



A Bibliometric Exploration of Voice Assistants in HR and Marketing

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ABSTRACT

This bibliometric study investigates the scholarly landscape surrounding the integration of voice assistants in the domains of marketing and human resources (HR). Leveraging a comprehensive dataset of academic publications spanning from 2010 to 2022, this analysis employs bibliometric techniques to uncover key trends, seminal contributions, and emerging research trajectories. The study reveals a steady growth in publications related to voice assistant utilization in marketing and HR, reflecting a burgeoning interest in this interdisciplinary intersection. Ultimately, this bibliometric analysis offers a panoramic view of the scholarly endeavors pertaining to voice assistant integration in marketing and HR. By synthesizing existing knowledge and revealing emerging trends, this study serves as a valuable resource for researchers, practitioners, and policymakers seeking to navigate and contribute to this dynamic field. Therefore, this study would encourage researchers, academicians, and policymakers to conduct a bibliometric analysis of “the role of voice assistants in marketing and human resources” with the emerging future direction of the research agenda.

Keywords: Voice Assistant; Human Resources; Assistant; Markets; Marketing; Bibliometric Analysis; Technological Intervention.

1. Introduction

The nature, process, and consequences of the voice assistant’s role in marketing and human resources result from the intervention of technology and artificial intelligence as the role of voice assistants in the perspective of globalization. In these consensuses, it can be forwarded that the voice assistants’ significant contribution in any production regarding managing the challenges and prospectus of the business. From this perspective, it is very important to discuss that voice assistants play an important role in the set-up of consumer -oriented behavior of companies across the globe. The role and function of the voice assistants may be defined as software that transmits everyday tasks via voice directive command. In this paper, it is important to note discuss that the role of voice assistants in marketing and human resources can be defined as the role of a commanding officer who establishes a link between the company and its consumer through voice command. Artificial intelligence, such as that seen in Apple’s Siri, Google Assistants, and Amazon’s Alexa, is crucial in technology globalization. These voice assistants use artificial intelligence to serve as marketing and HR tools. This bibliometric paper is based on the quantitative analysis of research work publications and citations about “the role of voice assistants in marketing and human resources” in the context of globalization.

The procedures of finding, selecting, organizing, and managing personnel of a business may be referred to as human resources management in this context. In addition, the company’s human resources department is responsible for creating a better working environment for their employees with the policy of better implementation of rules, regulations, and acts of companies. Human resources management has a long history because it was first used in the early 1900s, while processes and determinants of human resources management were widely widespread in the 1960s. The term human resources management is associated with globalization for an organization with employees in the industry. From the perspective of globalization, human resources management leads the development of human capital in the democratic framework of industry function. From these perspectives, it can be discussed that there is a significant role of voice assistants in marketing and HR in the process of the market mechanism because it is found that the market behavior is based on the consumer -oriented tool for better performance of the companies.

It is important to discuss how artificial intelligence is leading the mechanism of the HR function and is on the verge of revolutionizing HR in the function of a company. It can be said that HR and artificial intelligence play a significant role as voice assistants in the marketing of any company around the world [1]. Implementation of the technique of the voice assistants is leading the better performances of the voice marketing of the company in the market because the role of voice assistants is leading the mechanism of the balance in a conversation between listening and speaking in voice marketing [2]. Furthermore, artificial intelligence is playing a larger part in voice assistant marketing in the context of AI-based voice assistants since it has been discovered that this since AI-based voice assistants substantially impacts consumer trust and business views [3]. From this perspective, it is found that AI-powered-based voice assistants are playing an important role in the process of increasing consumer brand engagement in the voice marketing of the company. In these consequences, it can be mentioned that a consumer-based market is an important part of voice marketing in the global market [4]. Furthermore, it is observed that there is a significant role of voice assistants because it is found that voice assistants give important information about the health care system of the hospital to their consumer. From these perspectives, it can be discussed that the role of the voice assistant is more significant in the context of the nature, process, and consequences of voice marketing across the globe [5].

From the perspective of the nexus of voice assistants in marketing and HR, it can be mentioned that role of HR is important in promoting the importance of voice assistants in marketing because it is found that human resource management is an important part of the function of the company as well as the marketing process. In these consequences, HR plays a significant role as voice assistants in the company's position by nature, process, and consequences of marketing because voice assistants play an essential part in the function of the company collaboration of HR. In the context of the implementation of voice assistants, it is observed that the role of the voice assistants is vital position in increasing the brand credibility of companies in the market, whereby the role of HR is also significant as a form of voice assistant in the function of the company [6]. Furthermore, the implementation of digital technology is increasing the role of voice assistants in companies in the global consumer-oriented market [7]. However, there are lots of challenges, and a prospectus emerged in the implementation of the services of voice assistants in the market because the market of voice assistants may be interrupted through biased choices of products and services by voice assistants regarding the promotion of the products and services of companies [8].

The intervention of artificial intelligence paves the way for "the function of voice assistants in marketing" because it is increasing the role of voice assistants as HR in the position of the company across the globe [9]. Furthermore, the part of voice assistants plays giving important role in the consumer-oriented behavior of the company because it is found that voice assistants work as the core for the interaction between the function of the company and the journey of the consumer-oriented position of the company [10]. Based on these above-prescribed introduction parts, it can be discussed that there is a cordial linkage between the function of the company and "the role of voice assistants in marketing and HR." Additionally, it can be mentioned that there is a need to analyze "the role of voice assistants in marketing and HR."

The structure of this paper is divided into an introduction, review of literature, theoretical background, method, data analysis and result, discussion, and conclusion. In the introduction part, the concept and prospects of the role of voice assistants in marketing and HR are described. The review of the literature section broadly emphasizes the critical analysis of the related review of literature in the context of the role of voice assistants in marketing and HR. The theoretical perspective explains the role of voice assistants in marketing and HR with the help of grounded theory and values and means-end chain theory. The fourth section of this paper is based on the method. This section describes the adopted methodology in bibliometric analysis, while the fifth section describes the analysis of bibliometric analysis of citation and publication. Finally, the discussion and conclusion part justify the output of the analysis about bibliometric analysis. Therefore, the structure of the paper is based on the systematic review of the bibliometric analysis, including stepwise analysis under the perspective of approach and method of bibliometric analysis.

2. Review of Literature

Based on the above-prescribed introduction part discussion about "the role of voice assistants in marketing and human resources," it can be forwarded that voice assistants enhance the company's brand value because they interact with consumer about company services. In these consequences, there is a cordial linkage between the role of voice assistants and human resources in markets because, in the new normal, it is the responsibility and function of HR to market the business of the company through voice assistants. Moreover, in the context of the economy, the market is associated with the output of a company about its production of goods and services in a market-based economy. In these consequences, it can be analyzed that the role of voice assistants is significant for the company's function in the context of nature, process, and outcomes. As a result of the important role that HRs play in the improvement company's performance in a market-based economy, the job of HRs is also linked to voice assistants. The perspective of a market-based economy is the result of the good management of the human resource management system by the positive role of the voice assistants in the market-based approach of the company.

