



Bibliometric Analysis Using Bibliometrix R to Analyze Social Media Use in Political Campaigns.

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Abstract

The role of social media in political campaigns has been a significantly growing phenomenon over the past two decades. The proliferation of this new medium has prompted various evolving research questions aligning with the increasingly progressive practices of digitalizing political campaigning. Considering tracking advancements in this field, the study analyzes the publication trends and patterns in scholarly journals and conference proceedings about the utilization of social media in political campaigns from 2008 to 2023. Employing a qualitative science mapping approach, data are extracted from the Scopus database using keywords related to social media usage in political campaigns during the specified timeframe. Data analysis uses the recent science mapping R package called Bibliometrix, supplemented by network mapping visualization and keyword density analysis using VOSviewer. Findings reveal a notable increase in publications, with the United States emerging as the foremost contributor, demonstrating a more than eighty percent increase since 2011. Our study found that Information Communication and Society is the top publisher, and the University of California has the most institutional affiliations. Twitter is the most researched social media platform, and recent publications focus on using computation-based techniques like machine learning and natural language processing to study social media in political campaigns.

Keywords: social media, political campaigns, bibliometric analysis, bibliometrix

Paper type: Research paper

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INTRODUCTION

Political marketing practice constantly faces environmental aspects, encompassing the media, disrupting political markets, and technology. This necessitates political parties and candidates to leverage every potential avenue to enhance the effectiveness of their campaigns for product distribution and political communication, and one of which is the utilization of social media. Over the past two decades, the integration of social media into political marketing communication strategies has progressively gained traction and emerged as a prominent facet of digital political campaigns. Specifically, as one among various communication channels, social media assumes a pivotal role in the online presence of parties and candidates, facilitating the establishment of relationships and interactions with voters, fostering political brand affinity, and stimulating voter turnout (Hudders et al., 2021). Beyond serving as platforms for content consumption, social media also provides opportunities for content production and political brand advocacy to appeal to a wider audience (voters). Consequently, owing to this pivotal role, a considerable portion of the marketing investment costs is allocated to social media (online) campaigns (Dabbous & Barakat, 2020; Hasan & Sohail, 2020). Prior research acknowledges the influential role of social media in shaping voters' preferences towards candidates or parties as evidenced by studies such as Dimitrova & Bystrom, 2013; Jennings et al., 2017; von Sikorski, 2022; Williams & Gulati, 2013, which delve into how voters evaluate presidential candidates based on their social media presence. Apart from the campaign management perspective, scholars also perceive social media as a new medium that shapes new participatory behaviors, including following politicians' social media pages, engaging in political discussion through comments, sharing political content, and participating in online petitions, all of which are conceptualized as online political participation Diehl et al., (2016; Kim & Chen, (2016); Yamamoto & Morey, (2019); Yang & DeHart, (2016).

Within the realm of political marketing research, the emergence of social media is believed to have influenced political communication practices within campaign channels, including political branding (Marquart et al., 2020; Mochla et al., 2023; Subekti et al., 2022). Similar studies also scrutinize social media's role in political campaigns, such as (Munoz & Towner, 2021) regarding candidate evaluation; O'connell (2020) on how social media enhances audience response;

and promotional tools aimed at capturing the attention and perceptions of young voters (Abid et al., 2021). Furthermore, research has also explored voter segmentation based on their motivation to engage with political content on social media (Mochla, Tsourvakas, & Stoubos, 2023). Other studies demonstrate the substantial impact of social media on political campaigns. For instance, (Stier et al. (2018) discuss the influence of social media on political parties and candidates, as well as the determinants of campaign effectiveness on these platforms. They delve into the impact of social media on voter evaluation and vote intention toward candidates (de-Oliveira et al., 2022); the utilization of social media platforms in shaping voters' perceptions as well as fostering para-social communications with candidates (McGregor, 2018); and how candidates' social media posts contribute to voter engagement (Boulianne & Larsson, 2023). Considering this, therefore, there is a growing demand for applying such advanced online communication techniques using social media. Hence, supported by this research evidence, the phenomena of political campaigns on social media are intriguing to explore, particularly in understanding the effects of the platforms on voter behavior towards political parties and candidates.

The political market characteristics also play a crucial role in determining the effectiveness of political campaign practices through social media. Drawing upon previous meta-analyses, such as Boulianne (2015); and Skoric et al. (2016) acknowledge that there has been a significant development in understanding the influence of social media on political behavior, political participation, and political engagement by aggregating research data on the related topics and find varying results. Boulianne's study (2015), which collected around 170 research papers, indicated that only 36 percent demonstrated statistically significant positive effects. However, other studies suggest that the positive relationship between Internet and social media usage and political engagement varies depending on the type of usage. For instance, Dimitrova & Bystrom (2013) demonstrated that active social media usage positively impacts political participation. One variable believed to strengthen this relationship potentially is the preference for specific social media platforms such as Twitter, Instagram, or Facebook. The findings of these various research studies on social media and

political research further highlight the dynamic nature of this topic, making it continually intriguing to explore. In addition to the interest in expanding the body of knowledge, developing research on this topic is also valuable for theory building. In agreement with Dimitrova & Matthes (2018), research on the role of social media in politics (including political campaigns) goes beyond merely explaining the relationship; it also explores how social media is used as part of campaigns and as a variable that explains the phenomenon of voting behavior. Thus, it is imperative to conduct a comprehensive exploration of recent research developments as part of the endeavor to contribute to the construction of relevance and the advancement of emerging themes relevant to the phenomenon of social media utilization in political campaigns.

