																			
RESOURCE-7	40%	UK																			
	10%	Sweden																			
RESOURCE-6	50%	USA																			
	25%	UK																			

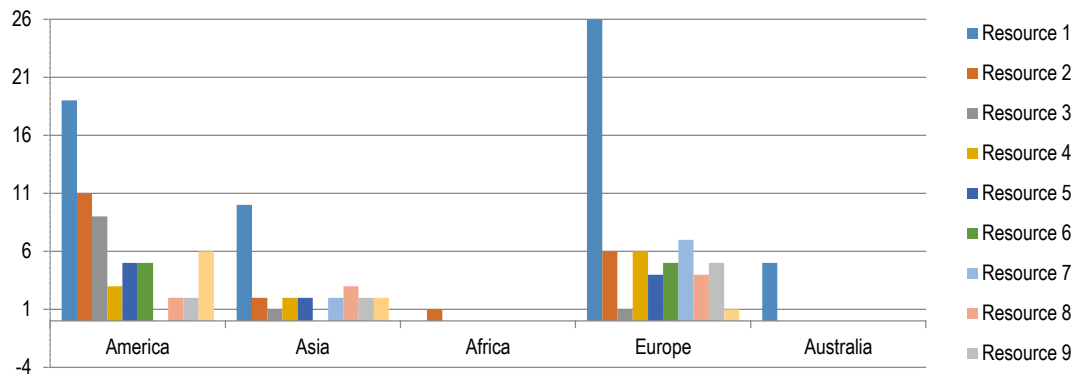


FIGURE 5 - THE POPULARITY OF THE TOP 10 RESOURCES IN DIFFERENT CONTINENTS FROM 1990

Figure 5 is an abstract of the table on the basis of continents.

### 3. Co-Author Analysis

In this part, the relationship between different countries, institutes, and authors is analyzed (Fig. 7, 8, 9).

In each figure, the nodes are representative of:

- Figure 7- Each node represents a country.
- Figure 8- Each node shows an institute.
- Figure 9- Each node indicates an author.

The colors of links correspond to different time spans from 1990 to 2017. (Figure 6)

According to the Figure 7, there is no evidence co-authorship between 1990 and 2000, plus the co-author articles have increased from 2010. Furthermore, Europe has the most co-author articles in the CP field research.

Figure 6 is a guide diagram of the time span for the figure 7, 8, and 9.