Based on this above concise description, the section of the review of literature is categorized into the following two sections:

- i. Role of voice assistants in marketing and HR
- ii. Prospectus and Challenges in the way of the part of Voice Assistants in marketing and HR

Both sections of the literature review are based on the critical analysis of related literature for better interpretation and explanation of the nature and theme of the study. It is also important to discuss that it is based on the systematic review of the literature and bibliometric analysis according to the nature of the study from the perspective of globalization.

The section of the review of literature emphasizes hybrid review like ambidexterity about the related review of literature because the section of the review of literature uses such kinds of literature, which are suitable according to the nature of the study. In this section, it is realized that section of the review of literature gives a platform for the bibliometric analysis under the following sequences:

1. A source that has been cited a lot and related to the nature of bibliometric analysis.
2. In these consequences, the citation of bibliometric analysis is based on a fairly new source that may not be very popular yet but interestingly challenges previous scholarship. These may be sources you find especially compelling despite their obscurity, and you may want to include them in your essay.

i. Role of voice assistants in marketing and HR

“The role of voice assistants” gives sharpness to the function of the company because it is found that voice assistants interact with consumers with a friendly approach and oversee human resources management through playing an important function for the company [11]. Furthermore, in the context of India, there are diversities in the socioeconomic development of the society of India. In these consequences, it is observed that shoppers are using artificial intelligence to interact with their consumers under the aspect of grounded theory because the element of the grounded theory better advocates the role of voice assistants in the company in marketing [12]. Furthermore, the consequences of globalization are leading to the role of a technology-based market in India. From these perspectives, the role of artificial voice assistants is significant in determining the better performance of shoppers in the fashion retail sector.

These consequences also enhance the mechanism of consumer buying behavior according to the pattern of advertisement of products with the help of artificial voice assistants in marketing and HR. Therefore, it can be argued that there is a significant role of artificial voice assistants in marketing and HR [13]. In the context of the role of HR, it is found that the revolution of chatbot services is increasing the role of HR as voice assistants in the function of the company in the market-based economy of India. From the perspective of India, it is found that there is a significant role of HRM in promoting the products of the company among consumers. These consequences of the role of HR work as voice assistants in the function of the company in the market-based economy of India [14].

There is a significant role of HR in companies of the IT sector in India because it is found that the role of global HR is leading the products of IT companies in the worldwide market. In these consequences, the voice assistant’s role is crucial in managing the company’s function in the global marketing system [15]. There is the vibrant performance of voice assistants in companies of Asia because the function of the company under the aspect of ensuring sustainable development is based on the retrospective to prospective approach for the study of the operations of the company from its past to present with future agenda of development [16]. According to the results of the multi-level investigation, the HR department’s flexibility affects both the market success of the companies and how they use voice assistants for marketing. In these consequences, it is also important to discuss that multi-level analysis shows a cordial linkage between “the role of HR and voice assistants in marketing and HR” in the function of companies in the context of globalization [17]. Furthermore, in the context of India, it is important to discuss that the process of engagement of the employees is based on the better performance of the HR and voice assistants in the function of the company as well as the leading role of service sector companies in India [18]. Furthermore, the voice assistant’s behavior and talking manner determine the consumers’ perception of the sense of positive and negative aspects of consumers to the services of companies [19].

Based on the above-prescribed review of literature, there are the following summary points:

- a. A literature review shows a cordial linkage between voice assistants in marketing and HR because the responsibility of the voice assistants and HR determines the company’s function in the market-based economy in the context of globalization.
- b. Secondly, in India, it is found that there is a significant role of voice assistants in marketing and HR because Indian companies are giving better performance with the help of voice assistants and HR in the market-based economy from the perspective of globalization.

ii. Prospectus and Challenges

It is widely acknowledged that globalization plays a significant role in applying voice assistants in marketing and HR from the standpoint of opportunities and problems in the field. On the other hand, there are socioeconomic and technical differences between developed and developing countries in the context of globalization, whereby developed countries have advanced technology and resources for better company performance. At the same time, there is a lack of such resources in developing countries compared to developed countries. In these consequences, it can be forwarded that there is a need for depth analysis about a study of the prospectus and emerging challenges due to the function of voice assistants due to the intervention of

globalization. In these consequences, this section focuses on the emerging challenges regarding the functionality of voice assistants in marketing and human resources in both developed and developing countries. Therefore, this section is based on the systematic review of the emerging challenges in “the role of voice assistants in marketing and HR” in India and abroad in the comparative framework.

It can be discussed that the function of voice assistants leads the mechanism of human resources management regarding creating a knowledge-based economy in both developed and developing countries in the context of globalization [20]. In the context of the implementation of technology in the function of voice assistants in marketing and HR in the circumstance of globalization, it can be discussed that the technology-based role of voice assistants is important in the management of emerging challenges [21]. The intervention of simulated intelligence is converting the prospectus of human resources management from the perspective of the role and function of voice assistants at the global level in both developed and developing countries [22]. A lot of challenges emerged due to the intervention of artificial intelligence because it was found that voice assistants are facing the problem of diversified behavior of the consumer about the function of the company in the context of globalization [23]. It is discovered that artificial intelligence’s role as a voice assistant emerged both as an opportunity and a challenge for the business because it provides a broad way for consumer and business interaction where voice assistants manage every emerging challenge in the context of globalization [24]. For example, during the period of pandemic of COVID-19, it was found that voice assistants faced many challenges in interacting with consumers on “the periphery of the global COVID-19 pandemic” [25]. Furthermore, it has been found that the role of voice assistants is important in the function of a better healthcare system during the global pandemic of COVID-19 globally. Therefore, it can be forwarded that voice assistants are important in the process of the market-based economy and human resources management in the post scenario of the pandemic of COVID-19 [26].

Because the effects of globalization provide a technical challenge for managing the function of a firm in a market-based economy, it has been discovered that the role of voice assistants in marketing and HR is facing many obstacles in the context of mergers and acquisitions [27]. The role of voice assistants paves the way for management in the context of Indian companies because the use of artificial intelligence plays giving important role in the function of a company in a market-based economy as well as managing the emerging challenges in the way of the role of voice assistants in marketing and HR [28]. Voice assistants are important in the company’s function because they work as gatekeepers for interaction between the company and consumers and manage the emerging challenges in globalization [29].