Previous research from Subekti et al. (2022) indicates an exploration of the scientific themes regarding the specific role of social media in the practices of political party campaigns on social media, which also supports the significance of online campaign practices in altering the landscape of political communication for political parties. Drawing from data sources documented in the Scopus database, they demonstrated that studies on party campaigns through social media have significantly increased over the period from 2015 to 2021. Furthermore, their study indicates a relationship between party habits, which no longer rely solely on winning strategies on conventional styles and going beyond that, their attitude towards the decision to present online campaigns has become a significant phenomenon. Indeed, social media aids political parties in reaching the widest possible audience to expand their branding amplification and gain popularity (Falasca et al., 2019). Therefore, it cannot be denied that the tendency of political campaign practices to reach as many audiences as possible has become a new habit for political parties, including the candidates within them. In addition, the findings of Subekti et al. (2022) study conclude that there is a positive relationship between the growing initiatives of contemporary online political campaign practices, including various studies that examine this phenomenon. However, it also perceived that their work has shortcomings in terms of the limited scope of the objects studied, which are restricted to political parties rather than a comprehensive study of online political campaign practices, the period of the literature study, and the thematic mapping from previous studies to the construction and analysis of contemporary themes in the study of social media

usage for political campaigns. Therefore, addressing these limitations, this research attempts to bring about scientific research mapping with a broader thematic scope and a longer period range, as well as presenting thematic analysis to explore the thematic developments in the related field over time.

Employing a qualitative research design with bibliometric analysis for science mapping and utilizing a cutting-edge analysis using the R programming-based bibliometric package known as Bibliometrix, this article aims to outline the trends, including the thematic patterns and illustrates scholarly publications regarding the theme of social media use in political campaigns. Scopus database became the major data source for this research, expanding the time frame of related fields from 2008 to 2023 based on the search keywords of social media use in political campaigns. The data was retrieved from the Scopus database and exported in the .bib file extension. The main analysis is conducted using the latest R programming console. Meanwhile, we employ the latest version of VOSviewer with a pre-processing step to clean the data from noises before conducting keywords networking, overlay, and density analysis. The output of our analysis seeks to discover the global publication year, the corresponding author's country in answering what country has most of the publications in the related field, analysis of the document source, the author analysis, the terms networking, overlay, and density, and thematic evolution analysis to figure out what recent themes have been used by scholars and what terms or concept do scholars have to accommodate for further research. Therefore, we expect the outcome of this study to help scholars brainstorm ideas and find novelties based on the newest and unstudied concepts for forthcoming research agenda within the theme of social media utilization in political campaigning.

Bibliometrix: An R-Tool for Analyzing and Mapping

In scientific literature mapping studies, bibliometrics is a method that has been utilized in almost every research field, including marketing. According to Aria and Cuccurullo's exposition (2017), bibliometric methods can address at least three main research questions in literature mapping studies. Among these are (1) the ability of bibliometrics to be utilized for identifying the basis of a research

topic, including its structure; (2) its effectiveness in providing researchers with a way to test and understand the fundamental structure of research, such as the concepts used; (3) its provision of a feature to visualize existing data findings, including the visualization of research networks within a specific subject of study. Literature mapping studies are generally understood as a comprehensive phase in understanding the development of a study, and most importantly, according to Zupic & Čater (2015), the standard workflow of literature mapping, such as bibliometrics, consists of five parts, including designing the timeline and subject of study to be analyzed, data collection, data analysis, data visualization, and interpretation of data findings. Moreover, to realize these steps, numerous bibliometric analysis tools are available today, such as the popular VOSviewer (Van Eck & Waltman, 2019), as well as SciMAT (Cobo et al., 2012), BibExcel (Persson et al., 2009), Science of Science (Sci2) Tool (Lewis & Alpi, 2017), and CiNetExplorer (van Eck & Waltman, 2014). However, in addition to these bibliometric tools, in 2017, Massimo Aria and Corrado Cuccurullo initiated a bibliometric analysis tool that operates within the environment and programming language R, known as Bibliometrix R-package. The Bibliometrix R works by executing commands through the library(bibliometrix) package, which can be downloaded through the CRAN Project.

Moreover, Bibliometrix R provides quantitative data analysis features for literature review studies (bibliometrics and scientometrics) written in the R programming language, known as open-source software. According to Aria & Cuccurullo (2017), bibliometric analysis with Bibliometrix R consists of three main stages: data collection related to Data Loading and converting the data into the R programming language context. The next stage is data analysis, which includes three sub-stages: descriptive analysis of the literature under review, network creation (such as bibliographic coupling, co-citation, collaboration, and co-occurrence analysis), and normalization analysis. The final stage is data visualization, including concept and network mapping. In the context of data collection and data loading, Bibliometrix R specializes in the two largest data sources for science mapping, namely Clarivate Analytics Web of Science (WOS) and Scopus Database. However, besides these, the package is also compatible with exporting data from other sources such as Dimensions, The Lens, PubMed, and Cochrane Library. This package also offers compatibility for exporting data

from multiple sources and provides an approach to analyzing conceptual structures through the Factorial Analysis (FA) feature, which is considered a state-of-the-art approach in text mining (Dervis, 2019). In addition to these advantages, Bibliometrix also offers bibliometric analysis for those who are not very familiar with the R programming language through the Biblioshiny feature, which is included in the library(bibliometrix) package upon installation in R. This feature can be executed by the command library(bibliometrix) followed by the biblioshiny() command, which will display the dedicated and user-friendly Biblioshiny portal. This research utilizes the Biblioshiny and VOSviewer features as tools to analyze and visualize the available data.

Social Media Use and Political Campaigns

Since the introduction of the Like button around the 2000s, social media has evolved from a mere entertainment platform to a medium that has transformed how many people perceive various objects, including in the context of branding. This transformation also extends to political campaign practices, which began to embrace virtual campaigning with the Obama Effect in 2008 and 2012, initiating a movement to bring political branding into the digital realm for presidential elections (Enli, 2017; Lee & Xu, 2018). Moreover, (Spierings & Jacobs, 2014) asserted that Obama was a figure who had a significant influence on the evolution of political campaigns in the United States by demonstrating the full potential of social media in his campaign, including mobilizing supporters (Zhang et al., 2010). Political marketing is about selling hopes and fears, which social media has capitalized on. Moreover, in the context of digital political campaigns via social media, voters' potential has expanded beyond consuming political content to sharing such content and even shaping or forming alternative opinions, giving rise to political influencer phenomena. The ability to reach a broad audience has made social media an arena for framing political issues. Sahly et al. (2019) explain that framing political issues on social media occurs in two parts. First, constructing messages to be conveyed, including developing impactful storytelling or 'story-selling' narratives (Jim A. Kuypers, 2010; Reese, 2001). Second, these messages are integratively targeted at the audience to transmit persuasive meanings. In a

political campaign, framing issues is common and essential in the modern political landscape. Due to the role of social media, every individual social media user is no longer just part of a mass but rather a member of a self-chosen network that is more independent and capable of adapting to the dynamic nature of social media (McQuail, 2020).

