
Ungoverned Spaces and the Development of Nonstate Armed Groups' Violence: A Bibliometric Analysis

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Abstract

The major goal of this paper is to make a study on the connection between ungoverned spaces and nonstate armed groups through a bibliometric analysis of published documents on the SCOPUS database over a 10-year period (2011–2020). Bibliometric indicators and criteria were utilized better to understand the trends in the literature on this area. The study generates quantitative data from 201 publications published by 159 authors in 21 scholarly journals. Over the last decade, the literature has grown on various scales, from a few articles in early 2001 to over 275 documents. According to the assessment, the most important publications and writers were global in scope but predominantly from Western developed countries. Using co-author citation analysis, the intellectual clustering composition of the knowledge base on ungoverned spaces and nonstate armed groups was found, revealing research directions: ungoverned spaces, terrorism, and international humanitarian law. The distribution of documents across the most highly cited journals reflects the breadth, quality, and influential scholars in the ungoverned spaces domain. The contemporary research fronts in the existing literature were revealed through keyword co-occurrence analysis. Overall, the data demonstrated an unsatisfactory degree of dispersion in the literature in terms of authors and journals within the scope under study and a weak collaboration between authors, institutions, and countries. Therefore, based on the results from the analysis, the connection between ungoverned spaces and nonstate armed groups remained an emerging field with a growing interest from various international experts in various fields, including environmental science, engineering, and strategic studies.

Keywords: Bibliometric, Nonstate armed groups, Terrorism, Co-occurrence, VOSviewer.

1. Introduction

Academics and policymakers have increasingly been more concerned about “ungoverned spaces” (UGS), which are enormous swaths of land over which formal governments have little authority or presence (Downey, 2021a). Evidences have shown that ungoverned (or, perhaps more accurately, weakly governed) spaces have serious adverse effects on the rest of the world by providing safe havens for terrorists and violent groups. More importantly, ungoverned spaces have created more opportunities for insurrectionists, terrorists, rebels, and even

petty criminals who hide in such places after they might have committed a crime. Literature has shown that the global experiences regarding the role of ungoverned spaces in the development of nonstate armed groups violence varies. For instance, in Africa, especially the Sahel, insurgencies and violent struggles between herders and farmers have thrived in ungoverned spaces characterized by lawlessness (Olaniyan, 2018; Olaniyan & Yahaya, 2016; Saminu et al., 2023; Udo, 2021). Hence, the ferocity and regularity of these encounters have garnered concerns from researchers, policymakers, and even

nongovernmental organizations. On this note, previous literature focused more on the role of political and economic factors in promoting cyclical conflicts and insurgencies (Banini, 2020; Clapham et al., 2017; De Nadai et al., 2020; Lenshie et al., 2020; Schloenhardt, 1999) across the globe. However, little attention was given to the role of ungoverned spaces in the continuous growth of these conflicts (Downey, 2021b; Felbab-Brown, 2010; Keister, 2014; Lloyd, 2016; Lynch, 2016a; Menkhaus, 2007). Records have shown that nonstate armed groups, extremists, and criminal gangs have taken advantage of the vacuum created by ungoverned spaces and ineffective security governance to advance sectarian interests and threaten the sovereignty of the affected countries (Abarca, 2014; Abasa, 2015; Lloyd, 2016; Munyua, 2015; Neethling, 2014; Sackflame & Omitola, 2022; Tsagourias, 2016). As a result, the need to explore its role became even more necessary. Therefore, this paper investigates the global research trend on the role of ungoverned spaces and the development of nonstate armed groups violence using bibliometric analysis.

The application of bibliometric statistical tools to evaluate the impact of research output is becoming increasingly popular. Several studies have used bibliometric research tools to determine diverse fields' direction, gaps, and impacts. It has become a standard method for identifying numerous scientific indicators and assessing the performance of scientific outcomes in various fields of study, including the social sciences (Khiste & Painthankar, 2017). For example, bibliometric research has been utilized to understand climate-induced migration (Milán-garcía et al., 2021), environmental protection (Xue et al., 2021), managing security-related risks (Marquez-Tejon et al., 2021), ensuring food security (Xie et al., 2021), and on the discourses around conflict research (Sillanpää & Koivula, 2010). The studies mentioned above, and many more, have been

conducted to see how years of research have influenced various academic fields.

Records have shown that previous literature did not use bibliometric tools to understand the domain of ungoverned spaces as a driver of nonstate armed group violence. This can be corroborated by the low contributions in the research domain of ungoverned spaces and nonstate armed groups violence. Hence, it is necessary to assess recent trends in exploring the roles of ungoverned spaces while utilizing established literature databases. Accordingly, an exhaustive search of related bibliometric analysis on ungoverned space was made on various databases, including Google, Scopus, and Google Scholar, but none were discovered. Other related phrases such as failed states, fragile states, nonstate armed groups, weak sovereignty, and terrorism, on the other hand, were used to generate more documents. A few connected documents were uncovered in this regard.

The evolving trend of bibliometric investigations indicates that literature directly touching on ungoverned spaces is sparse. However, Duan et al. (2021) worked on state fragility during the coronavirus pandemic based on an ecological study of data from 146 nations. It was limited to the literature on state fragility concerning health-related issues on Covid-19. Similarly, Sweileh (2020) conducted another bibliometric on health issues in fragile states, revealing that the volume of publications in the alert zone was far from what was expected. In addition, Klona et al. (2021) did a mapping on the impact of terrorism on finance and management studies that spans thirty years period. Other studies that have touched on related topics include one on human trafficking (Sweileh, 2018), women, peace and security state-of-art (Palomo et al., 2017), disaster and climate change resilience (Rana, 2020), and India's terrorist research output from 2000 to 2017 (Patil, 2019).

Overall, bibliometric research can be used in various social sciences disciplines. It is used to evaluate the impacts of certain publications in the broad field (Mahapatra & Sahoo, 2021), including suicidology (Astraud et al., 2020). This study feels that bibliometric analysis will aid in mapping out the strategic importance of bibliographic data to comprehend better global research trends on the role of ungoverned spaces in the development of armed groups violence. The goal, therefore, is to undertake a bibliometric review of works that focus on the use, identification, and analysis of key concepts in the domain, such as ungoverned spaces and nonstate armed groups. Furthermore, the scope of the study is limited to items published in the Scopus database between 2011 and 2020. The rationale for choosing this range is to comprehend better what happened in the past decade, which witnessed the most current publications on activities of nonstate armed groups in ungoverned spaces. Therefore, subsequent sections consist of ungoverned spaces and nonstate armed groups, methodology, presentation, and results, findings. It concludes with a suggestion for further research.