- a. HR manages the emerging challenges in the context of globalization because the consequences of globalization give both positive and negative aspects of the function of voice assistants in marketing and HR in the market-based economy in both developed and developing countries.
- b. In the context of “the role of voice assistants in marketing and HR, it is found that both developed and developing countries” have their strategies for managing the challenges in the context of globalization, where developed countries have well-developed human resource management compared to developing countries where lack of such kinds of well-advanced strategies of human resources management.
- c. In India, there are regional disparities and inequality in socioeconomic and technology-based development practices in the practices of development concerns. In these consequences, it can be mentioned that there is a need for a research-based study about “the role of voice assistants in marketing and HR” from the perspective of the development of India as well as the function of Indian companies and their role in a consumer-based society.
- d. India is the largest consumer-based market in the world in the context of globalization. In these consequences, this systematic review of literature gives a depth way to develop such kinds of mechanisms for the study of the nature, process, and results of assistants in marketing and HR in the periphery of globalization in the context of retrospective to prospective approach from past to present with future agenda of study.

3. Theoretical Background

Based on the systematic review of the literature, it is found that scholars need to revisit the theoretical background of the study of “the role of voice assistants in marketing and human resources (HR).” In these consequences, there are considerable theories about “the role of voice assistants in marketing and human resources (HR).”

3.1 Grounded Theory

According to Chopra [30], there is the significant importance of the grounded theory in “the role of voice assistants in marketing and human resources” because voice assistants interact with the consumers on the ground level as well as collect empirical information about the value, brand, and services of a company. These consequences enhance the analysis of collected data and improve the company’s service quality. Grounded theory is mostly used by the human resources department (HR) because HR collects data from employees about prospectus and problems of the company for better improvement in the function of the company. At the same time, the role of voice assistants is relevant in the context of cordial linkages between the company and consumers. After all, voice assistants work under grounded theory because they collect information about the

nature, process, and consequences of the company's service among its consumers in the market-based economy. These consequences enhance the performance and brand value of the company in the context of globalization with "the intervention of artificial intelligence."

3.2 Values and Means-End Chain Theory

According to Veludo et al. [31] "a means-end chain is a structure that connects product or service attributes to consequences produced by these and the latter to values." Means-end chain theory is associated with linkages between the attributes that exist in products and services. The features and the personal values provide the consequences for the consumers that the effects reinforce. There are following six components in matters and means-end chain theory:

- i. Concrete attributes
- ii. Abstract attributes
- iii. Functional consequences
- iv. Psychological consequences
- v. Instrumental values
- vi. Terminal Values

The above six components are associated with the role of voice assistants in marketing and human resources because the values and means-end chain theory give a better interpretation of the considerable knowledge about the function and responsibility of "the role of voice assistants in marketing and human resources."

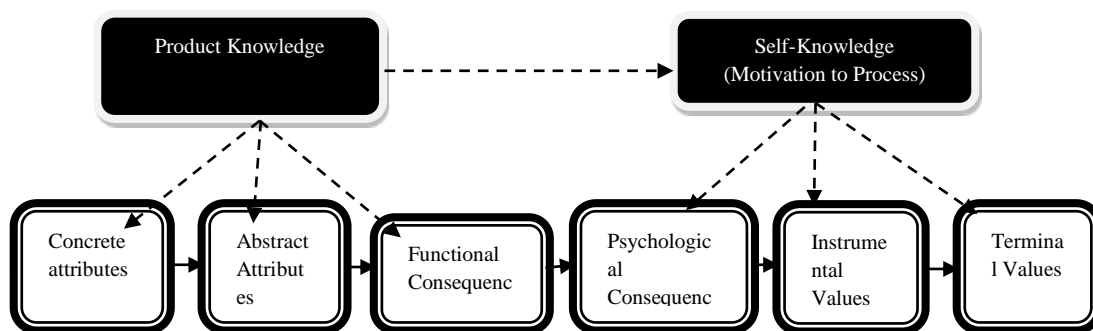


Diagram 1: Values and Means-End Chain Theory

Source: Mulvey et al., (1994)

4. Research Methodology

There is considerable importance in studying "the role of voice assistants in marketing and human resources (HR)" in the academic world. In these consequences, it is realized that there is a need for depth analysis of quantitative analysis of citation of the related work in "The Role of Voice Assistants in global marketing and human resources."

There are the following research questions:

- i. What is the most prolific source of citation about the study of the role of voice assistants in marketing and HR?
- ii. What is the analytical framework of the citation about research work on the role of voice assistants in marketing and HR?
- iii. What is the implication of the bibliometric analysis of the citation related to the study of the role of voice assistants in marketing and HR?

There are the following objectives in these contexts:

- i. "To Identify the most prolific source and authors in the research work on the role of voice assistants in marketing and human resources".
- ii. "To analyze the trend of the publication, citation about the research work on the role of voice assistants in marketing and human resources".
- iii. "To carry out an in-depth analysis to represent it in a summarized form".
- iv. "To give recommended policies for future research direction in the area of the role of voice assistants in marketing and human resources.

Based on the above objectives, there are the following hypotheses:

- i. There is a significant impact of the role of voice assistants on marketing and HR.
- ii. Bibliometric analysis better justifies the quantitative measurement of the citation and publication of the Bibliometric analysis.

4.1 Analytical Framework

"The quoted study presupposes that the investigator would refer to the publications most relevant to their investigation. Recognizing the utilization of voice assistants was the first step in understanding the present

The above Figure 1 VOS viewer graph reveals “the role of voice assistants” in helping in marketing and human resources.

Table 1: Publisher-Wise Citations on the Role of Voice Assistants in Marketing and HR from 2010-2022

Year	Name of Publishers				
	Springer	Wiley Blackwell	Emerald	Taylor & Francis	Elsevier
2010	48	185	21	239	1094
2011	60	257	29	280	1092
2012	57	394	25	360	1293
2013	72	228	26	1019	1544
2014	60	201	34	940	1438
2015	89	182	49	633	1680
2016	88	190	54	1344	1934
2017	99	181	66	1549	1884
2018	142	213	68	959	2030
2019	163	196	73	1451	2170
2020	228	247	75	1065	2136
2021	994	228	119	820	2194
2022	1784	160	150	553	2282
Total	3884	2862	789	11212	22771