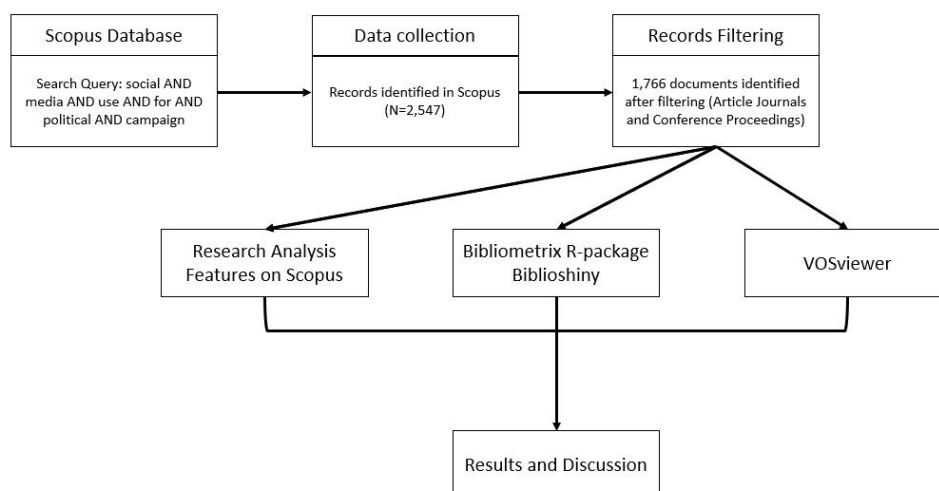
As social media is inherently dynamic, political parties and politicians (candidates) need to be able to create exceptional direct communication. This means that demographic categories no longer classify social media audiences but go more profound, such as segmentation based on topics of interest. Different social media platforms also require politicians to adapt appropriately (Hoffmann & Suphan, 2017; Jungherr, 2016; Jungherr et al., 2016). For example, Facebook offers Facebook Pages as an official page for political brands (political parties or candidates) to gather support and conduct virtual campaigning. Generally, the use of social media as a medium for political campaigns is an effort to expand the reach of campaign messages, which may not only target prospective voters but also serve as shared media capital or be quoted by news journalists (Kreiss, 2016; Kruikemeier et al., 2018). From the audience or voters' perspective, political campaigns through social media provide numerous benefits, especially regarding political education, political information, and candidate evaluation.

Moreover, these platforms also offer opportunities for voters to access information about candidates more efficiently. Voters can follow candidates' official accounts on platforms like Facebook, Twitter, or Instagram to gain direct insights into their policies, visions, and personal characteristics. Candidates can build their image and influence voter perceptions through consistent posts, videos, and messages. For instance, Bossetta & Schmøkel (2023); Kenski et al. (2022) found a positive relationship between voter behavior and their emotions in seeing and following candidates on multiple social media platforms and their evaluation of the candidates. The assumption is that the more active a candidate is on social media, the more likely they are to attract audience attention, leading to an increased evaluation of the candidate. Candidate evaluation is just one of the many variables derived from social media. Additionally, social media serves as an instrument with implications for other aspects, such as explaining voter preferences or even voting intentions.

METHODS

This study falls under the qualitative research design for a literature review on political campaign practices using social media. The qualitative method for science mapping research involves data collection techniques based on data obtained through Scopus, including records, books, and scholarly journal articles. Following Liang et al. (2022) research, bibliometric analysis involves presenting data on literature documents related to the subject of study, affiliations, authors or researchers, research areas including geographical regions, sources of literature materials, and, of course, the publication years of the literature. To conduct such analysis, firstly, the data extracted from the Scopus Search Engine database concerning the focus of mapping literature on political campaign practices in social media from 2008 to 2023. Scopus is one of the widely recognized databases of literature documents worldwide, known for its credibility in providing specific information regarding the required literature, such as metadata of existing articles and supporting data for bibliometric analysis studies (Subekti et al., 2022). Based on the timeframe between 2008 and 2023, a total of 1,766 literature documents related to the subject have been collected.

Figure 1.
Research Stages



In terms of conducting literature mapping, this study employed bibliometric techniques using the "bibliometrix" and "Biblioshiny" commands with the assistance of R software. Furthermore, for data visualization, this

research utilized the software VOSviewer. This software is widely popular for science mapping, particularly for its ability to visually represent document data in an easily interpretable manner, especially for research mapping purposes. Based on the provided explanation and research workflow, this study can address the development of political marketing literature, specifically focusing on the practice of political campaigns on social media from 2008 to 2023.

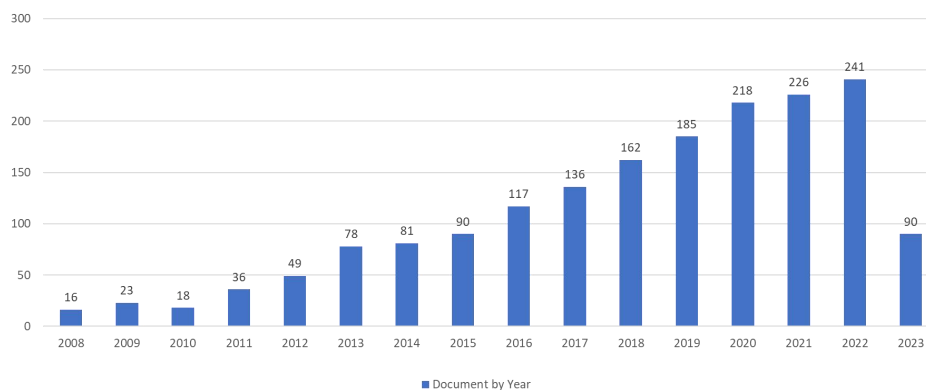
RESULTS AND DISCUSSION

The data processing results revealed 1,766 literature documents recorded in the Scopus Search Engine database regarding the research on the use of social media for political campaigns. This number consists of 1,530 scientific articles (journals) and 236 conference papers, accumulated within the timeframe from 2008 to 2023. This study mapped the literature based on the publication timeframe (in years), the country or location of publication, the source of journal articles, authors, and affiliations of publication documents across various educational institutions.

