



Organizational Citizenship Behavior (OCB): Reflecting Research Performance and Knowledge Foundation Themes through Intellectual and Influence Structure from Bibliometric Analysis

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Abstract

Organizational Citizenship Behavior (OCB) is an emergent theme in behavioral research. Till date no any review has offered a panoramic analysis of research in OCB. To narrow the gap of research in OCB, the reviewer provides a bibliometric analysis. To understand the intellectual, and influence structure, the reviewers provide a quantitative scanning of publications to reflect the research performance (Publication activity, top authors, journals, institutions, countries, articles, and references) through performance analysis and knowledge foundation (thematic-similarities based on co-citation and co-word analysis) utilizing the Scopus database, a complete 1625 published papers, from 1991-17 December 2022 were fetched. VOS viewer 1.6.18 and Biblioshiny via R studio 4.2.2 software tools were used for constructing and visualizing scientific landscapes, thematic networks, and thematic maps. Reviewers further identify three overarching thematic clusters (Organizational Citizenship Behavior, Citizenship, and Organizational Framework) based on keyword plus by identifying two thematic similarities (based on co-cited references), seven (based on co-cited sources), and five (based on co-cited authors) specific clusters of research in OCB. The systematic mapping study in thematic research in OCB aids in the identification of transition in research interests and provides understanding, and vision toward upcoming research directions. Our findings offer an evaluation of the OCB research.

Keywords: Bibliometric analysis, Organizational Citizenship Behavior, VOS viewer, Biblioshiny via R studio, thematic similarities.

1. Introduction

Organizational Citizenship Behavior (OCB) is an emergent theme in behavioral research. As we know that the sustainable green behavior for the sustainable green environment is need of today and future business organizations. For the last three decades, People have shown a lot of interest in the OCB research (Podsakoff et al., 2014). In this day and age, when organizational business environments are swiftly changing, as well as the volatile labor market, which poses difficulties for all the researchers as well as organizational supervisors, each and everybody's behaviors and interpersonal communications prevailing in the place of work are both examined (Gong et al., 2021). OCB could be a significant aspect of attaining a competitive advantage. For this, it is essential to give minute observation of organizational citizenship behaviors (OCB) which is organizational members' unprompted and cooperative behavior, (Mackenzie et al., 2011). OCB Posses a significant factor in the achievement, growth, efficiency, and victory of each organization by introducing new dynamics into the workplace, fostering interpersonal connections within the organization, and influencing employee behavior concerning organizational functioning and outcomes., (Coldwell and

Callaghan., 2014). Over fifty years ago; (Katz 1964) put forward the importance of unsolicited and voluntary behaviors which are required for organizational efficiency instead of their lack of Clear location standards. Researcher described such additions as, “OCB” in an experiential study on the precedents and essence of alike behavior, (Smith et al., 1983). After some years, based on (Katz's idea of OCB 1964), (Organ 1988) defines Organizational citizenship behavior as discretionary behaviors of individuals which are not recognized directly or formally by an official explicit bounty system. Overall, it facilitates the dynamic working and results of an organization. Some pertinent approaches from OCB have been recognized and studied in further studies, including empathetic behavior (Guiling et al., 2022), Green environmental behavior (Algarni et al., 2022), Civic OCB (Guiling et al., 2022), OCB spontaneity (Guiling et al., 2022), extra-role behavior (Guiling et al., 2022), and Furthermore, authors are interested in studying the literature and concept of OCB (Tambe & Meera., 2014). Extra-role behavior for employees of all organizations is continuously enhancing and becoming vital for each organization, (Majeed and Jamshed .,2021). (Kim & Park., 2019) Therefore, understanding and knowing how OCB works within an organization is an important area of research. Many publications consist of information and findings from systematic literature and well-organized reviews of research in OCB (Carpenter et al., 2014).

As existing works of literature concentrated on a single nation or industry. Consequently, a systematic literature review and its analysis from an international context are likely to capture new developments and direct research attention to some specific issues of OCB in all organizations. Examining prevailing expertise in a particular field permits us to understand problems and many important theoretical approaches, and to know about disparities, gaps, and significant opportunities to grab for future progress. Till date no any review has offered a panoramic analysis of research in OCB. To narrow the gap of research in OCB, the reviewer provides a bibliometric analysis..

The current study focuses on examining organizational citizenship behavior while also conducting additional research analyses and subject evaluations. The bibliometric study aims to seek the responses to the below-said research questions:

RQ1. How are trends in publications reflected in OCB research?

RQ2. Who are the uppermost authors, institutions, and research countries in OCB?

RQ3. Which are the uppermost sources in OCB research?

RQ4. Which are the uppermost research papers in OCB?

RQ5. Which are the most important research references in OCB?

RQ6. What thematic clusters can be identified using co-citation analysis?

RQ7. What thematic clusters of research in OCB can be identified using Co-word network analysis?

Objectives of the study

The following study goals are derived from the aforementioned research questions:

1. To analyze the reflection of research performance and knowledge foundation themes of research in Organizational Citizenship Behavior (OCB) through intellectual and influence structure and implementation in diverse nations.

2. To elicit the structural aspect in the field of study and derivative synthesis of knowledge.

2. Materials and Methods

2.1 Selecting techniques for bibliometric analysis.

Our study aims to understand all the OCB literature, which has been lying in the Scopus database for the last three decades. To understand the entire concept of research in OCB, techniques of bibliometric analysis have been used because it provides a comprehensive view of research in OCB by using performance analysis, science mapping, and network analysis. The technique of bibliometric analysis reflects research performance (Number of papers Published, journals, articles, sources, institutions, countries, and funding sources) of a particular domain, scientific mapping (Analysis of citations, co-citations, co-words, co-authorships, and bibliographic coupling), and network analysis via visualization, network metrics, and clustering of various thematic similarities and thematic changes. (Donthu et al., 2021).

To understand the intellectual, and influence structure, we provide a quantitative scanning of publications to reflect the research performance (Publication activity, top authors, journals, institutions, countries, articles, and references) through performance analysis, (Donthu et al. 2021), and knowledge foundation (thematic-similarities based on co-citation and co-word analysis) utilizing the Scopus database, a complete 1625 published papers, from 1991-17 December 2022 was fetched. VOS viewer 1.6.18 and Biblioshiny via R studio 4.2.2 software tools were used for constructing and visualizing scientific landscapes, thematic networks, and thematic maps.

2.2 Search literature utilizing the Scopus database

We utilized the Scopus database for the comprehensive coverage of literature on OCB. Scopus' search was restricted to research published between 1991 and December 17th, 2022. The following keywords were used in the search terms: "organizational citizenship behavior", and "citizenship behavior".

PRISMA guidelines and procedures (Moher et al., 2009) have been followed for the identification of research in the OCB domain for the systematic literature review (SLR) of the study. We utilized the Scopus database for the search of various studies on OCB, and the following parameters were used:

Inclusion: From 1991 to (17th December 2022).