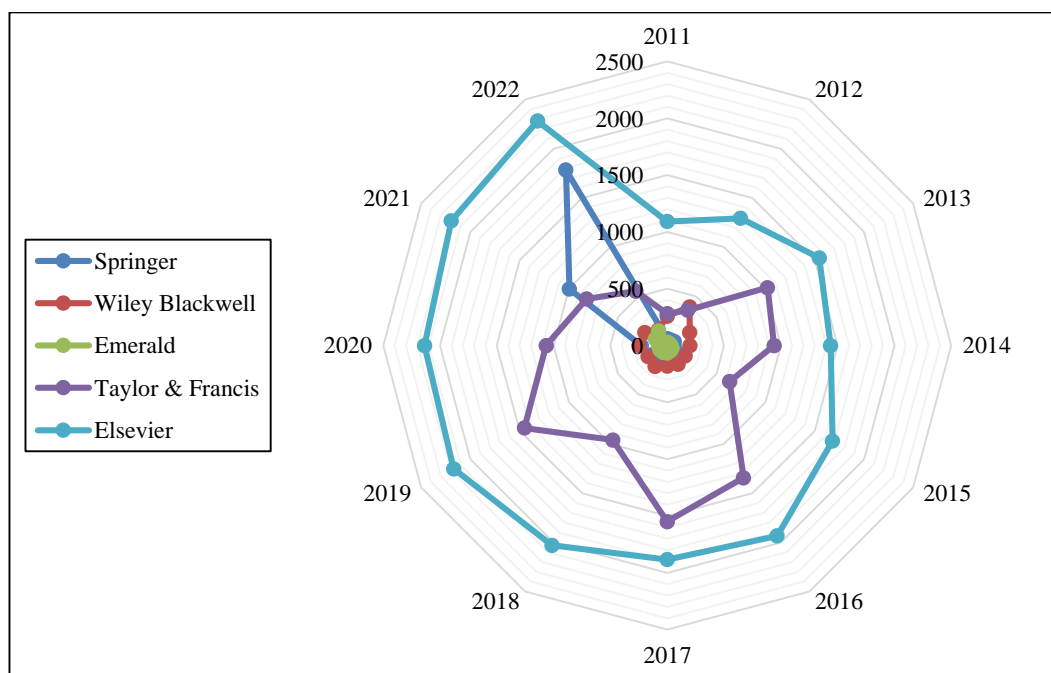


Figure 2: Radar Diagram Shows Publishers and their Citation the Role of Voice Assistants in Marketing and HR

Figure 2 & Table 1 conclude that total citations on “The Role of Voice Assistants in Marketing and HR” from 2010-2022 were received by Springer-3884, Wiley-Blackwell-2862, Emerald-789, Taylor & Francis-11212, and Elsevier-22771. It was also indicated that Emerald got minimum trophies on the same topic.

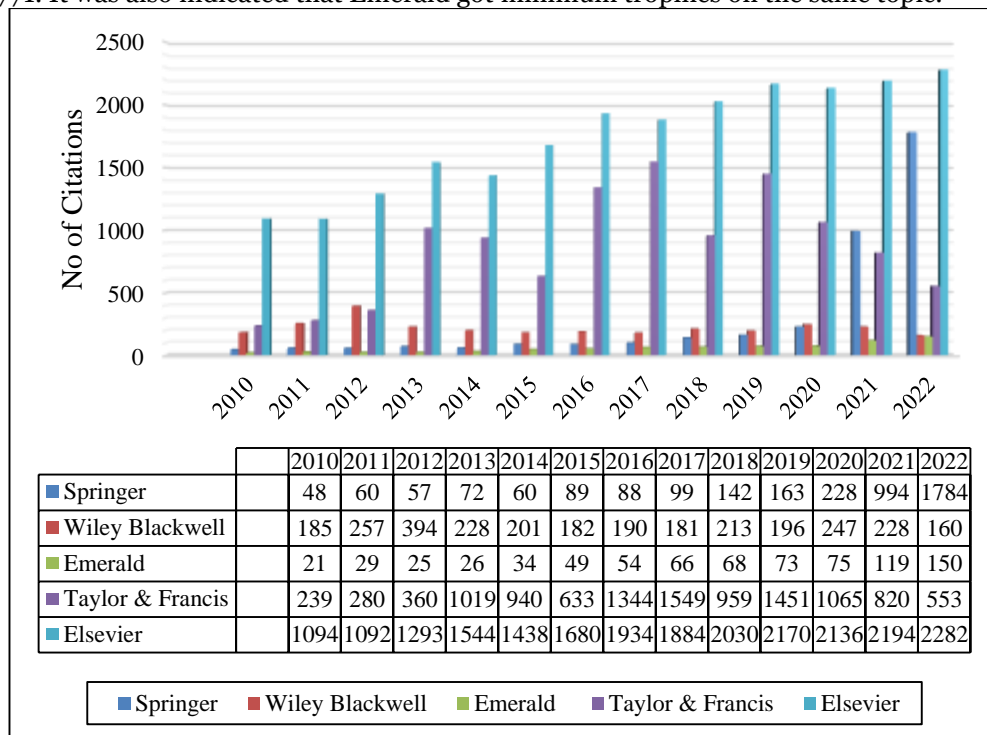


Figure 3: Shows citations in Publisher & Year

Through Figure 3, one can easily understand the number of citations in publishers and the years from 2010 to 2022 on “The Role of Voice Assistants in Marketing and HR” combined.

Table 2: Publisher-Wise Citations on the Challenges in the Way of Role of Voice Assistants in Marketing and HR from 2010-2022

Year	Name of Publishers				
	Springer	Wiley Blackwell	Emerald	Taylor & Francis	Elsevier
2010	1	0	0	309	1095
2011	0	0	0	345	1092
2012	2	1	0	455	1293
2013	1	0	0	1288	1546
2014	3	2	1	1146	1439
2015	1	1	0	806	1680
2016	4	0	0	1752	1934
2017	2	0	2	1950	1885
2018	3	0	1	1223	2033
2019	8	0	1	1860	2174
2020	7	1	0	1414	2137
2021	58	0	1	1099	2194
2022	104	0	0	797	2283
Total	194	5	6	14444	22785

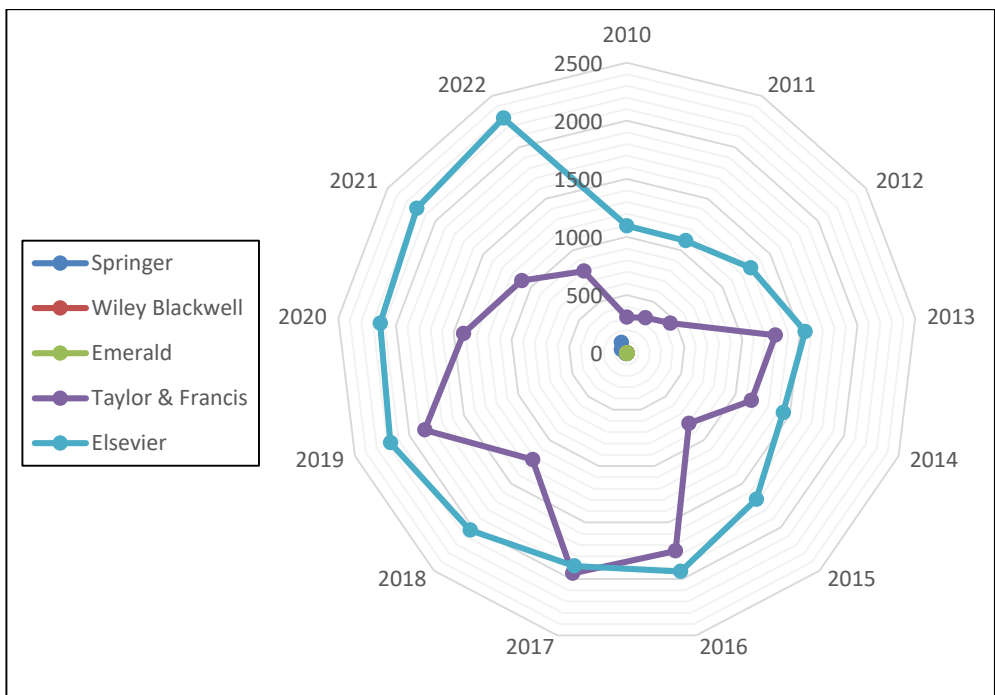


Figure 4: Radar Diagram Shows Publishers and their Citation on Challenges in the Way of Voice Assistants in Marketing and HR from 2010-2022

Figure 4 & Table 2 conclude that total citations on the topic of “Challenges in the way of Voice Assistants in Marketing and HR” during 2010-2022 were received by Springer-194, Wiley Blackwell-5, Emerald-6, Taylor & Francis-14444, and Elsevier-22785. It was also indicated that Wiley Blackwell got minimum trophies on the same topic.