Global Publication Years

Social media has become increasingly popular for political marketing campaigns since the 2008 Obama Effect. Academic literature has noted the significant changes this has brought to political campaign activities, such as content marketing and targeted advertising. Researchers worldwide have taken an interest in understanding this phenomenon and its implications for political campaign practices. Figure 2 shows the trend of academic publications regarding the use of social media in political campaigns from 2008 to 2023.

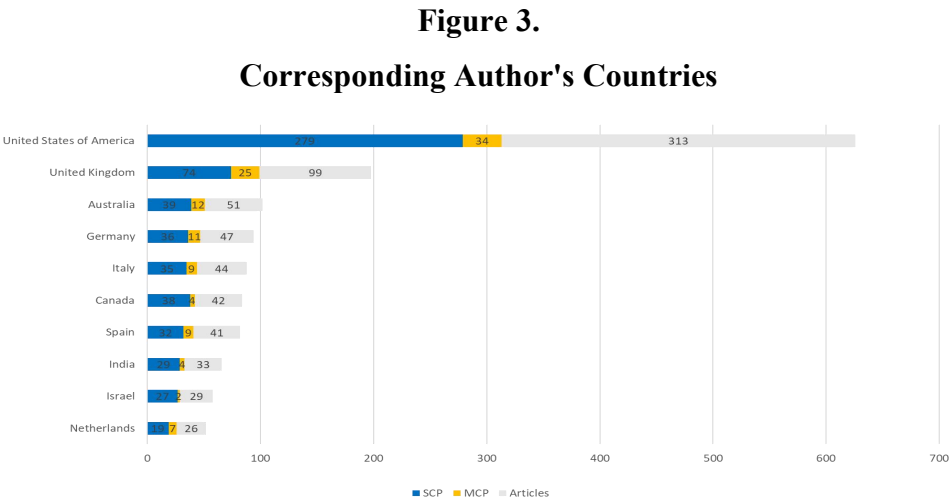
Figure 2.
Trends of Publications by Years.



The graph illustrates publication trends in scientific research on "social media use for political campaigning" from 2008 to 2023. Overall, since 2011, this theme has experienced a gradual increase, reaching 85% by 2022. In 2023, the number of publications on this topic is still at around 90 documents. Based on the progressive growth in the number of scientific publications, it can be projected that there will be a similar increase in 2023 as in the subsequent years. As political parties and candidate consider the crucial effect of social media on their communication strategy, the phenomenon is suspected to be growing over time. This is because social media helps politicians widen their presence and, of course, gain popularity, evaluation, and interactions with voters (Boulianne & Larsson, 2023; Harris & Harrigan, 2015; Karlsen & Enjolras, 2016).

Corresponding Author's Countries

Based on the geographical locations from 2008 to 2023, the publication trend in scientific research on the topic of "Social Media Use for Political Campaigning" is predominantly dominated by publications from the United States of America. Figure 3. displays the Top 10 countries with the highest number of corresponding authors in scientific publications.



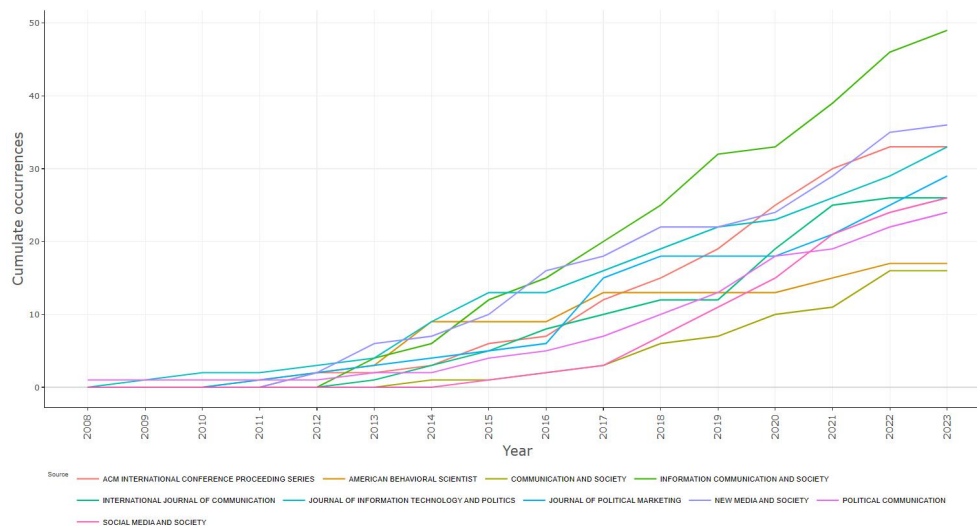
The graph illustrates the distribution of research publications based on the geographical locations of countries. The United States, in terms of both Single Country Publications (SCP) and Multi-Country Publications (MCP), stands as the

country with the highest number of publication trends. In the second position, we have the United Kingdom with a total of 99 documents from 2008 to 2023. In the Asian region, India ranks 8th among the top 10 countries in terms of scientific publications on social media and political campaigning. Meanwhile, Indonesia ranks 11th with 20 SCPs and 2 MCPs.

Document Sources Analysis

Based on the data gathered from the Scopus Database, there are several source names for the publications of scientific articles within the specified timeline. The document sources (Figure 4.) illustrate the top ten sequences of publication sources that are relevant and exhibit progressive trends each year from 2008 to 2023.

Figure 4.
Documents Per Year by Sources.