2. Literature Review

Ungoverned Spaces and Nonstate Armed Groups

There has been a debate about what constitutes ungoverned space and its threats since September 11, 2001 attack. Previous literature found it challenging to analyze more precisely what dangers ungoverned spaces pose (Menkhaus, 2007). As a result, defining what it is has become a new task that has yet to be completed. Despite these issues, the literature has expressed the idea differently depending on specific identifiable traits and their relevance in the space securitization debate. For example, while a literature section identified ungoverned spaces within different continents as a source of worry (Mingst, 2013) and a source of alternative

governance (Clunan & Trinkunas, 2010) others, such as Keister (2014), denied its existence and called it fictional. Most significantly, the debates continue with slim possibilities of reaching an agreement. Furthermore, Rabasa et al. (2020) describe ungoverned spaces as failed states and poorly controlled; or areas within otherwise viable states where the central government's authority does not extend. Subsequent literature, such as Ojo (2020), continued to use this perspective. As a result, the literature continued to consider the existence of the ungoverned spaces out of the state's fragility and vulnerability and, to some extent, statelessness. As such, any state characterized as failed or fragile had fallen within states capable of having ungoverned states.

Ungoverned spaces have been considered an eminent source of violent conflicts in different parts of the world. Terrorist groups such as al-Qaeda and the Islamic State have taken hold of these spaces to advance their interests and train new members (Lynch, 2016b). In Somalia, for example, Al-Shabab enjoys vast ungoverned spaces for its operations (Stremlau, 2018), while a similar experience is attributed to the armed groups operating in the Sahel region ("Governance and Conflict in the Sahel's 'Ungoverned Space,'" 2013). The existence of these areas and governments' inability to control them has engendered serious violence in many states, particularly in Syria, Afghanistan, Iraq, Lebanon, and Sub-Saharan Africa. overall, ungoverned spaces are areas where the state cannot provide adequate security governance (Lenshie et al., 2020).

Studies have attributed the violence to the existence of ungoverned spaces but more precisely to a passion that presents it as a driver of conflict. In Ukraine, for example, violence levels peak in areas where the central government has inadequate access (Dzutsati, 2021). However, several studies have confirmed the existence of armed

groups in ungoverned spaces. The armed groups operate and sometimes foster local order through violence. In Somalia, Al-Shabaab co-opts and cooperates with the local authority structure, eventually encouraging order in south-central Somalia in 2008 and 2009 (Skjelderup, 2020).

3. Methodology

The methodology of bibliometric analysis relies upon quantitative techniques and thus avoids or mitigates bias (Donthu et al., 2021). This study used the Scopus database to accomplish its objectives. The choice of the Scopus database was based on Clarivate Analytics' that the scholarly community widely considers the Scopus platform among the most trusted or authoritative bibliometric data sources (Tennant, 2020). This study considers the Scopus database the most suitable and most comprehensive. The study involved three main stages: data generation through the Scopus database, performance analysis, and data mapping using VOSviewer software.

Search Strategy

To achieve the objectives of this study, the data mining strategy was focused only on two key concepts: (1) Ungoverned space; and (2) armed groups. However, several key terms were also used differently to generate more publications initially. For example, 'Ungoverned spaces' was used independently and only generated very few documents. Additionally, 'armed groups' was also used but had only generated fewer publications. To get the more number enough for this study, the authors put together the two concepts as "ungoverned spaces" OR "armed groups," generating about 270 publications. Hence, the following steps were followed to achieve the objectives of the study;

- i. the data generated was based on the "article title". This was done to maximize the accuracy of the retrieved required number of publications. However, to include

all published documents, the basic search method was used (Kawuki et al., 2020) against the advanced method, which ultimately generates enough data.

- ii. Data were filtered to achieve clarity and relevance concerning the topic. The process was repeatedly followed until the required number was achieved.
- iii. Data mining was restricted to only three subject areas: (1) Social sciences, (2) Arts and Humanities (3) Environmental science. This was done to exclude the areas the researchers felt were not significantly relevant to this study, such as Engineering, medicine, computer- science, psychology, decision sciences, business, management and accounting, economics, econometrics, and finance.
- iv. Data mining was limited only to documents published between 2011-2020 and was done to access the most recently published documents within a decade.
- v. All documents published in languages other than English were equally counted during data mining.

Validation of search strategy

The data validation strategy adopted aimed at achieving efficiency by removing irrelevant documents. In the process, 201 publications generated from the Scopus database were analyzed to ensure they fell within the context of the research keywords. The researchers followed them one after the other to ensure their relevance for this study. However, none of the documents is found to be irrelevant to the area. As such, all records were counted as relevant for the study.

Data export

The data generated from the Scopus database was exported and presented on a

Microsoft Excel page. The technique used involved absorbing both CSV (“comma-separated values”) and ris (“research information system”) files imported from Scopus for analysis. We concentrated on article titles because it is the first thing readers would notice (Annesley, 2010; Jamali & Nikzad, 2011), and it is pertinent to the research area and the study’s goal. The data exported were based on the following categories: Total publications per year, Authors, Subject areas, Document types, Source titles, Source types, Keywords, Institutions, Country, and Language. We excluded the funding source as there was no intention to analyze its impacts in this study. During the data exportation, all components were considered to enable us to see the general picture from which we chose the categories relevant to this study. Depending on the data flow, different numbers of the top-performing categories were considered to avoid misrepresentation.