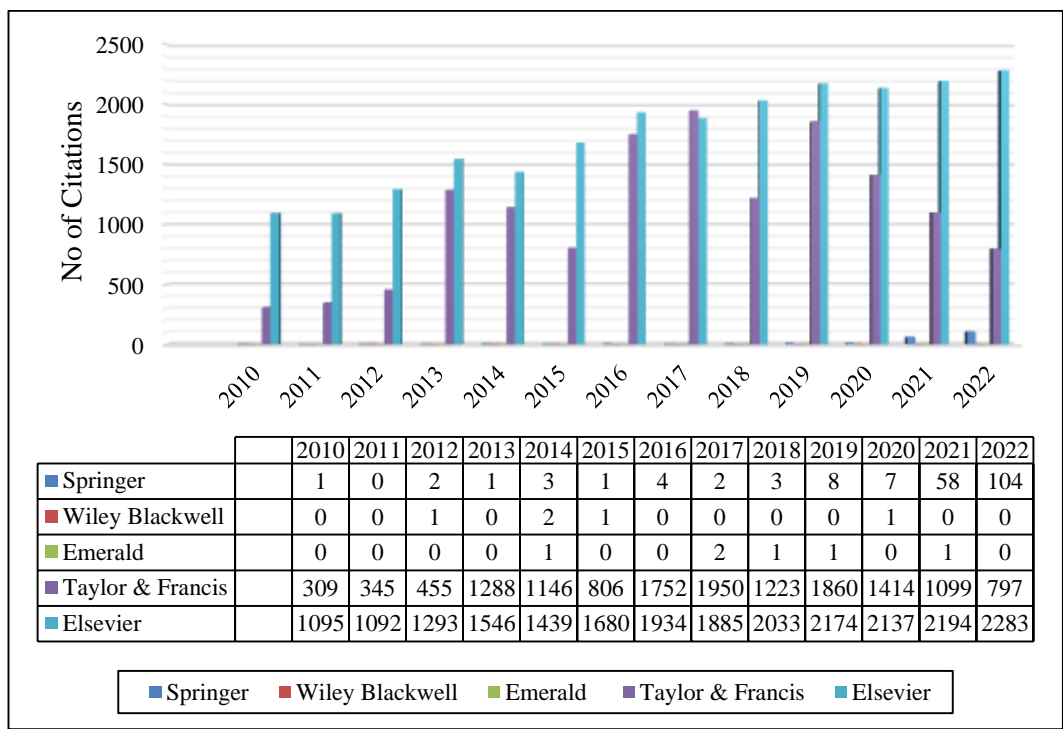


Figure 5: Shows citations in Publisher & Year

In Figure 5, one can easily understand the number of citations in publisher and year from 2010 to 2022 on the Challenges in “The Role of Voice Assistants in Marketing and HR” combined.

5.1 Citation Analysis

The study will offer general research statistics, such as the number of papers published each year, the most referred documents, the most significant authors, the most important journals, and the most important countries.

Table 3: Citation Overview

Sr.no	Authors	Source/journal	Total Citations
1	White et al., (2014).	Human Resource Management	89
2	Chopra (2019).	International Journal of Retail & Distribution Management	73
3	Cooke, Schuler, and Varma, (2020).	Human Resource Management Review	69
4	Sezgin et al., (2020).	NPJ Digital Medicine	68
5	McLean, Osei-Frimpong, and Barhorst., (2021).	Journal of Business Research	63
6	Jena, Bhattacharyya, and Pradhan (2017).	Vision	58
7	Ravi, V., & Kamaruddin, S (2017).	International Conference on Big Data Analytics	41
8	Mohan (2019).	International Journal of Information and Computing Science,	16
9	Jain et al., (2022).	Journal of Business Research	10
10	Rabassa, Sabri, and Spaletta, (2022)	Technological Forecasting and Social Change	10
11	Evseeva et al., (2019).	International Conference on Digital Technologies in Logistics and Infrastructure	9
12	Jain & Gandhi (2021).	International Journal of Innovation Science	6
13	De et al., (2021).	Journal of Business Research	6
14	Mer and Virdi (2022).	Impact of Artificial Intelligence on Organizational Transformation	2
15	Guha et al., (2022).	Journal of the Academy of Marketing Science,	2

16	Grewal et al., (2022).	Journal of Service Management,	2
17	Hua et al., (2022).	International Journal of Research in Marketing.	1
18	Patrizi, Vernuccio, and Pastore, (2021).	Digital Marketing & E-Commerce Conference	1