Inclusion: keywords: "*organizational citizenship behavior*" and "*citizenship behavior*".

Inclusion: All types of documents are taken.

Inclusion: The Subject area is limited to business management and accounting.

Inclusion: Language limited to English.

Inclusion: Themes are limited to "*Organizational Citizenship Behavior*" (OCB) and "*Citizenship Behavior*" (CB).

A Scopus search for "*Organizational Citizenship Behavior*" (OCB) and "*Citizenship behavior*" (CB). Titles, and Abstracts, and Author keywords yielded 4,596 results. Then, based on eligibility, the search is restricted to English-language publications on business management and accounting within the theme of OCB and CB, and as a consequence, 2971 unrelated items have been removed using Scopus criteria. Finally, this bibliometric analysis was limited to the 1625 eligible records.

3. Results

3.1. Reflection of research performance in OCB through Performance analysis

3.1.1. (RQ1) Reflection of Publication trends in OCB research.

Figure 1 depicted the research publication trends in the field of OCB, where the total number of documents and the year of publication are plotted. This shows that OCB research is not new, having occurred since 1991. It also reflects the progressive growth in the studies of OCB publications from 1991 to the 17th of December, 2022. (31 years). As of 2011, there had been a considerable increase in publications and research interest in OCB. The Scopus Database contains 4596 studies on the OCB from 1991 to the 17th of December, 2022. From 2011 until the present, it is clear that OCB publications have gradually increased. Before 2011, the annual publication was less than 100. However, beginning in 2011, the number of publications increased rapidly, and it began to rise again in 2014. It's important to note that since 2018, OCB research interest has grown significantly. 2022 was the most prolific year with 185 articles. Interest may continue to increase in the future.

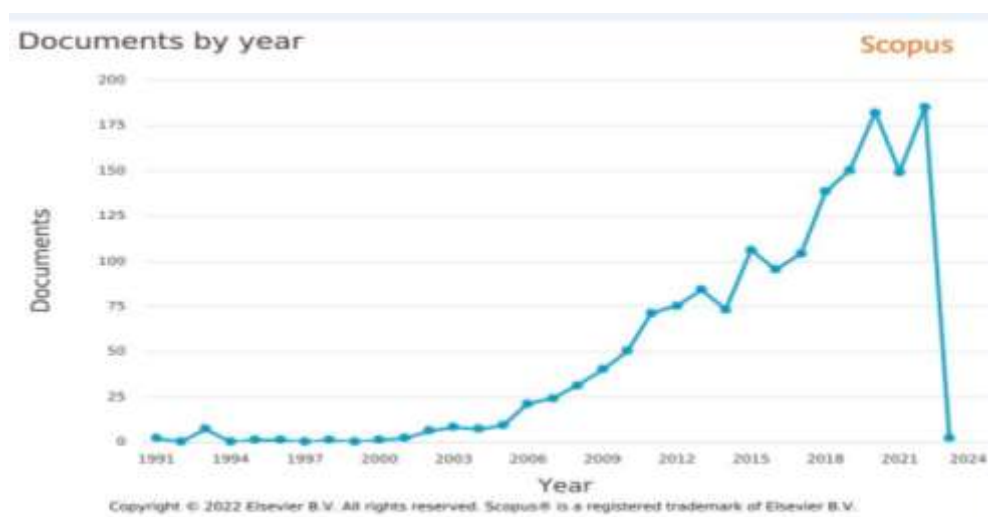


Figure 1: Visualization of documents per year

Source: Scopus database.

3.1.2. (RQ2) Twenty uppermost authors, institutions, and research nations of OCB.

Table 1 shows the uppermost authors of research in OCB, as well as their institutions and nations at the time of their authorship. With 702 citations, Boiral o. has emerged as the uppermost compelling and persuasive author of research in OCB, followed by Newman a. with 638 citations. With 12 highest counts of publications Ma e. is the most prolific author. The most compelling institutions, based on highest total number of citations, are the University of Alabama, United States and University of Haifa, Israel, with 520 and 295 citations, respectively. The University of Alabama, United States, is the uppermost prolific institution in terms of publications, with 06 publications. Among nations, the United States has made the uppermost persuasive contributions to OCB research (481 publications), as well as the most citations (18274).

Table 1
Twenty uppermost authors, institutions, and research nations of OCB .

Sr. No.	TC	AU	TP	TC	Institution	TP	TC	Nation	TP
1	702	Boiral o.	6	520	The University of Alabama, United States	6	18274	United States	481
2	638	Newman a.	7	295	University of Haifa, Israel	4	4717	China	202
3	626	Johnson r.e.	8	163	Monash University, Australia	3	4580	Canada	112
4	580	Bolino m.c.	9	160	DePaul University, United States	3	3745	Australia	95
5	551	Shin y.	5	156	Griffith University, Australia	5	3702	United Kingdom	107
6	507	Tremblay m.	11	154	The University of Michigan, United States	3	2488	Hong kong	59
7	504	Paillé p.	8	133	China Europe international business school, china	3	2423	Taiwan	77
8	459	Bachrach d.g.	9	127	University of Amsterdam, Netherlands	4	2285	South Korea	70
9	426	Wong y.-t.	7	125	Hong Kong Baptist University, Hong Kong	3	1807	Netherlands	47
10	420	Cohen a.	9	121	Clemson University, United States	4	1317	India	127
11	410	Wong c.-s.	7	119	Erasmus University, Netherlands	3	1247	Israel	28
12	399	Ngo h.-y.	5	119	Ku Leuven, Belgium	3	1123	Turkey	42
13	365	Wang h.	5	117	Tongji university, china	3	1094	Germany	38
14	271	Raja u.	5	115	The University of Macau, Macau	3	1034	Pakistan	52
15	260	Zhang y.	11	109	Australian national university, Australia	4	979	Spain	40
16	241	Zhang h.	6	106	Lumsa university, Italy	3	927	Switzerland	17
17	203	Li n.	5	99	Renmin university of china, china	5	681	Belgium	30
18	167	Ma e.	12	98	Drexel university,	3	630	Italy	31

					united states				
19	159	De Clercq d.	8	98	University of new south Wales, Australia	3	606	Malaysia	83
20	158	Lester s.w.	5	94	Baylor university, united states	3	584	France	28

Note(s): TC - Total number of Citations, AU-Authors, TP - Total publication. OCB research includes (i.e., author (Writer), institution, and nation) appears as per highest citations in this table.

3.1.3. (RQ3) Twenty uppermost sources of OCB research.