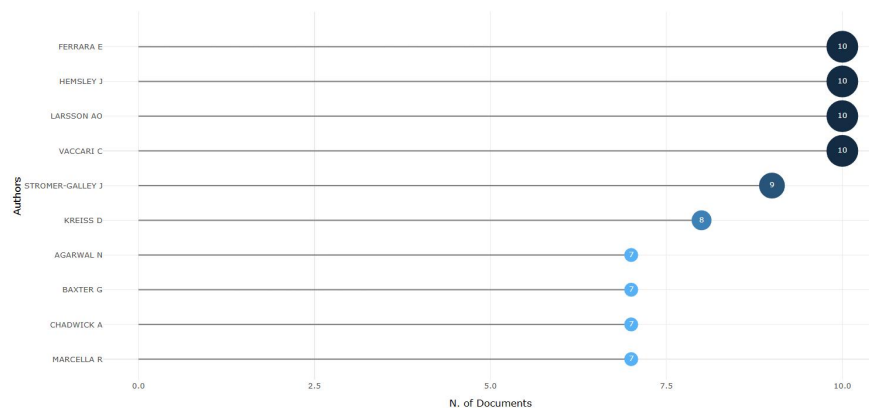
The fifth-ranked highest publication source based on the progression of scientific articles regarding the use of social media in political campaigns includes Information Communication and Society, New Media and Society, Journal of Information Technology and Politics, and a specific publication source for Conference Proceedings, namely the ACM International Conference Proceedings Series. Approximately forty-nine scientific article documents were published through Information Communication and Society, thirty-six documents in New Media and Society, thirty-three documents from ACM International Conference Proceedings Series and Journal of Information Technology and Politics, and

twenty-nine documents from the Journal of Political Marketing. From these various publication source names, it can be inferred that they are overall credible sources, categorized as Q1 according to the Scimago rankings. Regardless, all the publication source names included in the Scopus database are credible sources.

Authors Analysis

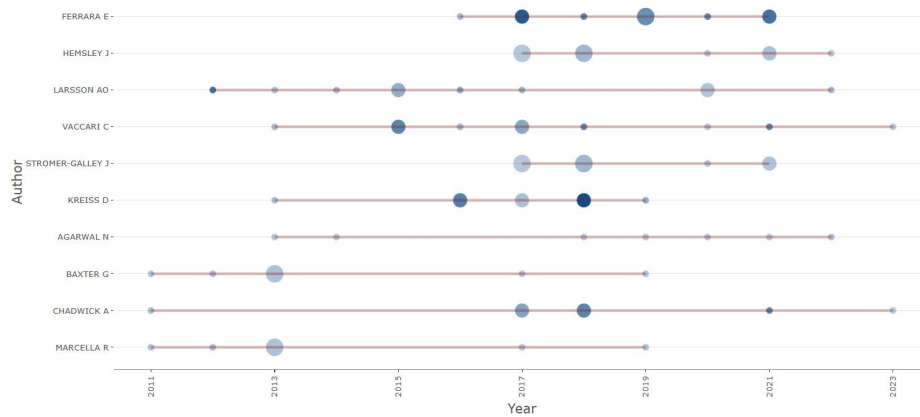
Throughout the period from 2008 to 2023, Scopus has recorded a total number of 1,766 articles with numerous authors or researchers involved. The Co-Authorship ratio per document is 2.51. The Figure 5. shows the sequence of the top ten authors most relevant to the topic of using social media for political campaigns.

Figure 5.
Most Relevant Authors



In Figure 5, Ferrara, E. is the most significant author in researching social media use in political campaigning from 2008 to 2023. All ten of the most relevant authors are concentrated within the productive period of 2011 to 2023. Figure 6 shows a graph of the productivity of these authors.

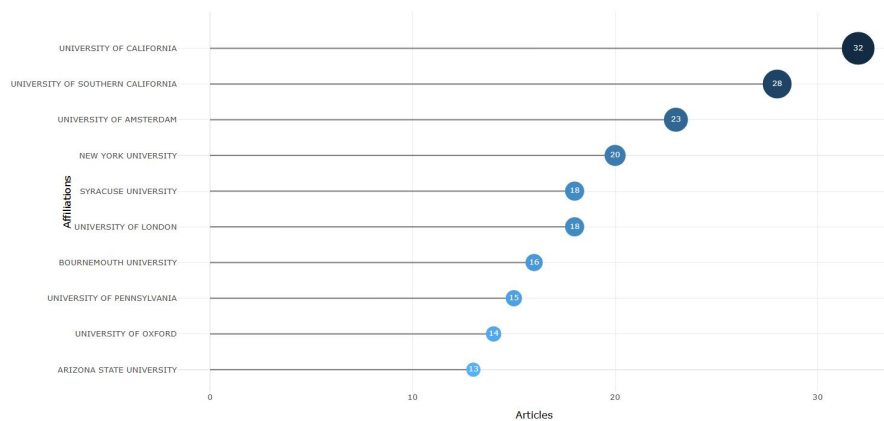
Figure 6.
Authors' Production Over Time (2011-2023)



Of the top four authors, according to the graph, Ferrara, E. is the author with the highest volume, with a total of ten published articles between mid-2016 and 2021. Another author with a wide distribution is Larsson, A.O., with ten articles published between 2012 and 2022. Additionally, Hemsley, J. has ten research articles, while Vaccari, C. has ten articles published between 2013 and 2023.

In addition to authorship analysis, the data collected in Scopus indicates that most affiliations related to this research topic are from the University of California. Further details are displayed in Figure 7.

Figure 7.
Authors' Production Over Time (2011-2023)



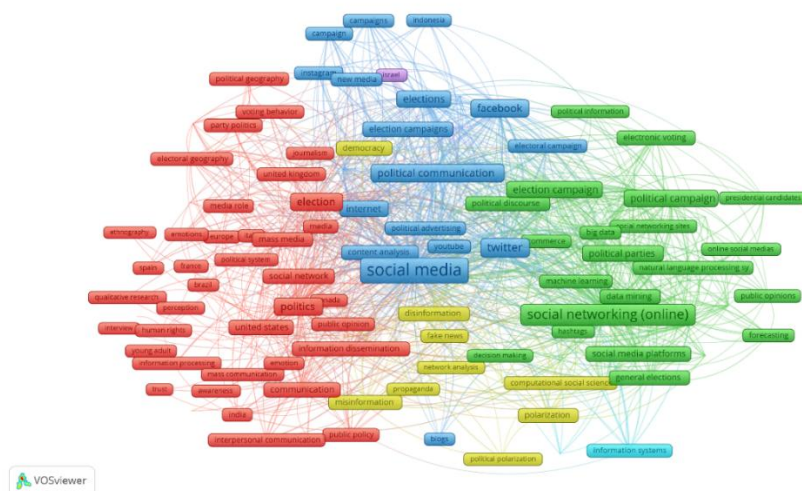
The University of California is the educational institution with the largest contribution to scientific publications related to the use of social media for political campaigning, with a total of thirty-two most relevant documents. It is followed by the University of Southern California with twenty-eight documents, the University of Amsterdam with twenty-three documents, and New York

University with approximately twenty documents. Other institutions thereafter have publication numbers below, which are around nineteen documents.