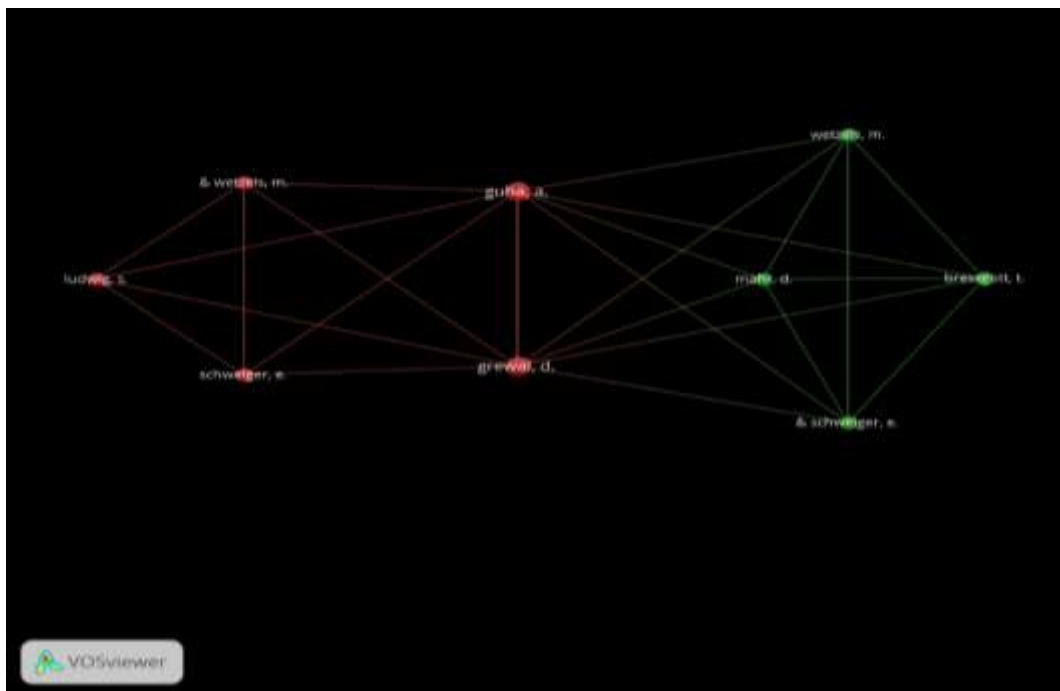


Figure 6: VOS Viewer Graph shows

Table 3 and Figure 6 begin with a citation overview, highlighting the leading 18 most widely cited papers in the field, which will provide the quantitative foundations for an analytical evaluation of “the role of voice assistants in marketing and HR” and the obstacles standing in the way of “the role of voice assistants in marketing and HR.”

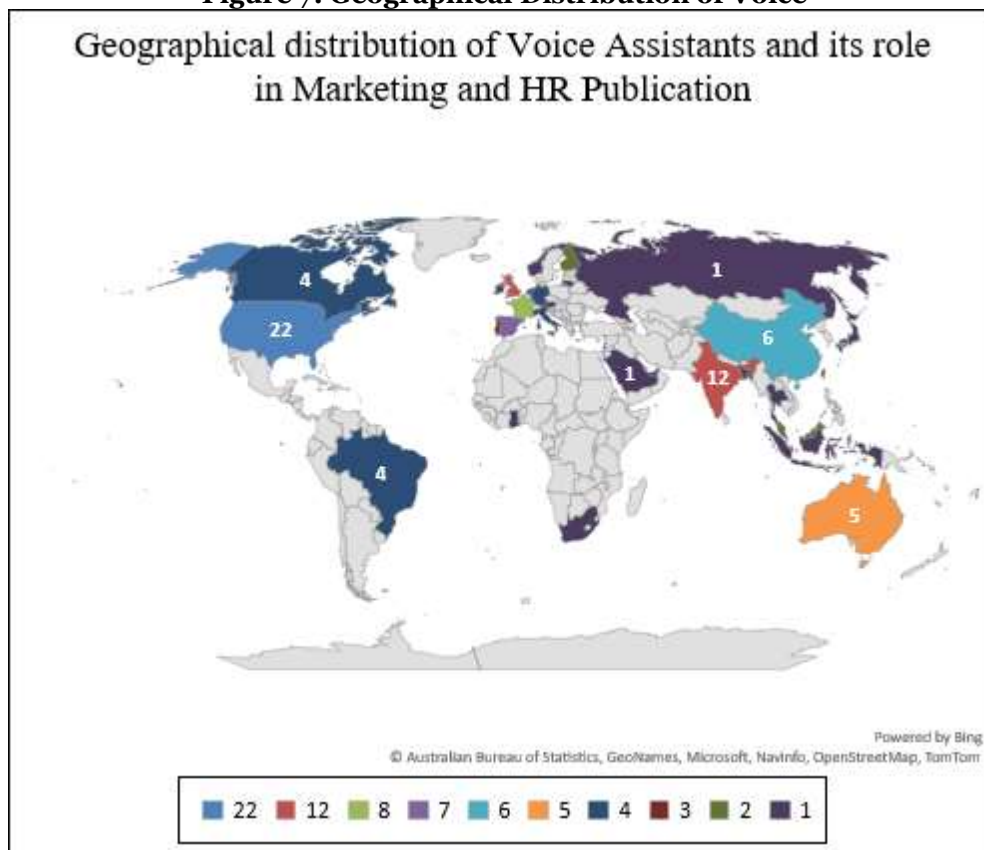
Examination of author citations gives an insight into the topic of “the role of voice assistants in marketing and HR and challenges in the way of voice assistants in marketing and HR;” researchers are primarily interested in the issues addressed in these papers. Author-based evaluation provides preliminary perspectives of potential effects on the research area. In light of this crucial consideration, the study by [16], which focuses on global HR jobs and the variables impacting their evolution, has earned 89 citations. An article by [12] to investigate the determinants behind Indian consumers’ adoption of AI was published alongside 73 citations. Likewise, the study “Human Resource Management Research and Practice in Asia: Past, present, and future” by [17] earned 69 citations. [27] published research in which they sought to quantify how voice assistants supported healthcare delivery during a health crisis and pandemic and generated 68 citations for a study. Authors [4] investigated how voice assistants influenced consumer brand engagement & received 63 medals. [19] issued an article with 58 citations centered on “Employee engagement and affective organizational commitment: Mediating role of employee voice among Indian service sector employees.” [25] emphasize “Big data analytics enabled smart financial services: opportunities and challenges” granted 41 citations. [14] issued an article with 16 citations centered on “The Chatbot Revolution and the Indian HR Professionals.” A report by [6] to investigate how Interactive voice assistants help in assuring privacy risks through brand credibility was published alongside ten citations. A Manuscript published by [8] explores consumers’ perception of conversational commerce, and product choice offers delivered by voice assistants who received ten citations. A study by [7] dedicated to using digital instruments in human resource management in leading Russian companies was cited by 9. [13] aims to understand the impact of modern technologies, such as artificial intelligence, on the impulse buying behavior of Indian shoppers, specifically in fashion retail outlets was published alongside six citations. “Opportunities and challenges of using biometrics for business” posted by [22] consist of 6 citations. [1] attempt to unravel how AI is revolutionizing the various functions of HR and marketing granted two citations. [11] issued an article with two citations on a new framework wherein

perceptions of voice assistants artificiality and voice assistant intelligence are positioned as key drivers of voice assistants evaluations. “How communications by AI-enabled voice assistants impact the consumer journey,” issued by [9], consists of 2 citations [10]. examine how conversation attributes of voice assistants determine consumer trust and intention to engage in voice shopping consisting of 1 citation. “Talking to voice assistants: Exploring negative and positive users’ perceptions,” issued by [20], earned 1 citation.