Table 2 lists the twenty uppermost journals which are having publications in the field of OCB research. With 3614 and 3090 citations, respectively, the Journal of business ethics is the uppermost persuasive source and the second uppermost persuasive source is the Journal of management in terms of the highest citations. With 31 h, 53 g, and 1.55 m indexes, respectively, the journal of business ethics is the uppermost persuasive source. However, “journal of business ethics” is at the uppermost, and “international journal of human resource management” is at the second most prolific source in terms of highest publications, with 53 and 51 publications, respectively.

Table 2

Twenty uppermost sources of OCB research.

Sr. No.	Source	TC	h	g	m	TP
1	“Journal of business ethics”	3614	31	53	1.55	53
2	“Journal of management”	3090	18	22	1	22
3	“Leadership Quarterly”	2420	23	24	1.211	24
4	“International journal of human resource management”	2123	23	46	1.045	51
5	“Journal of business research”	1638	18	26	0.818	26
6	“International journal of hospitality management”	1630	16	24	1	24
7	“Journal of organizational behavior”	1370	15	21	1.25	21
8	“Journal of vocational behavior”	1331	15	24	0.75	24
9	“Journal of business and psychology”	1251	19	35	0.905	36
10	“Human relations”	1177	16	22	0.5	22
11	“Employee responsibilities and rights journal”	1059	9	14	0.281	14
12	“Group and organization management”	1042	12	22	0.632	22
13	“Organizational behavior and human decision processes”	936	12	14	0.706	14
14	“Tourism management”	770	11	14	1.1	14
15	“International journal of contemporary hospitality management”	758	14	18	1.273	18
16	“Personnel review”	637	14	24	1.273	39
17	“European journal of work and organizational psychology”	536	13	20	0.929	20

18	<i>“Journal of managerial psychology”</i>	452	14	21	1	23
19	<i>“Human resource management”</i>	409	10	12	0.769	12
20	<i>“Journal of leadership and organizational studies”</i>	404	10	13	0.667	13

Note(s): TC-Total Citations. TP-Total Publications. h- h index, g-g index, m- m index. The sources are listed in this table by the total number of citations.

3.1.4. (RQ4) Twenty uppermost articles on OCB research.

Table 3 shows the most-cited publications in OCB research. The uppermost compelling and persuasive articles in Scopus having 559 citations, are by Lavelle J.J et al., (2007), followed by Groth M. (2005) with 471 citations.

(Lavelle et al., 2007) Contemporary trends in the literature on organizational justice, social interactions, and OCB show that workers have different perceptions of multiple focal points, such as organizations, supervisors, and colleagues, and have different behavior and attitudes toward them. However, this multifocal development is independent of each other. This overview brings together each of these publications to fully conceptualize the employees' experience. The writers reviewed multifocal research. They organized various theories on justice, civic behavior, and social interactions. Writers develop a "goal similarity" model that provides the theoretical structure for conceptualizing and synthesizing multifocal research. They have also provided suggestions for future multifocal studies.

(Groth, 2005) Study on OCB extends to the realm of customers by investigating the significance of customer behavior in the provision of Internet services.

Further examination of the top-cited publications on OCB research reflects research in fields of engagement, perceived HRM practices, and employees' behavior (Alfes K. et al., 2013), psychological capital (Avey J.b. et al., 2010), organizational citizenship behavior (Graham J.W. 1991), Ethical leadership (Graham J.W. 1991), and Ethical leadership (Graham J.W. 1991) (Kalshoven K. et al. 2011). Support from the organization and psychological empowerment (Chiang C.-F. et al., 2012).

Table 3

Twenty uppermost articles on OCB research.

Sr. No.	AU	Year	Title	TC
1	Lavelle J.j., et al.	2007	<i>“Taking a multi-foci approach to the study of justice, social exchange, and citizenship behavior: the target similarity model”</i>	559
2	Groth M.	2005	<i>“Customers as good soldiers: examining citizenship behaviors in internet service deliveries”</i>	471
3	Alfes K. et al.	2013	<i>“The link between perceived human resource management practices, engagement and employee behavior: a moderated mediation model”</i>	398
4	Avey J.B et al.	2010	<i>“The additive value of positive psychological</i>	368

			<i>capital in predicting work attitudes and behaviors”</i>	
5	Graham J.W.	1991	<i>“An essay on organizational citizenship behavior”</i>	350
6	Kalshoven K. et al.	2011	<i>“Ethical leadership at work questionnaire (ELW): development and validation of a multidimensional measure”</i>	338
7	Chiang C.-F et al.	2012	<i>“The impacts of perceived organizational support and psychological empowerment on job performance: the mediating effects of organizational citizenship behavior”</i>	328
8	ParÃ© G., Tremblay M.	2007	<i>“The influence of high-involvement human resources practices, procedural justice, organizational commitment, and citizenship behaviors on information technology professionals' turnover intentions”</i>	325
9	Moorman R.H. et al.	1993	<i>“Treating employees fairly and organizational citizenship behavior: sorting the effects of job satisfaction, organizational commitment, and procedural justice”</i>	318
10	Nadiri H. et al.	2010	<i>“An investigation of the role of justice in turnover intentions, job satisfaction, and organizational citizenship behavior in the hospitality industry”</i>	315
11	Bell S.J. et al.	2002	<i>“The employee-organization relationship, organizational citizenship behaviors, and superior service quality”</i>	307
12	Boiral O. et al.	2012	<i>“Organizational citizenship behavior for the environment: measurement and validation”</i>	286
13	Bove L.L. et al.	2009	<i>“Service worker's role in encouraging customer organizational citizenship behaviors”</i>	284
14	Kim A. et al.	2017	<i>“Multilevel influences on voluntary workplace green behavior: individual differences, leader behavior, and coworker advocacy”</i>	253
15	Chen Z.X. et al.	2003	<i>“The relationship between the three components of commitment and employee performance in china”</i>	249
16	Halbesleben J.R.B. et al.	2015	<i>“To invest or not? The role of coworker support and trust in daily reciprocal gain spirals of helping behavior”</i>	248
17	Daily B.F. et al.	2009	<i>“A conceptual model for organizational citizenship behavior directed toward the environment”</i>	248

18	Walumbwa F.O. et al.	2010	“Retracted: psychological processes linking authentic leadership to follower behaviors”	245
19	Boiral O.	2009	“Greening the corporation through organizational citizenship behaviors”	245
20	Moorman R.H.	1993	“The influence of cognitive and affective-based job satisfaction measures on the relationship between satisfaction and organizational citizenship behavior”	238

Note(s): AU-Authors, TC - Total Citations. In this table, the articles are organized by highest citations.

3.1.5. (RQ5) Twenty uppermost references on OCB research.

To identify the fundamental issues in OCB research, we closely examine the maximum number of times cited studies in the field of research in OCB research in this part. This analysis also allows us to recognize imperative studies that may have been unnoticed in primary search because they are widely relevant to the extra-role behaviors of human resources in every organization.