Visualization: Networking, Overlay, and Density

Utilizing the VOSviewer software, this article endeavors to delineate research topics through the framework of keyword co-occurrence analysis, wherein from all the related documents indexed by Scopus, there are approximately two hundred keywords can be discerned and categorized into six primary clusters.

Figure 8.
Visualization Based on Keywords



Based on the co-occurrence analysis of keywords, at least six clusters are distinguished by six different colors (see Figure 8.). For instance, the first cluster is represented by red, the second cluster by green, the third cluster by blue, the fourth cluster by yellow, the fifth cluster by purple, and the final (six) cluster by light blue.

Surprisingly, clusters 2 and 3 exhibit the highest occurrence values and total link strength among these six clusters. For example, Twitter (recently called X) has become one of the names of social media platforms that appears more than two hundred times, while social media appears 791 times, and social networking (online) appears 278 times. Several keywords identified from this analysis

demonstrate high occurrences and total link strength. In addition, Table 1. shows the top five ranked keywords.

Table 1.
Occurrences and Total Link Strength of Identified Keywords

Keywords	Occurrences	Total link strength
Social media	791	2947
Social networking (online)	278	1432
Twitter	246	913
Political communication	165	526
Facebook	154	579

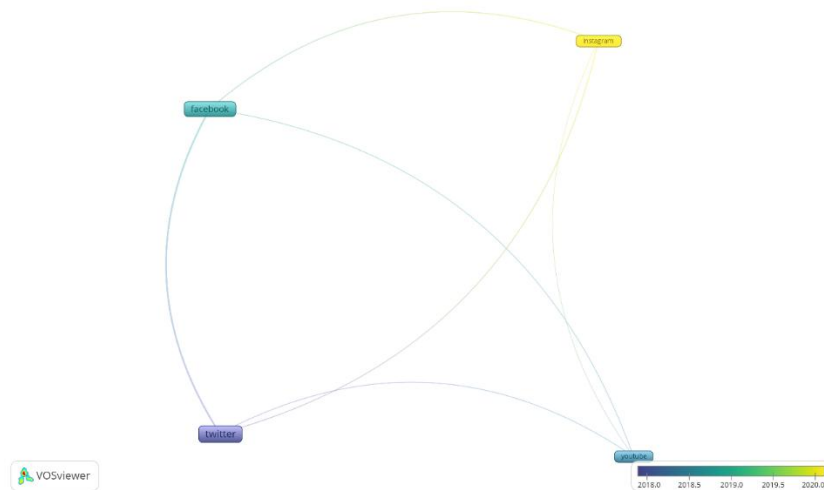
The keyword "social media" stands out as the most dominant aspect, with a total link strength of 2947. It is followed by the keyword "social networking (online)" with a total link strength of 1432. Keywords related to political communication appear with a total link strength of 526. The findings reveal the presence of two social media platforms among the top five in terms of total link strength: Twitter with 913 and Facebook with 579. Based on the findings of this analysis, there appears to be a correlation between the indexed scholarly publications in Scopus from 2008 to 2023 regarding the use of social media for political campaigns and the emergence of relevant keywords. Several political campaigning studies involving platforms like Twitter and Facebook, such as Jungherr et al. (2016) analyzing the campaign messages on Twitter during the German Federal Election in 2013; Stier et al. (2018) the mediating role of Twitter and Facebook for political communication; Boulianne & Larsson (2023) examine the voters' engagement toward candidate posts on Twitter, Instagram, and Facebook during the 2019 election.

In assessing the density of these keywords, the visualization using VOSviewer can be directed to display the density levels based on the hierarchical color scheme of red, yellow, green, and light blue. Such visualization aims to examine the level of topics or related issues studied, and the stronger emergence of deep red color from the keywords indicates a greater number of studies or research conducted based on those keywords, while moving towards the fading blue signifies a decreasing number of research studies on the related topics. The

Figure 9.

Figure 10.

Mapping Overlay Of Identified Documents Based On Social Media



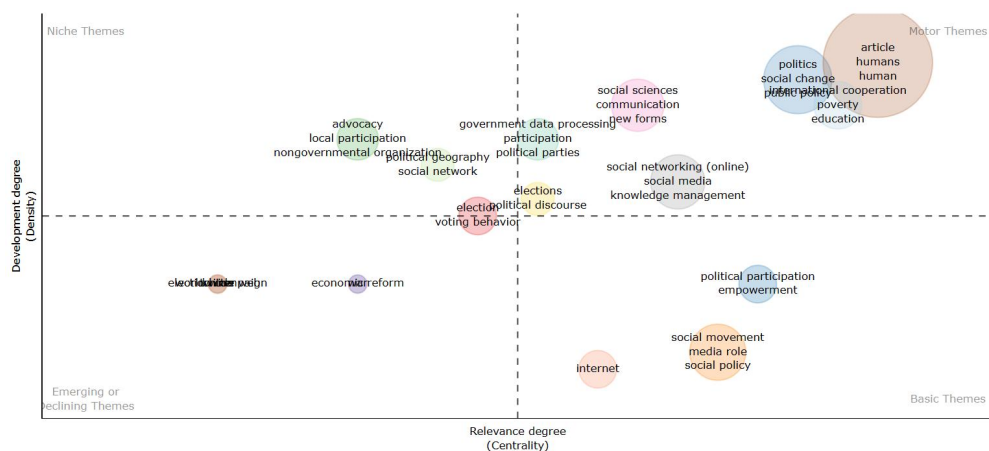
Keywords containing the four social media platforms were identified to appear predominantly between the years 2018 and 2020. Twitter emerged as the most extensively studied social media platform in the realm of social media utilization in political campaigning. However, the trend shifted towards other platforms like Facebook and YouTube. On the other hand, Instagram, a relatively new platform, was the subject of research from 2019 to 2021. This implies that there is still a relatively small body of research on the intersection of Instagram as a social media platform and political campaigns or political communication. Furthermore, it is noteworthy that as a social media platform, Instagram is particularly popular among young users and is the second most widely used social media platform after Facebook. Several studies have examined the use of Instagram in political campaigns, such as Munoz & Towner (2021), and they suggest that people click [Click or tap here to enter text](#). Studying the moderating effect of familiarity within the voters' engagement toward presidential candidate's posts and evaluation.