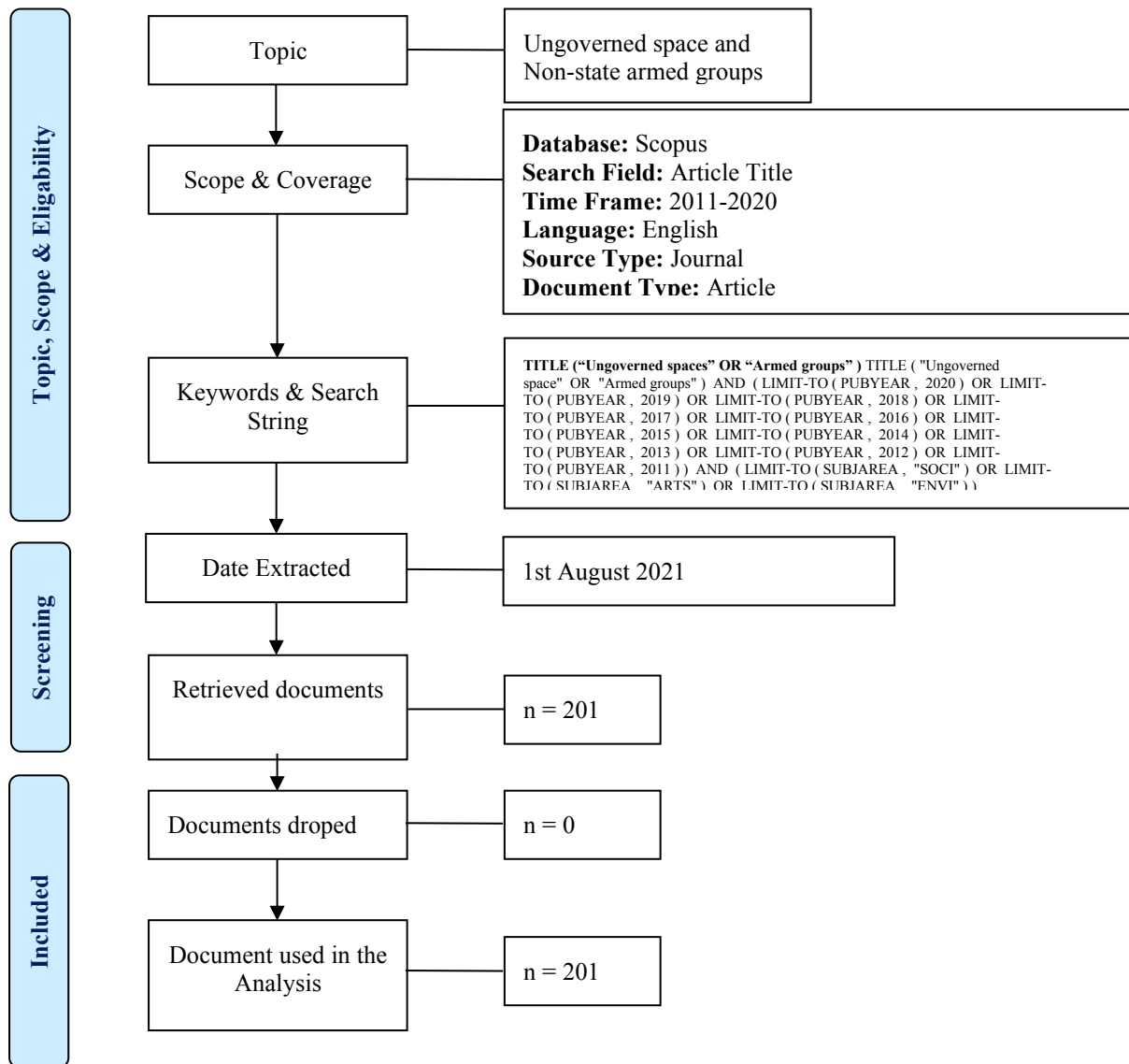
Research domains

The retrieved documents were analyzed to find the number of papers published on ungoverned spaces and armed groups. The number of records was obtained, excluding any consideration of “violence” and “conflict” as keywords. After the initial query, we discovered that adding the two keywords leads to inconsistencies. To avoid errors, we excluded the keywords. However, the overall query shows the search keywords used to retrieve the comprehensive data in each category.

Graphics and Mapping

VOSviewer was used as a visualization tool to present the contributions of various countries to the generated publications. Also, Harzing’s Publish and Perish program to calculate citation metrics was equally used. The software uses a network visualization map in a category way (Cavalcante et al., 2021) to explain the interconnectedness and impacts of the various items of the research, such as the contributing source, authorship and co-authorship, co-occurrence, institutions, and keywords.

Fig. 1: Research protocol and Strategy



Source: Diagram adapted from (Zakaria et al., 2020).

4. Results and DiscussionPresentation of results

This bibliometric’s general opinion is that the annual publication patterns have not progressed consistently. Table 1 demonstrates this fact. According to the statistics, 2011 started with 18 documents, and by 2020, 19 publications were generated. Within the two extremes, however, there are contributions such as 13 Fig. 1 for more explanation).

publications in 2012; 16 publications in 2013; 20 publications in 2014; 21 publications in 2015; 20 publications in 2016, 20 publications in 2017, 21 publications in 2018, 28 publications in 2019, and 25 publications in 2020 (See table 1, and

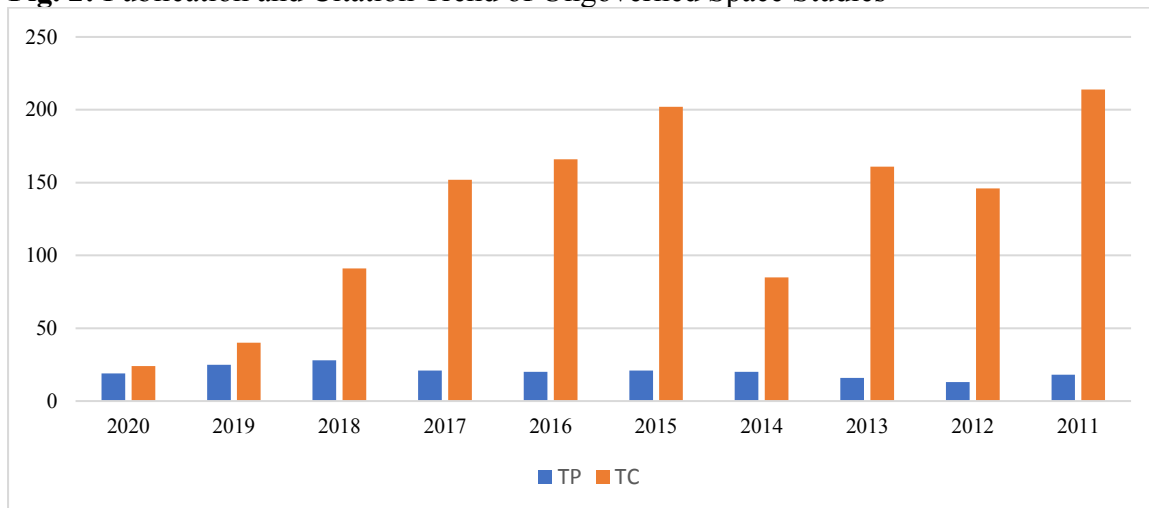
Table 1: Trends of annual publication trends