Table 4 depicts the uppermost-cited published papers based on their local and global citations. Graham Jw et al. (1991) and Podsakoff np et al. (2014) have the uppermost local citations, with 58 and 52, respectively. With 559 and 350 citations, respectively, Lavelle Jj et al. (2007) and Graham Jw et al. (1991) dominate our list of globally cited research.

(Lavelle et al., 2007) The uppermost compelling and persuasive article in Scopus having 559 citations, is by Lavelle J.J et al., (2007).

(Graham & Verma, 1991) The study investigates the mechanism that helps explain the association between proximity and length of membership participation and increased preference for employee engagement programs, as well as changes in emotional responses to such programs.

Table 4

Twenty uppermost references on OCB research.

Sr. No.	Year	LC	Document	Title	GC
1	1991	58	Graham JW, 1991, Employ Respons Rights J	“Predictors and moderators of employee responses to employee participation programs”	350
2	2014	52	Podsakoff Np, 2014, J Organ Behav	“Consequences of unit-level organizational citizenship behaviors: A review and recommendations for future research”	207
3	2007	44	Lavelle Jj, 2007, J Manage	“Taking a multi-foci approach to the study of justice, social exchange, and citizenship behavior: The target	559

				<i>similarity model”</i>	
4	2013	44	Bolino Mc, 2013, J Organ Behav	<i>“Exploring the dark side of organizational citizenship behavior”</i>	223
5	2012	42	Chiang C-F, 2012, Int J Hosp Manage	<i>“Are all good soldier behaviors the same? Supporting multidimensionality of organizational citizenship behaviors based on rewards and roles”</i>	328
6	2002	40	Bell Sj, 2002, J Retail	<i>“The employee-organization relationship, organizational citizenship behaviors, and superior service quality”</i>	307
7	2000	39	Walz Sm, 2000, J Hosp Tour Res	<i>“Organizational Citizenship Behaviors: Their Relationship to Organizational Effectiveness”</i>	176
8	2003	36	Yoon Mh, 2003, J Bus Res	<i>“Organizational citizenship behaviors and service quality as external effectiveness of contact employees”</i>	229
9	2014	33	Carpenter Nc, 2014, J Organ Behav	<i>“Management governance and firm value: Empirical evidence from electronics businesses in Thailand”</i>	183
10	2003	31	Chen Zx, 2003, J Vocat Behav	<i>“The relationship between the three components of commitment and employee performance in China”</i>	249
11	2012	28	Boiral O 2012, J Bus Ethics	<i>“Enlightenment political philosophy and organizational citizenship behavior: Contextualizing historical discourse”</i>	286
12	2009	28	Boiral O, 2009, J Bus Ethics	<i>“Perceived human resource management practices and intention to leave employees: The mediating role of organizational citizenship behavior in a Sino-Japanese joint venture”</i>	245
13	2007	28	Coyne I, 2007, Int J Hum Resour Manage	<i>“Organizational citizenship behavior and turnover intention: A cross-cultural study”</i>	85
14	2010	26	Nadiri H, 2010, Int J Hosp Manage	<i>“An investigation of the role of justice in turnover intentions, job satisfaction, and organizational citizenship behavior in the hospitality industry”</i>	315
15	2009	26	Daily Bf, 2009,	<i>“A conceptual model for</i>	248

			Bus Soc	<i>organizational citizenship behavior directed toward the environment</i>	
16	2006	26	Baker Tl, 2006, J Bus Res	<i>"Promoting ethical behavior and organizational citizenship behaviors: The influence of corporate ethical values"</i>	154
17	2007	26	Vigoda-Gadot E, 2007, J Bus Psychol	<i>"Redrawing the boundaries of OCB? An empirical examination of compulsory extra-role behavior in the workplace"</i>	140
18	1993	25	Moorman Rh, 1993, Employ Respons Rights J	<i>"Treating employees fairly and organizational citizenship behavior: Sorting the effects of job satisfaction, organizational commitment, and procedural justice"</i>	318
19	2010	25	Lin C-P, 2010, J Bus Ethics	<i>"Modeling corporate citizenship and its relationship with organizational citizenship behaviors"</i>	147
20	2012	24	Nielsen Tm, 2012, J Manage	<i>"Utility of OCB: Organizational Citizenship Behavior and Group Performance in a Resource Allocation Framework"</i>	92

Note: GC - Global Citations, LC -Local Citations.

3.2 Reflection of Intellectual and influence structure through reflection of Knowledge foundations of OCB research.

3.2.1 (RQ6) Reflection of Knowledge foundations of OCB research through analysis of Co-citation.

The total number of citations received by a publication determines its impact. Citations can be used to evaluate the uppermost influential publication in any research field. By using thematic clusters based on co-citation and expanding the knowledge foundation. We analyzed co-citations that focus on highly cited publications in the domain, take into account co-cited references, sources, and authors, and seminal knowledge has been reflected. Business scholar finds out thematic similarity, and wishes to discover influential publication and knowledge foundations (Donthu et al., 2021).

The semantic connections of items are identified by the count of times they are cited together, which is referred to as co-citation. It happens when two items, such as an author and a document cited in another article, are close to each other. The Scopus- indexed data is used to create the Co-cited analysis. It includes cited references, cited sources, and the author of the co-citation.

Table 5 provides a review via thematic similarities which construct the knowledge composition (Knowledge foundation) of research in OCB as brought to light by analysis of co-citations (reference, source, and author).

Thematic similarities based on co-cited references:

Table 5 and **Fig. 2** presents the analysis of co-citation based on co-cited references of at least count of citations of a co-cited reference 20, of the 89712 cited references, 161 meet the threshold.

93 items make up **Cluster 1 (Pink Frames)**, based on the references used. With 190 and 160 citations, respectively, the top two cited articles titled “*organizational citizenship behaviors: a critical review of the theoretical and empirical literature and suggestions for future research*” (2000), and “*organizational commitment as predictors of organizational citizenship and in-role behaviors*” (1991), in this cluster are authored by Podsakoff et al., and Williams, I.j et al., in the source “*journal of management*”. Based on the references mentioned, **Cluster 2 (Green Frames)** has 68 entries. Organ, D.W., Paper titled “*Organizational Citizenship Behavior: The Good Soldier Syndrome*,” Lexington, MA: Lexington Books in the year (1988) and Paper titled “*Job Satisfaction and Organizational Commitment as Predictors of Organizational Citizenship and In-Role Behaviors*”, authored by Williams, I.j.et al., published in the source “*Journal of Management*” in the year 1991,” are the two most cited articles in this cluster, receiving 153 and 152 citations, respectively.

Thematic similarities based on co-cited sources:

Table 5 and **Fig. 3** presents the analysis of co-citation based on co-cited sources of at least count of citations of a co-cited source 20, of the 18962 sources, 524 meet the threshold.