Thematic Evolution Analysis

This research utilizes the assistance of R software to conduct thematic analysis. Through the R-package Bibliometrix, this study performs thematic classification based on the thematic map feature provided by the package. The algorithm employed by Biblioshiny classifies research themes into four categories based on centrality and density (Mühl & de Oliveira, 2022): (1) motor themes, which are important themes and well-developed for research structure in the related field; (2) niche themes, which are unique and rare themes; (3)

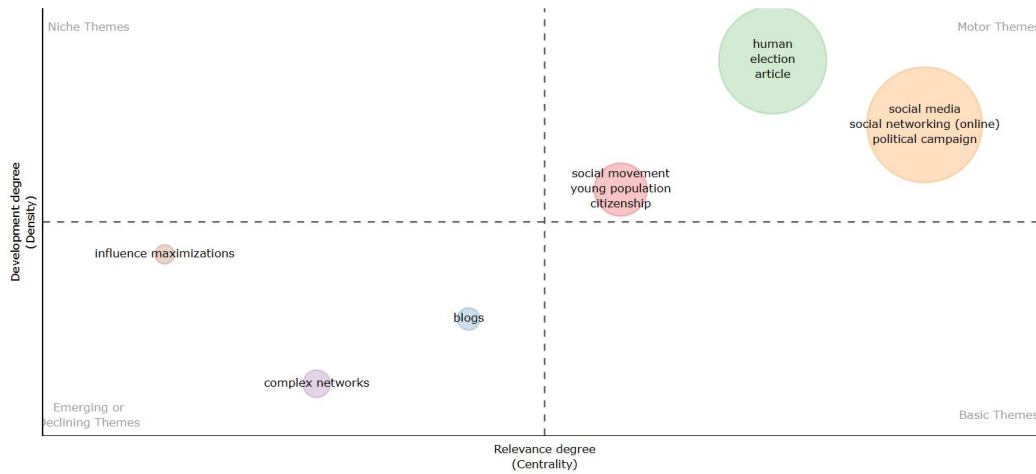
emerging/declining themes, representing themes with low density and centrality; (4) basic themes, encompassing general themes. The illustration below displays the quadrant representation of the analysis using the thematic evolution map for three time slices: 2008-2011, 2012-2020, and 2021-2023. The time slice of 2008-2011 is believed to mark the early stages of the proliferation of research on political campaigns through social media following the Obama Effect. The second time slice represents the initial development, likely triggered by the impact of social media campaigns in the U.S. presidential election, including the post-Trump era in 2016. The third time slice suggests that research on this theme has evolved towards a more methodological direction, indicating new advancements in methodology as an instrument for testing social media and political campaign research themes.

Figure 11.
Time Slice 1 between 2008 and 2011



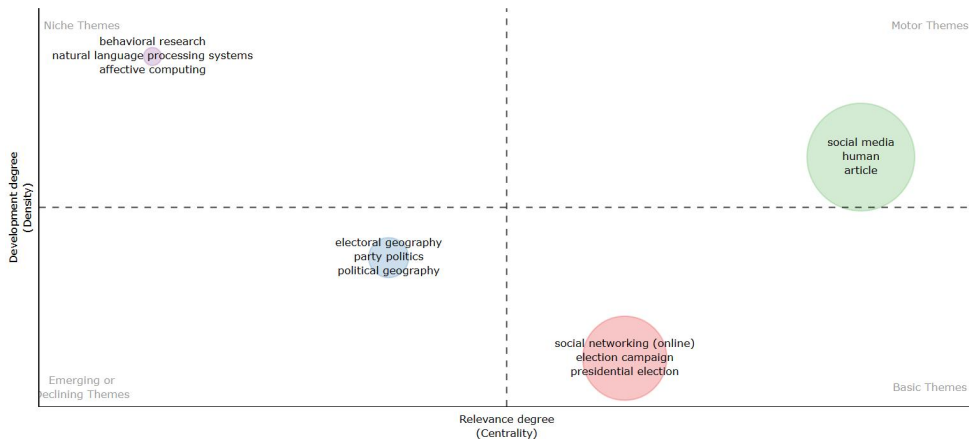
As shown in Figure 11, during this period, the theme of social media and political campaigns has become the most widely discussed topic. Based on the graph, most research themes fall into Quadrant I (Motor Themes), indicating that numerous studies have been developed as a foundation to build a conceptual framework for advancing the field of political communication. In this period, several themes occupy Quadrant II as new or unique themes with moderate centrality and density, such as Local Participation, Social Networks. Meanwhile, Social Movement and Media Roles occupy Quadrant IV with high centrality levels, albeit with moderate density.

Figure 12.
Time Slice 2 between 2012 and 2020



Meanwhile, from 2012 to 2020, research themes related to Social Media, Social Networking (online), and Political Campaigns occupied Quadrant I (Motor Themes) with an increasing position of centrality and density.

Figure 13.
Time Slice 3 between 2021 and 2023



Based on the third Time Slice in the period from 2021 to 2023, the identification of new and unique research themes (Niche Themes) in Quadrant II was observed, such as the utilization of computation-based Natural Language Processing (NLP) Systems and the theme of Affective Computing. This signifies that during this period, research related to the use of social media for political campaigns is also oriented towards testing with innovative methods such as NLP. Additionally, the theme of Social Networking occupies Quadrant IV as a Basic

Theme. Meanwhile, in Quadrant I, as part of the Motor Themes, social media emerges as the most popular theme with a high-density level.