Year	TP	%	NCP	TC	C/P	C/CP	h	g
2020	19	9.45%	9	24	1.26	13.36	3	4
2019	25	12.44%	13	40	1.60	12.86	3	5
2018	28	13.93%	17	91	3.25	23.33	5	8
2017	21	10.45%	17	152	7.24	69.28	7	11
2016	20	9.95%	17	166	8.30	83.42	6	12
2015	21	10.45%	18	202	9.62	92.07	7	13
2014	20	9.95%	14	85	4.25	42.71	4	8
2013	16	7.96%	13	161	10.06	126.41	7	12
2012	13	6.47%	12	146	11.23	173.64	6	12
2011	18	8.96%	18	214	11.89	132.76	10	14

Source: Authors' compilation, 2021

Notes: TP=total number of publications; NCP=number of cited publications; TC=total citations; C/P=average citations per publication; C/CP=average Citations per cited publication; h=h-index; and g=g-index

Fig. 2: Publication and Citation Trend of Ungoverned Space Studies



Source: Authors' design, 2021

Notes: TP=total number of publications; TC=total citations

Fig. 2 depicts the annual publication trend on ungoverned spaces and armed groups. Two hundred and one (201) publications are generated from the Scopus database. The graphic presentation shows that the total number of publications in 2011 began at 18, with a total citation matrix of 214 for that year only. There was a decline to 13 publications in 2012, along with a citation matrix of 146. In addition, three more documents were published in 2013, bringing the total number of papers published in 2013 to 16. In 2013, the number of citations grew to 161. The publication patterns in 2014 show a

consistent growth trend to 20 publications, while the citations matrix has reduced to 85. In 2015, the increase was consistent, with one more publication bringing the total to 21, and the citations matrix skyrocketed to 202 from the previous 2014 citation matrix. According to Fig. 2, annual publications have not increased consistently since 2015, and this trend has continued throughout the study period. For example, the annual publication trend in 2016 recorded 20 documents, compared to 14 in 2014. However, the number of citations in the

2016 matrix fell to 166 from the previous year's 202. In 2017, the number of publications increased to 21, while the total citation matrix decreased to 152. Furthermore, in 2018, the number of publications rosed to 28 documents. The total citation matrix dropped to 91, indicating a decrease in the academic community's projected use of the published documents. With 25 papers and 40 citations, both total publications and total citation matrix decreased in 2019. Finally, the Fig. 2 showed a negative trend in total

publications and citation matrix in 2020, with 19 papers and 24 citations. In summary, the overall description of this outcome is that neither total publications nor total citations have constantly been increasing or dropping to indicate the academic community's acceptance of the theoretical and research relevance of the topics. Table 2 below shows the types of publications retrieved for this study. However, they are presented in 8 categories.

Table 2: Types of retrieved documents

Document type	Total publication	Percentage (%)
Article	115	57.21%
Book Chapter	46	22.89%
Review	24	11.94%
Book	8	3.98%
Editorial	4	1.99%
Conference Paper	2	1.00%
Erratum	1	0.50%
Letter	1	0.50%
Total	201	100%

Source: Authors' compilation, 2021

Notes: TP=total number of publications.

Table 2 presents types of documents retrieved from the Scopus database. In the first category, 115 journal articles have the highest number of publications, as represented by (57.21 percent). There were also 46 book chapters represented by (22.89 percent) in the second category. Thirdly, 24 publications fell in the categories of review (containing journal and book publications) as represented by (11.94 percent). Fourthly, 8 books have been sampled in this study and are represented

by (3.98 percent). Fifthly, there were 4 publications in the editorials category with (1.99 percent). The category of conference papers has only 2 publications and is represented by (1.00 percent). Finally, for erratum and letter, each has only 1 publication and were both represented by (0.50 percent) each. The top five most productive authors in the field chosen for this study are represented in the table below.

Table 3: Subject Areas selected

Subject Area	TP
Social Sciences	200
Arts and Humanities	27
Environmental Science	3

Source: Authors' compilation, 2021

Notes: TP=total number of publications.



In the Table 3, the researchers limited their search to three subject areas that are regarded as the most relevant sources for this study. The table shows that social sciences category has the most articles

(200), including publications not sampled for this study; arts and humanities have the second most publications (27), and environmental science has three publications.

Table 4: Sources of documents retrieved

Source Type	TP
Journal	147
Book	52
Book Series	2
Total	201

Source: Authors' compilation, 2021

Notes: TP=total number of publications.

Table 4 lists the sources of documents acquired for this study. Documents from journals, books, and book series were utilized in this research. However, the table shows that, out of the 201 total documents utilized, 147 are from journal sources. In

addition, 52 publications are contained in books, with two texts originating from a book series. Outside of these categories, the researchers did not consider any publication relevant for this investigation.

Table 5: Top five most productive authors

Authors	T P	%	Affiliation	Country	NC P	T C	C/P	C/C P	h	g
Schuberth, M.	5	2.49	University of Bradford	United Kingdom	4	50	10.00	12.50	4	4
Bosi, L.	3	1.49	Scuola Normale Superiore di Pisa	Italy	2	52	17.33	26.00	2	2
Murray, D.	3	1.49	University of Essex, Colchester	United Kingdom	3	19	6.33	6.33	2	3
Schlichte, K.	3	1.49	Universität Bremen	Germany	3	42	14.00	14.00	2	3
Yuschenko, M.	3	1.49	National Academy of Sciences in Ukraine, Kiev	Ukraine	1	5	1.67	5.00	1	1

Source: Authors' compilation, 2021

Notes: TP=total number of publications; NCP=number of cited publications; TC=total citations; C/P=average citations per publication; C/CP=average citations per cited publication; h=h-index; and g=g-index.

Table 5 lists the contributions of the top five most productive authors on the connection of ungoverned spaces with nonstate armed groups' violence. There are 159 authors of the published documents generated. The most productive five of the 159 were identified, with the following total publications: M. Schuberth is the author of five publications, all of which are single authorships. The author's contribution accounts for 2.49 percent of the overall volume of publications. On the other hand, the writers' institution is not in the top five,

yet his country (the United Kingdom) is the most prolific in the world. Bosi, L., on the other hand, is the second most productive author, with three publications (1.49 percent) and 52 total citations. Murray, D. has three publications (1.49 percent) with 19 citations. With 42 total citations, Schlichte, K. has 3 documents represented by (1.49 percent). Finally, Yuschenko, M. has 3 articles with 5 citations (1.49 percent). The table below is a data presentation for the top 6 most productive sources.