188 elements make up **Cluster 1 (Pink Frames)** according to the listed sources. With 9934 citations the “*Journal of applied psychology*” is the uppermost and frequent used source in OCB research and receiving 4489 citations “*Academy of management journal*” is the second most frequent used source of research in OCB in this cluster. Based on recognized sources, **Cluster 2 (Green Frames)** has 101 items. With 9934 citations the “*Journal of applied psychology*” is the uppermost and frequent used source in OCB research and receiving 2820 citations “*Journal of organizational behavior*” is the second most frequent used source of research in OCB in this cluster. 97 items make up **Cluster 3 (Blue Frames)** according to the listed sources. With 4489 citations the “*academy of management journal*” is the uppermost and frequent used source in OCB research and receiving 3789 citations “*journal of management*” is the second most used source of research in OCB in this cluster. Based on the listed sources, **Cluster 4 (Yellow Frames)** has 75 entries. “*Academy of Management Journal and human performance*” are the two most frequently mentioned sources in this cluster, receiving 4489 and 997 citations, respectively. 34 items make up **Cluster 5 (Purple Frames)** based on the sources that were cited. With 216 and 123 citations, respectively, the top two sources in this cluster are from the “*journals of applied psychology and business ethics*”. Based on the listed sources, **Cluster 6 (Sky Blue Frames)** consists of 16 elements. With 3789 citations the “*Journal of management*” is the uppermost and frequent used source in OCB research and receiving 63 citations “*Journal of business venturing*” is the second most frequent used source of research in OCB in this cluster. Based on the listed sources, **Cluster 7 (Orange Frames)** has 13 items. With 3789 citations the “*journal of Management*” is the uppermost and frequent used source in OCB research and receiving 677 citations “*Journal of Business Research*” is the second most used source of research in OCB in this cluster.

Thematic similarities based on co-cited authors:

Table 5 and **Fig. 4** presents the analysis of co-citation based on co-cited authors of at least count of citations of a co-cited author 20, of the 60057 authors, 1913 meet the threshold.

Based on the authors cited, **Cluster 1 (Pink Frames)** has 268 entries. With 761 and 574 citations, respectively, the top two writers in this cluster are Liden, R.C., and Avolio, B.J. Based on referenced authors, **Cluster 2 (Green Frames)** has 266 entries. With 3197 and 2601 citations, respectively, the top two writers in this cluster are Podsakoff, P.M., and McKenzie, s.b. based on referenced authors, **Cluster 3 (Blue Frames)** has 263 entries. With 947 and 625 citations, respectively, the top two writers in this cluster are Podsakoff, n.p., and Bakker, a.b. Based on The authors cited, **Cluster 4 (Yellow Frames)** has 199 items. With 3417 and 950 citations, respectively, the top two writers in this cluster are organ, D.W., and Moorman, R.H. Based on the referenced authors, **Cluster 5 (Purple Frames)** has four components. Somech and Drach-Zahavy are the two most often mentioned writers in this group, receiving 202 and 73 citations, respectively.

Table 5

Overview of thematic clusters through Co-citation references, sources, and authors.

<i>Based On Co-Cited References</i>				<i>Based On Co-Cited Sources</i>				<i>Based On Co-Cited Authors</i>			
Clust er	ID	CR	TC	Clus ter	ID	SR	TC	Clust er	ID	AU	TC
1	656 37	Podsakoff et al., “organizational citizenship behaviors: a critical review of the theoretical and empirical literature and suggestions for future research”, (2000) “journal of management”.	190	1	86 42	“journal of applied psychology”	993 4	1	3161 6	Liden, r.c.	761

86205	Williams, l.j. et al., “job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors” , (1991) “journal of management”.	160	512	“academ y of management journal”	4489	3067	Avolio, b.j.	574
2	60977 organ, d.w., (1988) “organizational citizenship behavior: the good soldier syndrome” , Lexington, ma: Lexington books	153	2	8642 “journal of applied psychology”	9934	2	42356 Podsakof, p.m.	3197
86221	Williams, l.j. et al., “job satisfaction and organizational commitment	152	9543	“journal of organizational behavior”	2870	33182	MacKenzie, s.b.	2601

nt as predictors of organizational citizenship and in-role behaviors” (1991) “journal of management”.	3	512	“academy of management journal”	4489	3	42352	Podsakoff, n.p.	947
		9319	“journal of management”	3789		3622	bakker, a.b.	625
	4	512	“academy of management journal”	4489	4	39982	organ, d.w.	3417
		6018	“human performance”	997		36939	Mooorman, r.h.	950
	5	8061	“j. appl. Psychol.”	216	5	50181	Somach, a.	202
		8083	“j. bus. Ethics”	123		14277	Drach-Zahavy, a.	73
	6	9319	“journal of management”	3789				
		8787	“journal of	63				

		business venturin g”	
7	93 19	“journal of manage ment”	378 9
	87 73	“journal of business research ”	677

Note(s): ID=Authors’ ID.CR= Cited References. TC= Total Citations. SR= Source. AU= Authors. The cited references, and sources, in this table, authors are ordered by total citations based on their similarity in theme.

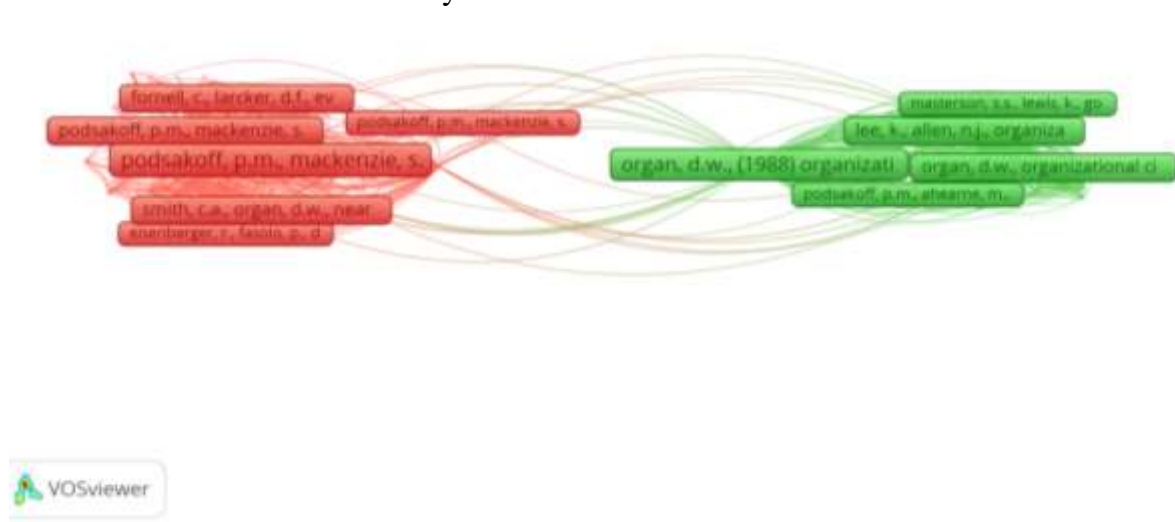


Figure 2. Visual representation of Co-citation Network based on cited References. Cluster1 (Pink Frames), Cluster2 (Green Frames)

Source: VOS viewer and Scopus database.