Table 4: Top Countries and Regions in Research on Voice Assistants Assistance

Country/Territory	No.	Country/Territory	No.
United States	22	Taiwan	2
India	12	Austria	1
United Kingdom	12	Bangladesh	1
France	8	Ghana	1
Spain	7	Hong Kong	1
China	6	Indonesia	1
Australia	5	Ireland	1
Brazil	4	Japan	1
Canada	4	Lithuania	1
Germany	4	Norway	1
Italy	4	Russian Federation	1
Netherlands	4	Saudi Arabia	1
Portugal	3	South Africa	1
Finland	2	Thailand	1
Lebanon	2	United Arab Emirates	1
Malaysia	2	Undefined (Others)	2

Figure 7: Geographical Distribution of Voice



5.2 Voice Assistant Assistance and its Role in Marketing and HR Publication

Through Figure 7 and Table 4, it can be concluded that researchers from the United States published 22 papers, 12 from India and the United Kingdom, eight from France, seven from Spain, six from China, five from Australia, four from Brazil, Canada, Germany, Italy, and the Netherlands, three from Portugal, two from Finland, Lebanon, Malaysia, and Taiwan. In addition, one is from Austria, Bangladesh, Ghana, Hong Kong, Indonesia, Ireland, Japan, Lithuania, Norway, the Russian Federation, Saudi Arabia, South Africa, Thailand, and the United Arab Emirates, and two are from undefined countries (Other countries).

Table 5: Types of Documents in Research on Voice Assistants Assistance

DOCUMENT TYPE	No.
Article	59
Conference Paper	11
Book Chapter	2
Review	2
Total	74

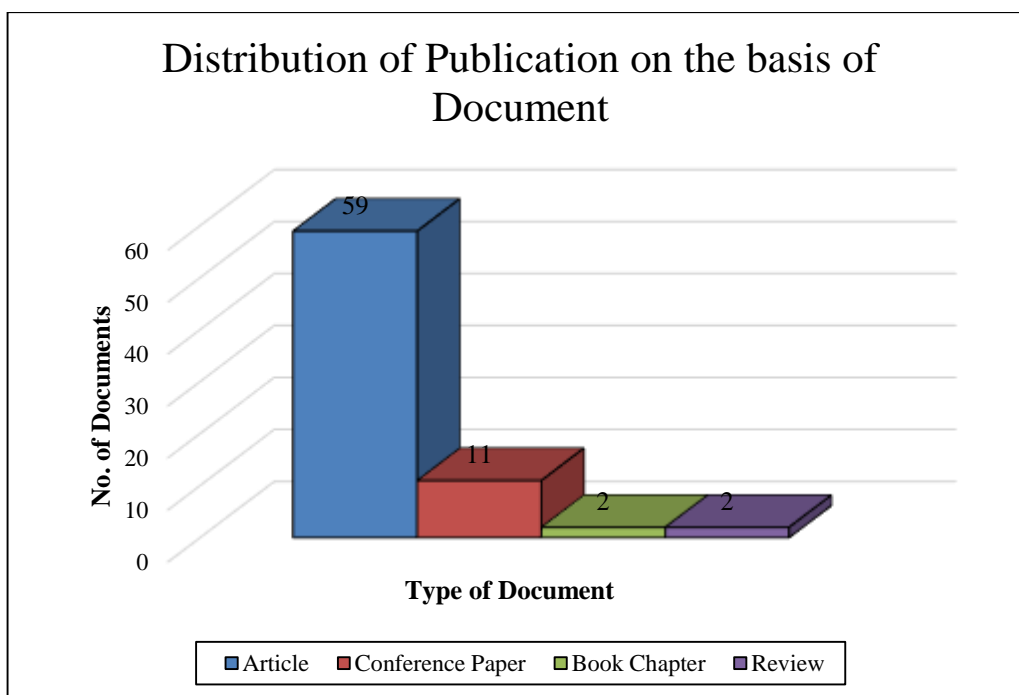


Figure 8: Distribution of Publication based on Document.

Through Figure 8 and Table 5, it can be concluded that for conducting bibliometric analysis, the data is from various documents, i.e., “Articles, Conference papers, Book chapters, and Reviews.” The investigation consists of 59 Articles, 11 Conference Papers, two book Chapters, and 2 Review papers.

Based on the above analytical framework, the hypothesis of this paper gives a direction about the study of the role of voice assistants in marketing and HR because the analytical part shows that there is significant importance of the role of voice assistants in marketing and HR while citation analysis gives a broad sense about the related literature about the role of voice assistant in marketing and HR.

6. Discussion

The present study aimed to examine the function of voice assistants within the domains of marketing and human resources. Furthermore, the research findings primarily center on the AI domain, namely the utilization of voice assistants in marketing and human resources departments. These applications aim to evaluate current market conditions, facilitate strategic planning, support new product development, inform pricing choices, optimize distribution channels, and include several other areas of interest. The integration of voice assistants in marketing and HR has become a significant area of interest in recent years. This paradigm shift in how businesses interact with consumer and manage internal processes has been driven by advancements in natural language processing and artificial intelligence. A bibliometric review provides valuable insights into the evolution, trends, and future directions of voice assistants in these domains.

One prominent finding in the literature is the exponential growth of research related to voice assistants in marketing and HR. The study highlights the increasing importance and relevance of technology in modern business practices. The proliferation of voice-enabled devices and platforms, such as Amazon's Alexa, Google Assistant, and Apple's Siri, has played a pivotal role in this trajectory. In marketing, voice assistants have revolutionized consumer engagement and personalized marketing strategies. They provide a more natural and interactive interface for consumers to interact with brands [31]. The ability of voice assistants to understand context and preferences allows for tailored recommendations and product suggestions. Moreover, voice search optimization has emerged as a critical aspect of SEO (Search Engine Optimization), prompting marketers to adapt their strategies to cater to voice-based queries.

In HR, voice assistants have streamlined administrative tasks, allowing HR professionals to focus on more strategic initiatives. They can facilitate employee onboarding, provide quick access to company policies and benefits information, and even assist in scheduling interviews and meetings [32]. Additionally, voice-driven analytics tools have emerged to help HR teams make data-driven decisions related to talent acquisition, retention, and performance management.

The bibliometric review of voice assistants in marketing and HR underscores their transformative impact on contemporary business practices. The rapid expansion of research in this area reflects the growing recognition of the value that voice-driven technologies bring to consumer engagement, marketing strategies, and HR operations. As this field continues to evolve, it will be crucial for businesses to stay abreast of the latest developments and leverage voice assistants effectively to gain a competitive edge in the market.

Based on the above discussion, it can be analyzed that there is the significant importance of the citation and publication of “the role of voice assistants in marketing and human resources” because the discussion part shows that both developed and developing countries are working on research work in the area of “the role of voice assistants in marketing and human resources.” Therefore, it is also important to discuss that India is the leading country after “the United States of America” in the publication of a study about “the role of voice assistants in marketing and human resources.” It is the result of the interest of scholars of India in the emerging and interesting topics of the part of voice assistants in marketing and human resources. Furthermore, it is well understood that it is positively associated with the significance of globalization as well as the structure of the market-based economy of India.