Table 6: Top 6 most productive document sources

Source Title	TP	TC	Publisher	Cite Score 2020	SJR 2020	SNIP 2020
Studies in Conflict and Terrorism	22	90	Taylor & Francis	4.0	0.545	1.328
Small Wars and Insurgencies	19	29	Taylor & Francis	1.5	0.485	1.075
International Review of the Red Cross	0	4	Cambridge University Press	0.6	0.278	0.729
Journal of Conflict and Security Law	13	81	Oxford University Press	1.0	0.153	0.497
Stability	63	61	Ubiquity Press	1.5	0.295	0.380
Yearbook of International Humanitarian Law	47	69	Cambridge University Press	0.8	0.208	0.574

Source: Authors’ compilation, 2021

Notes: TP=total number of publications; TC=total citations

Table 6 shows the six most productive document source titles. There are 21 sources from which the total publications were generated. Out of this, 6 were selected being the topmost productive sources. ‘Studies in Conflict and Terrorism’ is the most productive source title, with 226 publications and 901 citations. ‘Small wars and insurgency’ is the second most productive source, with 190 publications and 294 citations. ‘International Review of

The Red Cross’ is the third most productive source, with 135 publications and 81 citations. However, the ‘Journal of Conflict and Security Law’ has 63 publications and 61 citations. ‘Stability’ has 47 publications and 69 citations. At the same time, the ‘Yearbook of International Humanitarian Law’ has 30 publications and 23 citations. Table 7 shows the 9 most cited publications among the 201 used in this study.

Table 7: Top 9 highly cited publications on Ungoverned spaces and armed groups violence

Author	Title	Year	Cites per year	Cites per Author
E. Nussio	The Role of Sensation Seeking in Violent Armed Group Participation	2020	7	7
A.P. Harrison,	Ceasefire state-making and justice provision by ethnic armed groups in	2019	6	6
H.M. Kyed	Southeast Myanmar			
S. Otto	The Grass Is Always Greener? Armed Group Side Switching in Civil Wars	2018	5.33	16
A. Arjona	Civilian Cooperation and Non-Cooperation with Non-State Armed Groups: The Centrality of Obedience and Resistance	2017	6.5	26
A. Hoover	The commander’s dilemma: Creating and controlling armed group violence	2016	12.6	63
Green				
P. Staniland	Armed Groups and Militarized Elections	2015	5.67	34
E. Nussio, B. Oppenheim	Anti-social capital in former members of non-state armed groups: A case study of Colombia	2014	3.14	11
C. Raleigh, C. Dowd	Governance and conflict in the Sahel’s Ungoverned space	2013	3.63	15
L. Bosi, DD. Porta	Micro-mobilization into Armed Groups: Ideological, Instrumental and Solidaristic Paths	2012	4.89	22
O. Bangerter	Reasons why armed groups choose to respect international humanitarian law or not	2011	4.7	47

Source: Authors’ design, 2021

Table 7 shows the nine most cited documents on ungoverned spaces and

armed groups’ violence. The article “The role of sensation seeking in violent armed



group participation,” published by Nussio E in 2020, is the most cited publication, with 7 citations for the year and 7 citations for the author. Another one is the article titled “Ceasefire State-making and justice provision by ethnic armed groups in Southeast Myanmar,” which Harrisson and Kyed published in 2019. It has 6 citations since the year of publication, with 6 citations for the author. However, among the top-cited publications, Raleigh and Dowd’s only article published in 2014,

titled “Governance and conflict in the Sahel’s Ungoverned space” appeared to have directly touched the link between ungoverned space and armed groups, with 3.63 annual citations and 15 total citations for the author. At the same time, the rest have discussed either activities of the nonstate armed groups, international humanitarian laws, or other related matters. Table 8 shows contributions from the seven most contributing countries.

Table 8: Top seven most contributing countries

Country	TP	%	NCP	TC	C/P	C/CP	h	g	TLS
United States	51	25.37%	43	422	8.27	9.81	13	19	1402
United Kingdom	29	14.43%	24	198	6.83	8.25	9	12	1107
Switzerland	21	10.45%	18	150	7.14	8.33	7	11	1000
Canada	12	5.97%	7	36	3.00	5.14	3	5	229
Germany	12	5.97%	11	84	7.00	7.64	5	9	664
Colombia	9	4.48%	4	28	3.11	7.00	2	5	324
Sweden	8	3.98%	7	89	11.13	12.71	5	8	638

Source: Authors’ compilation, 2021

Notes: TP=total number of publications; NCP=number of cited publications; TC=total citations; C/P=average citations per publication; C/CP=average citations per cited publication; h=h-index; and g=g-index.

Table 8 shows the seven most productive countries regarding ungoverned spaces and armed groups violence publications. With 51 total publications and 422 citations, the United States is the most active contributor. Its contributions account for 25.37 percent of the total. Furthermore, the United Kingdom is the second most productive country, with 29 publications and 198 citations, accounting for 14.43 percent of the total. Switzerland is the third most Furthermore, the UK and Switzerland’s cases are linked to their support for the US in the war on terror. On the other hand, the remaining countries provided 100 papers with 237 citations, accounting for 49.75

productive country with 21 total publications and 150 total citations, all represented by 10.45 percent. On the other hand, the United States, the United Kingdom, and Switzerland have a combined total of 101 publications and 770 citations, accounting for roughly 50.25 percent of the 201 total articles. This may be because the US popularized ungoverned spaces as a concept and counterinsurgency policy through several publications and military campaigns.

percent of the total. Table 9 shows the contribution of the five most productive institutions in studying ungoverned spaces and armed groups.