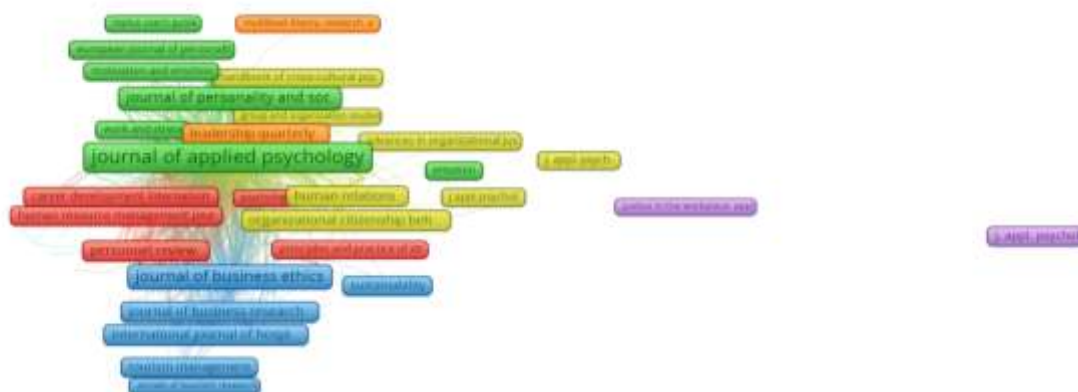


Figure 3. Visual representation of Co-citation Network based on cited Sources. Cluster1 (Pink Frames), Cluster2 (Green Frames), Cluster3 (Blue Frames), Cluster4 (Yellow Frames), Cluster5 (Purple Frames), Cluster6 (Sky Blue Frames), Cluster7 (Orange Frames)
Source: VOS viewer and Scopus database.

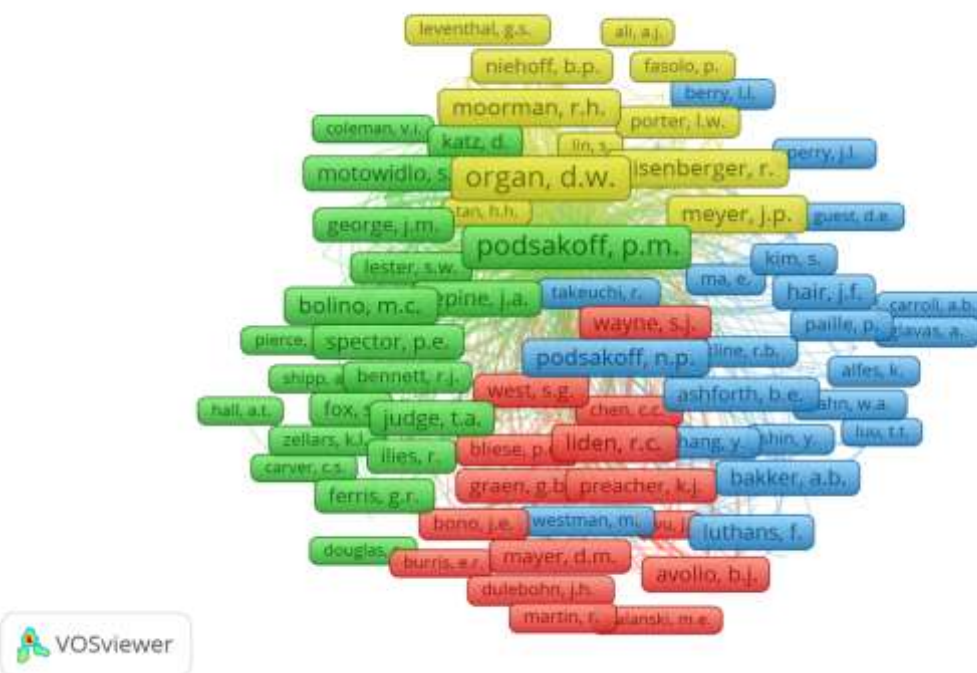


Figure 4. Visual representation of Co-citation Network based on cited authors. Cluster1 (Pink Frames), Cluster2 (Green Frames), Cluster3 (Blue Frames), Cluster4 (Yellow Frames), and Cluster5 (Purple Frames).
Source: VOS viewer and Scopus database.

The analysis of co-citation which is on the basis of co-cited reference, source, and author is represented in **Figure 2-4** of the OCB research. Each frame represents a citation, source, and author. Based on thematic similarity, each frame color reflects references, sources, and

authors in semantic clusters. The dimension of the frame reflects the local citations' degree, with bigger frames reflecting higher levels of local citation intensity. Co-citations are represented by the link between frames. The broadness of the linkage between frames depicts the degree of co-citations, with broader linkages depicting higher co-citation intensity. To uncover pertinent research streams and collaboration networks, our study uses co-citation analysis, intelligent data analytics, and computational visualization. The findings illustrate contemporary study clusters and lines of inquiry developed by academics using co-citational linkages.

3.2.2 (RQ7) Reflection of on the body of knowledge by developing thematic clusters of OCB research through conceptual structure (Co-word network analysis and clustering) analysis.

The term "co-word thematic and network analysis" refers to the exploration of present or potential linkages between various themes studied in a particular research field through the descriptive content of the publications themselves. The words in a "co-word analysis" of major OCB research themes are derived from "keyword plus" (Donthu et al., 2021).

Table 6 reflects an overview of the three theme clusters which support the knowledge structure of research in OCB as determined by keyword plus. 50 publications on **citizenship** make up **Cluster 1 (Blue Node)**, which has 1,874 citations overall. With 221, 93, 84, and 84 citations, respectively, the top four most referenced papers in this cluster are Pham Nt; tuková z; Chiappetta Jabbour Cj (2019), Chiu Su-f; Tsai m-c (2006), Luu tt (2019), and Hwee ht; min l t(2008). 50 papers on **organizational citizenship behaviors** make up **Cluster 2 (Green Node)**, which, according to Scopus, has received 1,874 citations. With 102, 78, 65, and 64 citations, respectively, the top four articles in this cluster are Yu c-p; chu t-h (2007), Lim Bth; loose more m (2017), Braun t; Ferreira ai; Sydow j (2013), and Li Jj; Kim Wg; Zhao Xr (2017). 50 publications on **organizational framework** make up **Cluster 3 (Red Node)**, which, according to Scopus, has received 1,874 citations. (Temminck e et al., 2015), (Boiral o et al., 2015), (Pan Fc., 2015), and (Yen c-h et al., 2013) are the top four most referenced publications in this cluster, with 130, 121, 79, and 59 citations, respectively.