Based on the above data analysis findings, it is evident that the publication of scientific articles on the topic of social media use in political campaigns is gaining momentum. This is indicated by the increasing number of publications observed from the growth trend between 2008 and 2023. From the data gathered by Scopus from 2008 until the present, it can be said that the study on the role of social media in political campaigns has grown by over 83 percent since 2011. It also demonstrates a significant initiative in political campaign practices to bring the competition into the virtual realm (social media), including the awareness of politicians about the need to present interactive campaigns (see: Karlsen & Enjolras, 2016; Lam et al., 2021; Stetka et al., 2019). It can be argued that there is a shift in politicians' behavior towards embracing and admiring the effects of social media on their efforts to build a positive image. In 2015, Lisa Harris and Paul Harrigan uncovered why social media had become an instrumental factor in political campaigns. They observed that social media played a significant role as a platform for engaging in opinion battles during the British election political debate in May 2010. However, the significance of social media became more apparent when it was utilized as a medium for long-term communication relationships rather than short-term ones. Moreover, this is also because most social media usage involves organic activities that require a longer process. The study by Harris & Harrigan (2015) states that in addition to leveraging social media, politicians must also establish relationships with their constituents within a relational framework (relationship political marketing).

Furthermore, the development of research on social media and political campaigns between 2008 and 2023 reveals that the United States has the highest level of scientific article publications. The phenomenon of Obama in 2008 and 2012 served as the starting point for extensive research on this topic. Furthermore, Cogburn & Espinoza-Vasquez (2011) revealed that with the help of Web 2.0 and social media, Obama's campaign successfully created a nationwide virtual community and garnered 3.1 million contributors who had the potential to mobilize grassroots actions. This virtual community gives power and contributes

to the campaign's success in political education, increasing the number of campaign donors and, more importantly, triggering citizens' political participation (Gerodimos & Justinussen, 2015). The Obama phenomenon can be considered a mega-moment that inspired numerous scientific initiatives to develop political marketing discourse. In addition to Obama's phenomena, the Trump phenomenon, from the early nomination stages to his election as President of the United States, also significantly impacted the emergence of research on campaign communication with social media. For instance, public identification with US presidential candidates such as Trump and Hillary was significantly amplified through social media. Definitely not surprising since social media allows political parties and candidates to adopt effective communication techniques and personality-driven campaign narratives (Enli, 2017; Stromer-Galley, 2019). McLaughlin & Macafee's research (2019) proved positive implications for the exposure of Trump and Hillary on social media regarding voters' identification with them. According to their findings, this exposure could increase support for one candidate while creating negative perceptions of the other. Based on these various reviews, it is unsurprising that most scientific articles are published in the United States, as it is a popular hub for phenomenal political phenomena.

Lastly, this research also found that the density of social media keywords from 2008 to 2023 is quite dominant. Additionally, other keywords with equally high-density levels, such as social networking (online), and some less common keywords, like data mining or natural language processing, appear in the peripheral clusters of keywords. Interestingly, some peripheral keywords related to research on social media and political campaigns also involve the negative effects of virtual political campaigns, such as disinformation, fake news, and propaganda. Unfortunately, based on Scopus data from 2008 to 2023, research addressing these issues is still relatively limited. The practice of negative campaigning and propaganda narratives is an inevitability in virtual communication through social media, and ironically, social media also contributes to the proliferation of the fake news climate in this post-truth era (Farkas & Schou, 2023). Thus, it means that from the findings of science mapping on this topic, several keyword findings can inspire further research in the realm of Social Media Use for Political Campaigning. In addition to keywords related to the effects of social media campaigns, there is also great hope for future research to address

methodological perspectives in understanding future virtual campaign phenomena (social media). The finding from thematic Evolution analysis shows that the themes that will increasingly become unique for examination include data analysis and computational methods, such as Natural Language Processing or methods based on Machine Learning and various other digital analytics methods. For example, Priya & Gupta's research (2023) employs NLP for emotion and polarization analysis of hate speeches, and Mathaisel & Comm (2021) attempt to address this digital campaign phenomenon using NLP and Latent Dirichlet Allocation (LDA) models. Thus, with the shift in research topics regarding social media and political campaigns towards methodological innovation, it is understood that initiatives like these will bring a fresh perspective to the process of extracting phenomena in modern political marketing communication.

CONCLUSION

As political campaigning practices rely not only on conventional style but also on employing social media as a communication channel to build trust and interaction as well as echo the political brand's value, it is expected to be a growing phenomenon in modern politics. Interestingly, our findings reveal that the study of social media in political campaigns has burgeoned since the era when social media became ubiquitous in political campaigns after the phenomenon of Obama in late 2008. This is evidenced by the analysis of publication trends on the related themes, which indicates an increase of 85 percent by the year 2022. Moreover, the exploration of related themes predominantly draws upon the phenomenon of Western political campaigns, including the United States, which stands as the country with the highest number of publications on the related field. Accompanied by analysis of the terms networking, overlay, and density, this study uncovered the less explored terms, such as election forecasting and network analysis. Additionally, our findings also indicate that Twitter, presently referred to as X, stands as the most dominant platform in research concerning its role in political campaigns, followed by Facebook and YouTube. Conversely, studies encompassing Instagram in political campaigns are still relatively scarce based on the indexed publication data within the Scopus database spanning from 2008 to 2022. In terms of thematic evolution analysis, it is evident that research emerging

around the 2020s is ushering in a new phase of inquiry, delving into advanced computational-based analytics in online political campaign practices such as Natural Language Processing (NLP) and Affective Computing. On the other hand, while this study endeavors to depict trends and patterns in related research, it is by no means exempt from limitation, including the restricted use of data sources solely from Scopus. Subsequent similar studies can explore alternative sources such as Clarivate Web of Science (WoS), Dimensions, Lens.org, and others for comparative analysis purposes and additional data sources.

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