Table 9: Top five most productive Institutions

Institution	TP	%	Country	NCP	TC	C/P	C/CP	h	g
Université de Genève	5	2.49%	Switzerland	5	38	7.60	7.60	4	5
University of Essex	4	1.99%	England	3	19	4.75	6.33	2	4
King's College London	4	1.99%	England	3	36	9.00	12.00	3	3
Pontificia Universidad Javeriana	4	1.99%	Colombia	2	3	0.75	1.50	1	1
Institut de hautes études internationales et du développement, Geneve	4	1.99%	Switzerland	4	15	3.75	3.75	2	3

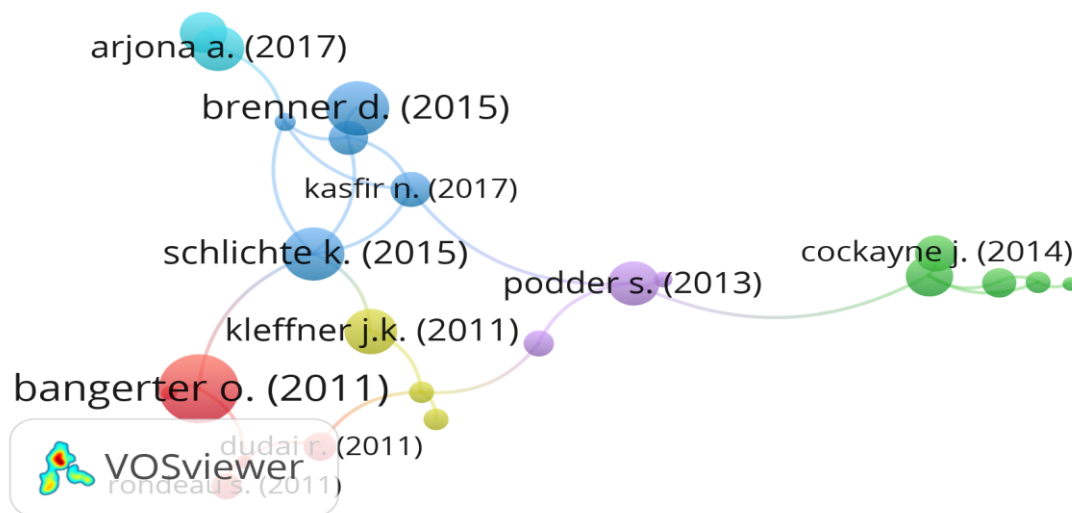
Source: Authors' compilation, 2021

Notes: TP=total number of publications; NCP=number of cited publications; TC=total citations; C/P=average citations per publication; C/CP=average citations per cited publication; h=h-index; and g=g-index.

In addition, Table 9 shows the five most productive institutions in the study of ungoverned spaces and armed groups' violence. The Université de Genève has contributed 5 documents, accounting for 2.49 percent of all publications, with 38 citations matrix. However, the remaining four Universities, including the University of Essex (4 publications), King's College London (4 publications), Pontificia

Universidad Javeriana (4 publications), and Institut de hautes études internationales et du développement, Geneve (4 publications) also. One of the most notable characteristics of this category is that all of the contributing institutions have meager contributions, indicating a scarcity of literature in the field.

Fig. 3: Knowledge base and documents citation analysis.



Source: Authors' design, 2021

In this study, we have identified the knowledge bases on the connection between ungoverned spaces and armed groups violence by analyzing the documents citation matrix. The study used VOSviewer to create a network visualization of the cited documents on ungoverned space through citation analysis. Each point in Fig. 3

indicates a cited publication, and the shade of the points corresponds to the number of citations. The color of the cited document with the most citations, on the other hand, indicates reddish. Also, the minimal citation matrix of a cited document was set

at 5 in this study. Then, in Fig. 3, 74 of the 201 retrieved cited documents are displayed. In addition, Table 7 also includes a list of the top ten most-cited publications. Therefore, the themes of the 9 most cited publications on ungoverned spaces were categorized under knowledge domains of armed groups (AG), humanitarian laws, political violence, armed conflict, and ungoverned spaces.

However, the document with the most citation is “Reasons why armed groups choose to respect international humanitarian law or not” by Bangerter (2011), published in the *International Review of Red Cross*. This paper has 47 citations, and 3 links, suggesting that this document is crucial in the knowledge base of ungoverned spaces studies. This article discusses how armed groups agree to respect or not the International Humanitarian Laws (IHL). It argues that armed groups respect the IHL because they perceive the self-image and military advantage. On the other hand, they decline to respect the IHL because of the group’s objectives and what the IHL represents. This is one area that scholars are still debating: who is responsible for the humanitarian challenges coming because of the activities of armed groups.

Another document is “Ashes of Cooptation: From armed groups fragmentation to the popular insurgency in Myanmar” by Brenner (2015), published in ‘*Conflict, security, and Development*’. This paper has 1 link strength and 33 citations, suggesting it is the second most connected paper. It is important in studies of ungoverned spaces, armed groups, and insurgency. According to this article, dealing with armed organizations through economic incentives usually results in fragmentation, increasing contestation, and resistance. The author made this case with the help of the Kachin Independent Organization (KIO). Another document is “The applicability of production in the field, notably in conceptualization, which frequently poses

international humanitarian law to organized armed groups” by Kleffner (2011), published by the ‘*International review of the red cross*’. This paper has 2 links, strengths, and 26 total citations. This document, however, investigates why the IHL is binding on organized armed organizations and how it is construed based on five explanatory frameworks. Another paper is “Civilian cooperation and non-cooperation with nonstate armed groups: The centrality of obedience and resistance” by Arjona (2017), published by ‘*Small Wars and Insurgencies*’. This paper has 2 links strengths and 26 total citations, implying that the paper is equally essential in generating knowledge and research on ungoverned spaces and armed groups. In this regard, this document noticed a kind of cooperation between armed groups and civilians. Sometimes, when civilians cannot sustain the force of the armed groups, they often resist it.