Table 6
Overview of thematic clusters of OCB research.

Theme	AU	Title	SR	Year	TC	TCY	NTC
Citizenship	Pham nt et al.	<i>"Greening the hospitality industry: how do green human resource management practices influence organizational citizenship behavior in hotels? A mixed-methods study."</i>	"Tourism management"	2019	221	55.3	14
	Chiu Su-f; Tsai m-c	<i>"Relationships among burnout, involvement, and job and interdisciplina"</i>	"Journal of psychology: interdisciplina"	2006	93	5.47	1.34

		<i>organizational citizenship behavior.”</i>	ry and applied”					
	Luu tt	<i>“Green human resource practices and organizational citizenship behavior for the environment: the roles of collective green crafting and environmentally specific servant leadership.”</i>	“Journal of sustainable tourism”	2019	84	21	5.31	
	Hwee ht et al.	<i>“Organizational citizenship behavior and social loafing: the role of personality, motives, and contextual factors.”</i>	“Journal of psychology: interdisciplinary and applied”	2008	84	5.6	1.78	
Organization al Citizenship Behaviors	Yu c-p et al.	<i>“Exploring knowledge contribution from an Ocb perspective.”</i>	“Information and management”	2007	102	6.38	1.54	
	Lim Bth et al.	<i>“The effect of inter-organizational justice perceptions on organizational citizenship behaviors in construction projects.”</i>	“International journal of project management”	2017	78	13	2.93	
	Braun t et al.	<i>“Citizenship behavior and effectiveness in temporary organizations.”</i>	“International journal of project management”	2013	65	6.5	1.29	
	Li Jj et al.	<i>“A Multilevel Model of management support and casino employee turnover intention.”</i>	“Tourism management”	2017	64	10.7	2.41	
Organization al Framework	Temminck e et al.	<i>“Motivating employees toward sustainable behavior.”</i>	“Business strategy and the environment”	2015	130	16.3	4.33	
	Boiral o et al.	<i>“Leading by example: a model of organizational citizenship behavior for</i>	“Business strategy and the environment”	2015	121	15.1	4.03	

the environment.”

Pan Fc	<i>“Practical application of importance-performance analysis in determining critical job satisfaction factors of a tourist hotel.”</i>	“Tourism management”	2015	79	9.88	2.63
Yen c-h et al.	<i>“The effect of centralization on organizational citizenship behavior and deviant workplace behavior in the hospitality industry.”</i>	“Tourism management”	2013	59	5.9	1.17

Note(s): AU-Authors, SR-Source (Journal), TC -Total Citations. NTC = normalized total citation. TCY-Total Citations per year: The AU, SR, and Papers appear as per highest citations in different clusters which are based on keyword plus in this table.

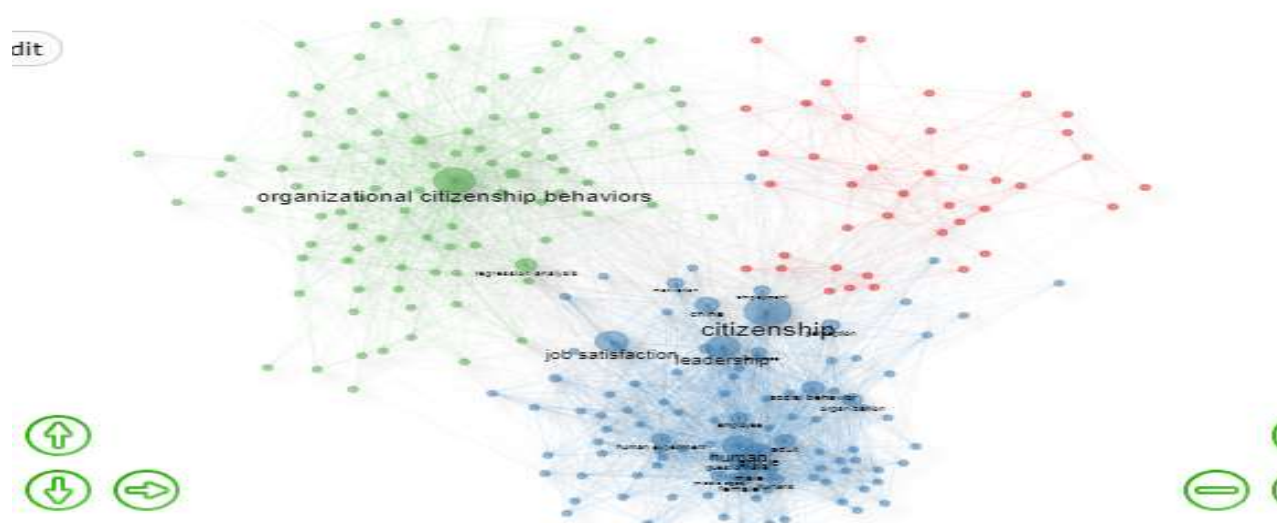


Figure 5: Thematic Network showing three thematic clusters naming Citizenship (Blue node), organizational citizenship behaviors (Green node), and organizational framework (Pink node) based on keyword plus.

Source: Biblioshiny through R studio and Scopus database.

Thematic network representation based on keyword plus is reflected in **Figure 5** of the OCB research. Each node corresponds to a keyword. Based on the thematic similarity of keywords, each node color represents a thematic cluster of keywords, namely **citizenship (Blue node)**, **organizational citizenship behaviors (Green node)**, and **organizational framework (Pink node)**. The degree of local citations is represented by the size of the node, with larger nodes reflecting the greater intensity of local citations. Keywords are represented by the links

between nodes. The study makes addition to the expanding body of knowledge, by providing a better understanding of OCB for future development. As a whole, ambient thematic clusters are the reflection of growing body of knowledge through various research themes in the field of OCB.