FIGURE 6 - THE GUIDE COLOR DIAGRAM OF THE TIME SPAN FOR THE FIGURE 6, 7, AND 8

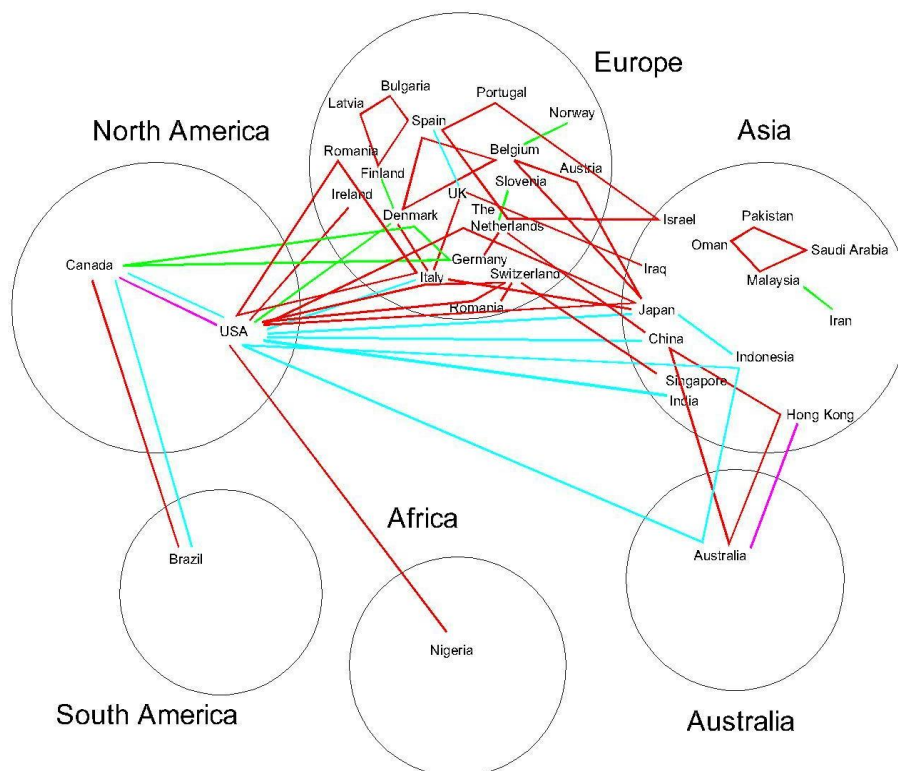


FIGURE 7 - THE CO-AUTHOR RELATION AMONG COUNTRIES

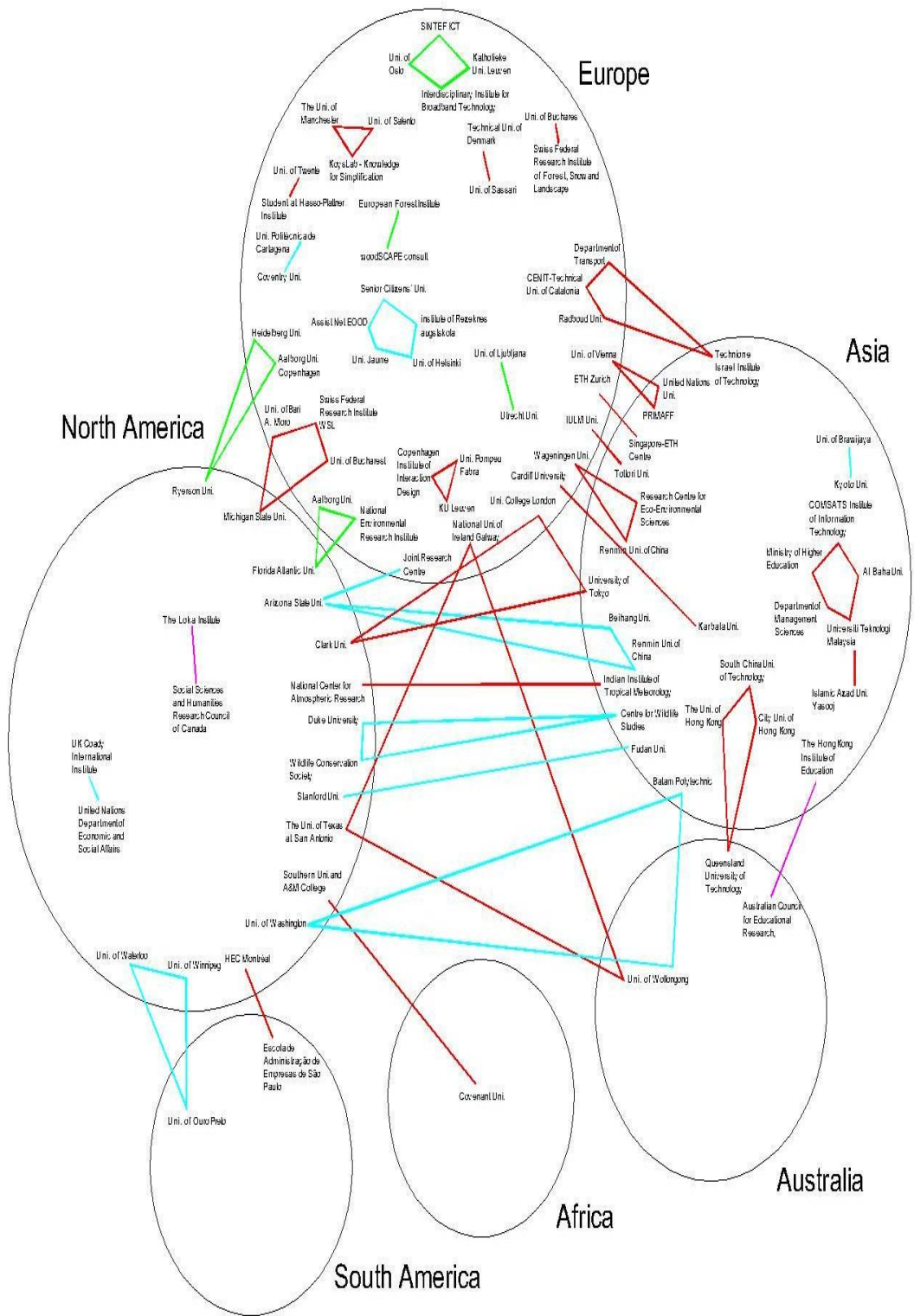


FIGURE 8- THE CO-AUTHOR RELATION AMONG INSTITUTES

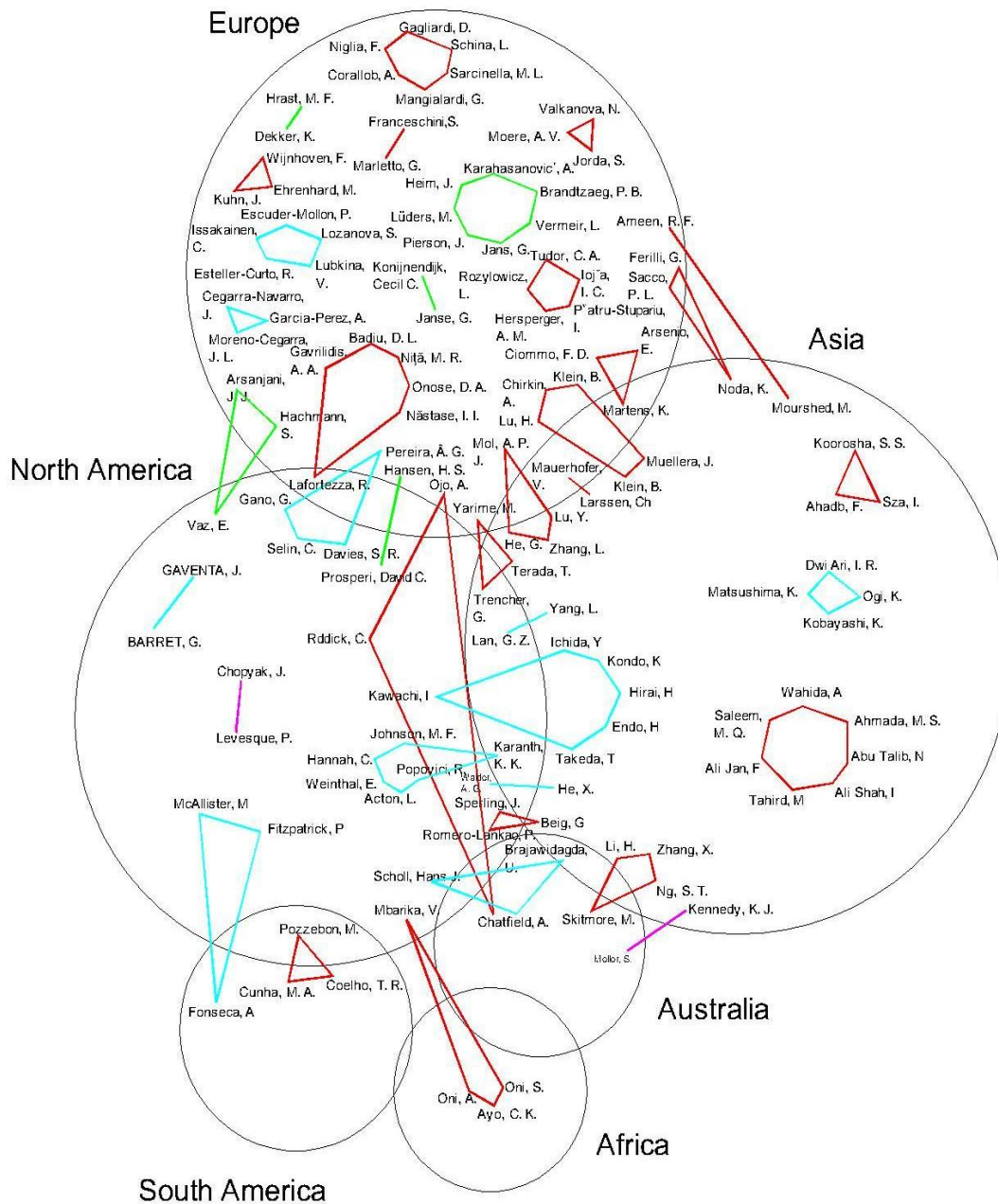


FIGURE 9 - THE CO-AUTHOR RELATION AMONG AUTHORS

#### 4. CONCLUSIONS

This study is a scientometric review on "Citizen Participation" to reveal the status and trends of global CP research. An analysis of 280 articles from Elsevier website was done, and as a result of ten most popular publications and co-authorship among the countries, institutes, and authors were identified.

According to the analysis, USA, UK, and Canada were the most active countries in CP field. Also, Blake Jones - from the University of Kentucky- and Crystal Collins-Camargo - from University of Louisville and the University of Kentucky-, and Mohammad Shahidul Hasan Swapan -from Curtin University- had the most articles.

Although the 3 most cited publications in this field were "A ladder of citizen participation" by "S. R. Arnstein", "Voice and Equality: Civic Voluntarism in American Politics" by "S. Verba et al", and "Participation and democratic theory" by "C. Pateman", the most cited authors were "S. R. Arnstein", "A. Fung" –with 2 essays-, and "S. Verba", "K. L. Schlozman", "H. E. Brady".

Furthermore, based on the co-author analysis the most co-author articles among different countries was in Europe, and after that North America stood in the second place.

All in all, this study provides helpful information for researchers and practitioners to find out the most popular resources and the most active centers in the CP research field.

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