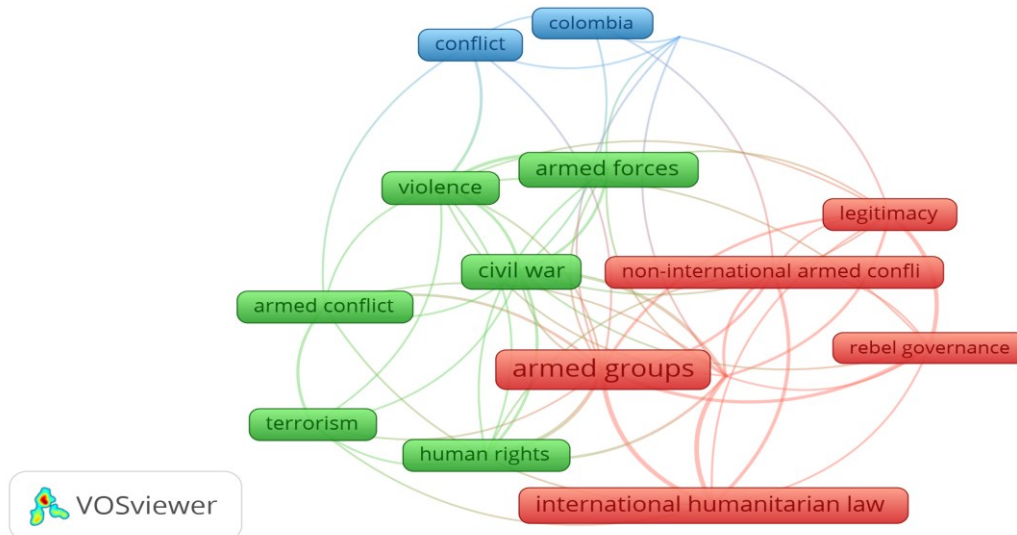
Another paper is “Non-state armed groups and stability: reconsidering legitimacy and inclusion” by Podder (2013), published in ‘*Security Policy*’. This paper has 4 links, strengths, and 25 total citations, suggesting that the paper also is connected and cited variously in the knowledge base of ungoverned spaces and armed groups violence. The author discusses how armed groups are co-opted to participate in post-counter-terrorism state-building. It emphasizes distinguishing between different armed groups based on resources, legitimacy, reliability, and partnering potentials. Another one is “The Challenge of community-based armed Groups: Towards a Conceptualization of Militias, gangs, and Vigilantes” by Schulberth (2015), published in ‘*Contemporary Security*’. This publication has four strong links and 22 total citations, demonstrating the document’s importance in affecting the direction of knowledge

obstacles in research and policy directions. The author differentiates between

community-based armed groups and militias, gangs, and vigilantes. Many frameworks have been developed through

this, and debates are still emerging in contemporary security studies.

Fig. 4: Co-occurrence and all keywords analysis



Source: Authors' design, 2021

VOSviewer was used in this study to create a co-occurrence network to reveal the discipline's most important hotspots, as seen in Fig. 4. The VOSviewer relates the keywords to other terms used with other publications. The minimal co-occurrence restriction was set at 5 in this study. However, 15 keywords out of 519 generated from the 201 papers satisfied the criteria and were used in this analysis. As seen in Fig. 4, all 15 keywords have formed three clusters, each separated by color (Red, Green, and Blue), and are connected through the hotspot links. Each cluster has its own set of keywords, but they all share some relationships and interconnections that are converted into research hotspots. In general, cluster 1 focuses more on armed groups' struggles for legitimacy within countries and across borders and the humanitarian issues this poses. On the other hand, keywords in clusters 2 and 3 are associated with conflicts involving nations, civil society organizations, and civilian populations, such as civil wars. As a result, the three clusters are addressed in more detail below:

Cluster One (Red color): Research Direction and Knowledge Production

The keywords in cluster 1 (Red) reflect the research direction on ungoverned spaces and armed groups' violence. In this cluster, "armed groups" has 22 co-occurrence and 24 Total Links Strengths (TLS), "nonstate armed groups" has 17 co-occurrence and 19 TLS, and "non-international armed conflict" has 8 co-occurrence and 11 TLS. Others include "legitimacy," with 7 co-occurrence and 14 TLS, and "rebel governance," 9 co-occurrence and 13 TLS. However, in space securitization studies, ungoverned space is considered a key source of armed groups violence (Ojo, 2020a). This viewpoint arose from current concerns about deteriorating security around the world (Rabasa et al., 2020a), which is triggered by two primary factors: (1) how governments have abandoned certain places generally referred to as "ungoverned". Many countries, for example, have appeared to be inadequate in dealing with concerns about ungoverned space (Magaloni et al., 2018; Ojo, 2020a; Olaniyan, 2018b). (2) recently, activities of

armed groups within ungoverned spaces are increasingly becoming more sophisticated (Rollins & Wyler, 2011). However, the ongoing debate on ungoverned spaces focuses on conceiving the keywords that Clunan Trinkunas (2010) felt would provide answers. Attempts by scholars to clear the discrepancies in the conceptualization of ungoverned spaces and armed groups have led researchers to equate ungoverned spaces with failed or weak state structures alongside sovereignty. However, from the beginning, ungoverned space is presented as a misnomer in terms of conceptualization (Menkhaus, 2007), which led to different interpretations of the knowledge and research base of ungoverned spaces.

Clusters Two (Green) and Three (Blue): Managing, Legal Status, and Legitimacy of Armed Groups

In cluster 2 (Green), 6 keywords define the cluster's contents. The first is "armed forces," with 7 links, 11 co-occurrence, and 10 TLS. Another is "Violence" with 10 links, 9 co-occurrence, and 14 TLS. There is also "Civil War" with 10 links, 11 co-occurrence, and 15 TLS. There is also "Armed conflict" with 7 links, 7 co-occurrence, and 9 TLS. The next is "Terrorism," with 6 links, 8 co-occurrence,

and 7 TLS. Lastly, there is the "Human right" with 7 links, 7 co-occurrence, and 12 TLS. However, in cluster 3 (Blue), there are only 3 keywords. One of the keywords is "conflict," with 5 links, 7 co-occurrence, and 6 TLS. The "Colombia" also has 4 links, 6 co-occurrence, and 4 TLS. Finally, there is "Political Violence" with 6 links, 6 co-occurrence, and 6 TLS. Moreover, like cluster one (Red), the contents in these two clusters are strongly directed at the conflicts and armed groups within the ungoverned spaces. In addition, many armed groups have been using the ungoverned spaces to advance their cause (Nyaburi & Hamani, 2019) which often causes humanitarian problems. On the other hand, many governments have created various demobilization plans to ensure the successful management of armed groups. Unfortunately, they all have failed to contain the excesses of the armed groups. Furthermore, according to the network of keywords presented, "armed groups" is the highest most linked keyword in ungoverned space research in the three clusters. It is linked to all keywords used in various research techniques with 12 links, 22 co-occurrence, and 24 TLS.

Fig. 5: Bibliometric coupling of 42 countries.