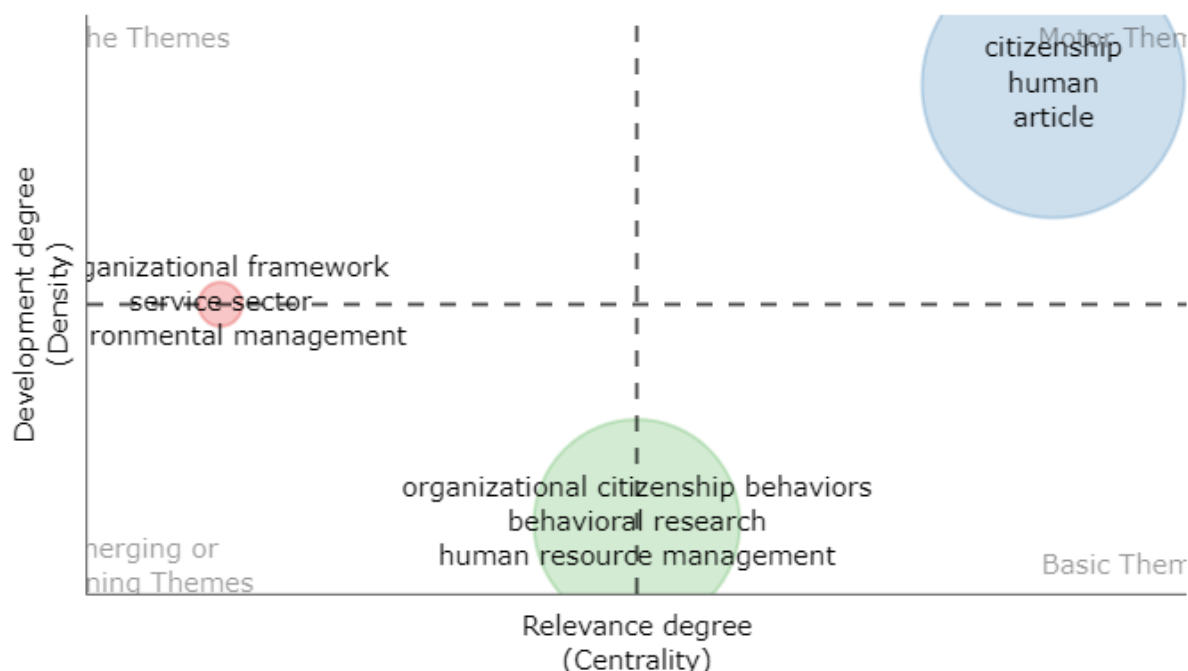


Figure 6: Thematic Map of thematic clusters based on keyword plus

Source: Biblioshiny through R studio and Scopus database.

Thematic map representations based on keyword plus are reported in **Figure 6**. The Thematic map function generates a thematic map that illustrates the density and centrality of research in OCB based on three thematic clusters and co-word network analysis and grouping. Plotting every identified cluster results in two-dimensional strategic diagrams. Our study on OCB literature demonstrates the three themes: (1) Citizenship themes including green human practices, social behavior, and green human resource management appear in the upper-right quadrant and are thought to be motor themes for research, and considered to be as highly developed and significant for OCB field. (2) Organizational framework themes including sustainable behavior, environmental management, and service sector appear in the center of the upper-left quadrant and lower-left quadrant and are thought to be emerging themes for research but are considered to be as marginal importance for this field. (3) Organizational citizenship behavior theme includes behavioral search, inter-organizational justice, human resource management, service sector, and management support and these are too much significant for research in OCB but these themes are not yet so much developed.

3.3 Implications

The current study sheds more light on the research in organizational citizenship behavior. By highlighting recent and emerging characteristics of behavioral research on OCB, and offering a comprehensive analysis of publications, it seeks to enhance the visibility of this study. As a result, by applying bibliometric analysis techniques, some intriguing findings were discovered, which help and assist research scholars in future research in OCB.

3.4 Discussion and Conclusion

Based on its conceptual structure, the current study reflects the structure of research in OCB. The conceptual thematic similarities in the field of OCB research were visualized utilizing 1625 papers from Scopus database. The summary of the bibliometric analysis of the research in OCB is shown in **Table 7**.

Table 7

Summary of bibliometric review of research in OCB.

<i>Performance analysis</i>	<i>Co-citation analysis</i>	<i>Co-occurrence (co-word) analysis</i>
<ul style="list-style-type: none"> • bibliometric database • Reflection of performance in OCB research 	<ul style="list-style-type: none"> • Co- cited publications • Reflection of growing foundation of knowledge In OCB research. 	<ul style="list-style-type: none"> • Keyword Plus based • Reflection on the body of knowledge in OCB research
<p>journals between 1991 to 17 December 2022.</p> <ul style="list-style-type: none"> • 2022 was the uppermost productive year with maximum articles (185). <p>Uppermost authors</p> <ul style="list-style-type: none"> • Uppermost citations Boiral o. (702 TC) • Uppermost publications Tremblay, M. (11 papers published) <p>Uppermost institutions</p> <ul style="list-style-type: none"> • Uppermost citations “The University of Alabama”, United States (520 TC) • Uppermost publications: “University of Hong Kong”, (40 papers published) <p>Uppermost nations</p> <ul style="list-style-type: none"> • Uppermost citations: (United States, 18,274 TC) • Uppermost publications: United States ,481 papers published) <p>Uppermost sources</p> <ul style="list-style-type: none"> • Uppermost citations: (“Journal of Business Ethics”, 3,614 TC) • (“Journal of Management”, 3,090 TC) 	<p>Thematic similarities Based on co-cited references</p> <ul style="list-style-type: none"> • Total number of clusters =2 <p>Based on co-cited sources</p> <ul style="list-style-type: none"> • Total number of clusters =7 <p>Based on co-cited authors</p> <ul style="list-style-type: none"> • Total number of clusters =5 	<p>Thematic clusters APY 1991 to 2022.</p> <ol style="list-style-type: none"> 1. Citizenship (Blue node) 2. Organizational Citizenship Behavior (Green node) 3. Organizational Framework (Pink node)

• **Uppermost publications:**

“Journal of business ethics “

(53 papers published)

“International Journal of human resource management”

(51 papers published)

Uppermost articles

• (Lavelle J.J. et al., 2007, 559 TC)

• (Groth M. 2005, 471 TC)

Uppermost references

• **Uppermost Local citations**

(Graham Jw, 1991, 58 TC),

(Podsakoff Np 2014, 52 TC)

• **Uppermost Global citations**

(Lavelle Jj 2007, 559 TC)

(Graham Jw 1991, 350 TC)

Note(s): Reflection of publication trends utilizing database from Scopus, reflection of growing foundation of knowledge extracting thematic similarities via analysis of Co-citation, reflection of body of knowledge extracting major themes.

We have drawn some discussions and conclusions on the basis on our bibliometric study on 1625 research papers on “OCB” extracted from Scopus database. We are seeing that organizational citizenship behavior is the progressing research topic. Year 2022 was the uppermost productive year having maximum number of research papers in OCB. Boiral o., “The University of Alabama”, United States., United States, “Journal of business ethics”, Lavelle J.J. et al., 2007, Graham Jw, 1991(LC), Lavelle Jj 2007(GC) are the uppermost author, institution, country, journal, article, and references on the basis of total citations. Thematic similarities were found out as total number of clusters is two, seven and five on the basis of co-cited references, authors, and sources. Three thematic clusters citizenship, Organizational citizenship behavior, and organizational framework have been developed. We discovered that organizational citizenship behavior is the hot topic to research in future trends as human assets are the one who run all the show in any organization, and it provides sustainable behavior, and green behavior in the greening of the organization. The findings of our study gives a historical framework and emerging themes in the research field of OCB, on which future research can be done.

Declaration of Interest

NA

Acknowledgements

NA

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