The market-based economy of India gives a broad sense of the role of human resources management because it is found that India has the world's largest youth population, known as the demographic dividend, and a vast majority of the youth population is engaged in private jobs and education. In these consequences, human resources management is significant in both “developed and developing countries.” Moreover, there is cordial linkage and the association between “the role of voice assistants in marketing and human resources” as there are following important aspects of the management of human resources:

- a.** Target
- b.** Resources
- c.** Time
- d.** Proposed Programme

The above four aspects are associated with “the role of voice assistants in marketing and human resources” in developed and developing countries. In the context of this bibliometric analysis, it is found that the entire citation analysis broadly describes and explores phenomena of nature, process, and consequences of “the role of voice assistants in marketing and human resources.” In these perspectives, it is important to discuss the heart of the citation about the part of voice assistants in marketing and human resources because all the cited papers give detailed information about the nexus and association between marketing and human resources in the context of the role of the voice assistants.

These consequences are broadly explored and published by reputed publications like Springer, Emerald, Taylor & Francis, Wiley Blackwell, and Elsevier. All these are reputed publications, and it is observed that they gave significant space to study “the role of voice assistants in marketing and human resources.” In this paper, a literature review shows that multiple economic, psychological, sociological, and management-related responsibilities are associated with the function of voice assistants in marketing and human resources. Additionally, quantitative analysis of the citation shows a pattern of continuous progress in the study's research, publication, and citation about “the role of voice assistants in marketing and human resources” in the context of globalization.

In the result and analysis part of this paper, there is a total of 8 figures and five tables about quantitative analysis of publication and citation of the research study about “the role of voice assistants in marketing and human resources.” Therefore, it can be mentioned that there is a significant importance of the study's citation about the part of voice assistants in marketing and human resources. Furthermore, it is also important to discuss that India is important in the research, publication, and citation of the study “The Role of Voice Assistants in marketing and Human Resources” because India is the emerging market of human resources management.

It is also important to mention that the consequences of the pandemic of COVID-19 are “increasing the role of voice assistants in marketing and human resources” because analysis of the citation part shows that the trend of publications and citations is continuously growing post-pandemic of COVID-19. After all, the consequences of the pandemic of COVID-19 give a new challenge and prospectus to voice assistants for better performance

of the company in the market-based economy due to the adverse impact of the pandemic of COVID-19 on a global level. It can be realized that the post-scenario phenomena of the pandemic of COVID-19, started a new debate about the wonders of nature, process, and consequences of “the role of voice assistants in marketing and human resources” because analysis of the bibliometric shows that research patterns with publication and citations are majorly focused on the impact of the pandemic of COVID-19 on the function of the company with the role of voice assistants. It is also found that these selected reputed publications focused on the changing phenomena of “voice assistants in marketing and human resources” and gave a new agenda for research in “the role of voice assistants in marketing and human resources.”

Based on the above concise discussion, there are the following summary points:

- a.** It can be discussed that there is so important role of voice assistants in marketing and human resources because there are cordial correlations between the market and human resource management in the context of “the role of voice assistants.” In these consequences, it is realized and found that reputed publications gave an academic space to study “the role of voice assistants in marketing and human resources” with new debate after the post-scenario phenomena of the impact of COVID-19.
- b.** It is also important to discuss that bibliometric analysis is based on the selected period from 2010 to 2022. Therefore, this analysis is based on the trend analysis of nature, process, and consequences.
- c.** In the context of India, it is also important to discuss that India is the leading country in conducting research works in the role of voice assistants because India has the world’s largest youths as well as an emerging market of human resources. Therefore, the bibliometric analysis gives relevant phenomena about sequences of research work, publication, and its citations in India in the context of retrospective to the prospective manner with past to present with future agenda of research work.

7. Conclusion

Based on the above concise discussion about bibliometric analysis in the study of “the role of voice assistants in marketing and human resources,” it can be concluded that both developed and developing countries are going ahead in the way of research in the area of “the role of the voice assistants in marketing and human resources.” Furthermore, based on this quantitative analysis of research, publication, and citation of the related work in Springer, Taylor & Francis, Emerald, Wiley Blackwell, and Elsevier publications are based on the high level of the citation of research work in the area of “the role of voice assistants in marketing and human resources” in the context of globalization.

[31] described various aspects of the role of voice assistants in their paper in Springer’s publication. This paper is based on the function of voice assistants with artificial intelligence. This paper also focuses on the conversation of voice assistants and their impact on human reactions. According to Hoy (2018), artificial voice assistants like Alexa, Siri, and Cortana are significantly utilized in marketing and human resources. [32] gives detailed information about the role of artificial voice assistants in his published paper in the journal of Taylor & Francis because it is a reputed publication. There are beautiful descriptions and citations about the function of voice assistants in marketing and human resources in the context of globalization. In a published book by Wiley and Blackwell, authors [33] deeply described the role of voice assistants and their consequences on human behavior. This book is based on the explorative description of “the role of voice assistants in marketing and human resources” in the context of globalization.

Based on these concluding remarks, there are the following final points about the above concise description of “the role of voice assistants in marketing and human resources” in the context of globalization and its consequences:

- i.** The study about “the role of voice assistants in marketing and human resources” is associated with the significant importance of the bibliometric analysis of citation of research works on a global level as well as its significance in the way of challenges in “the role of the voice assistants in marketing and human resources.”
- ii.** Post-scenario Ario phenomena of the pandemic of COVID-19 changed the pattern of research work about “the role of voice assistants in marketing and human resources” because responsibility on the part of voice assistants is so relevant in the era of the pandemic of COVID-19. After all, reputed publications give academic space to related research on “the role of voice assistants in marketing and human resources” in COVID-19.

8. Scope for Future Studies

The present study discusses bibliometric and systematic literature reviews. Thus, this study is secondary research. Further research/study on a similar domain can be performed using primary data sources. Moreover, the study only discusses the role and usage of voice assistants in marketing and human resources. Therefore, further study can be done in other fields, like the efficacy/efficiency of voice assistants in various fields other than marketing and human resources (e.g., education).

In these consequences, it is realized that there is the following direction for future research:

- i.** There is a need to develop such models, which can be helpful in the quantitative measurement of citation and publication analysis about the role of voice assistants in marketing and HR. In these consequences, this

paper gives an approach in perspective retrospective to prospective manner because the future direction of the research work gives a broad concept for developing an understanding of the role of voice assistants in marketing and HR.

ii. Based on the findings, it is realized that there is a need to develop a grounded theory in the perspective of the role of voice assistants in marketing and HR because the study gives a linear sequence about the phenomena of the citation and publication of the role of the voice assistants in marketing and HR. Therefore, the future direction of the research should be based on the systematic and Bibliometric analysis of the study of the role of voice assistants in marketing and HR from the perspective of India.

iii. In India, there is a need to develop a comparative analysis of the role of voice assistants in marketing and HR in the context of globalization and new liberal economic policies in India.

Finally, it is also realized that the future direction of the research should be based on comprehensive research on the grassroots level in the context of the grounded theory because grounded theory-based research can give a better implication about the research of the role of the voice assistants in marketing and HR.

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