Source: Authors' design, 2021

In Fig. 5 above, the result of the VOSviewer for bibliometric coupling indicates 42 countries with a minimum of 1 publication, out of which 35 are selected based on 1 minimum citation. However, there is a connection between all countries except Cuba, Egypt, and the Czech Republic. In this category, there are 14 clusters; cluster 1 has Brazil, Canada, Colombia, Finland, France, Lesotho, and Nigeria. Cluster 2 has Australia, Belarus, Belgium, Denmark, Netherlands, and Switzerland. Cluster 3 has Germany, South Africa, and Ukraine. Cluster 4 has Ethiopia, Turkey, and the United States. More so, cluster 5 has India and Iraq. Cluster 6 has India and Israel. Cluster 7 has Japan and the United Kingdom. Cluster 8 has Ireland and Norway. Cluster 9 has Mexico and Spain. Cluster 10 has New Zealand and Thailand. Cluster 11 has only Cuba, cluster 12 has the Czech Republic, cluster 13 has Egypt, and cluster 14 has only Italy—total links 204 and TLS 5308.

According to VOSviewer's analysis, 42 countries contributed to the 201 papers on the connection of ungoverned spaces to

armed groups violence. Table 8 indicates the top seven most productive countries, which have generated 70.65 percent of the total publications (142 documents). The USA has the most significant number of publications published on ungoverned spaces and armed groups, with 43 documents and 422 citations, accounting for 25.37 percent of the total publications. The United Kingdom ranks second with 24 documents and 198 citations, amounting to 14.43 percent, while Switzerland ranks third with 18 documents and 150 citations, amounting to 10.45 total citations. Sweden ranks Fourth with 7 publications and 89 citations, amounting to 3.98 percent of the total publications. Germany ranks fifth with 11 documents and 84 citations, amounting to 5.97 percent of the total publications. Canada ranks Sixth with 7 documents and 36 citations, amounting to 5.97%. Colombia ranks Seventh with 4 documents and 28 citations, amounting to 4.48 percent of the total publications. Lastly, the USA and the United Kingdom have also taken the leading research position on ungoverned space and armed groups.

Furthermore, Fig. 5 shows a network map created by VOSviewer for cross-national collaboration to examine country co-

authorship of publications on ungoverned space and armed groups violence. A total of 35 countries were involved in the study, each of which published at least 1 document with at least 1 citation. The circle size on the map represents a country's influence in the study sector, while the clusters represent the countries' collaboration networks. Table 6 shows 7 countries (the United States, the United Kingdom, Canada, Germany, Switzerland, Colombia, and Sweden) that have generated the greatest partnership. Furthermore, as shown in Fig. 4, countries that belong to the most significant cluster have several partnerships in the studies of ungoverned space and armed groups, such as the USA (1402 TLS), UK (1107 TLS), Canada (229 TLS), Sweden (638 TLS), Germany (664 TLS), Colombia (324 TLS), and Switzerland (1000 TLS). As a result, the largest cluster, led by the United States, shows considerable partnerships. In contrast, minor clusters such as Cuba, Egypt, and the Czech Republic show less collaboration in this subject.

4. Discussion of Findings

The study found that the annual publication patterns on ungoverned spaces and armed groups are not encouraging. It shows a poor performance and volatility among countries, institutions. The results indicate that this area is still under-researched, particularly between 2011 and 2020, and that further work is required. While 7 of the 42 countries have the most publications and collaboration, their interconnection has not delivered the most desired result of producing more publications with verifiable contents and explanations of the activities of armed groups in ungoverned spaces. As a result, further research, collaboration, and publications are required. However, this trend indicates that even countries that suffer most from the effects of armed groups activities and ungoverned spaces do not pay much

attention to understanding it and yet act accordingly.

For example, Nigeria and Colombia have suffered significant consequences of activities of armed groups in ungoverned spaces and have been included in the largest collaborative cluster. Yet the study reveals that their publication trends have not been as encouraging as expected. Although, in the case of Nigeria, a few authors have contributed that ungoverned space is a significant source of armed groups violence in the country (Bernard & Daful, 2021; Ojo, 2020b; Olaniyan, 2018a). More so, Nigeria is among the top-ranking countries that the studies of the US indicated to have suffered the effects of ungoverned spaces and armed groups violence (Rabasa et al., 2020a). On the other hand, Colombia has received more attention in the studies of ungoverned space and armed groups violence compared to Nigeria (Clunan & Trinkunas, 2010a). Furthermore, the study also found that the journal of *Small Wars and Insurgencies* has the most publications and citations of any source type. Additionally, the *Red Cross International Review*, on the other hand, is the second most productive journal. The journal contains publications published on humanitarian emergencies caused by the activities of armed groups in ungoverned spaces. In addition, findings for the citation network of cited documents reveal that documents mainly focus on the issues of "armed groups", "International humanitarian laws", and "armed conflict". However, keyword co-occurrence analysis reveals the research direction more on conceptualizing critical concepts while explaining the armed groups' activities and their legitimate basis within the state's weak penetration of ungoverned spaces. Moreso, the limitation of this paper is that it did not consider any publication outside the Scopus database, which we hoped could be remedied by considering other factors affecting ungoverned spaces. Other than Rabasa et al. (2020), which discussed dimensions of ungovernability and armed

groups violence, no other documents have directly addressed other sources of armed groups violence, even though they have explored political dimensions of ungovernability in ungoverned space (Teo, 2018). As such, this bibliometric research supports Oni and Adepoju (2014) that more research is needed on factors such as the economic and sociocultural dimensions of armed groups activities in relation to ungoverned space.

5. Conclusion and Recommendations

This paper presents a visualized bibliometric analysis of the research trends on the ungoverned spaces and armed groups violence within the security studies. We developed tables and maps indicating annual publication trends, countries, institutions, author's contributions, and types and sources of studies on ungoverned spaces and armed groups violence. However, VOSviewer generated the document citation analysis, keyword co-occurrence analysis, and bibliometric coupling analysis. The knowledge bases, research hotspots, and frontiers were identified through the interconnectedness analysis of the ungoverned spaces and armed groups activities. Findings from this paper indicate a weak and poor publication performance, with high volatility among countries and institutions. It shows that the connection between ungoverned spaces to armed groups violence is under-researched, particularly between 2011 and 2020. The operational consequences are that even countries that suffer most from the effects of armed groups activities and ungoverned spaces pay little attention to researching and understanding it and yet act accordingly. The paper suggests more rigorous research on the roles of ungoverned spaces in driving violence globally but with more emphasis on most affected countries. This is because armed groups violence is causing many deaths globally, and the groups find homes in ungoverned spaces. Additionally, order

maintenance across the ungoverned spaces should also be prioritized in the research trends since the spaces feature capacities as sources of violence, especially in vulnerable countries. However, this study did not consider documents from other databases as indicated in the methodology section, such as google scholar. Hence, it forms the limitation of the study.

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