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NEUROMARKETING RESEARCH TRENDS OVER THE LAST TEN YEARS: A BIBLIOMETRIC ANALYSIS OF THE SCOPUS DATABASES

The purpose of this study is to investigate and examine the scientific literature on neuromarketing using bibliometric analysis to investigate the main subjects, authors, sources, most cited papers, and leading nations in the neuromarketing literature. From 2014 through 2023, articles indexed in the Scopus database were examined. As a result of the initial search, 780 papers were collected, of which 103 published articles were chosen as valid for neuromarketing analysis utilizing the VOSviewer tool to show density, co-occurrence, trends, and data linkage. The findings suggest that the development of publishing is on the rise between 2014 and 2022. Furthermore, the findings imply a growing interest in neuromarketing research. The United States came in first, followed by Spain and the United Kingdom. Sungkyunkwan University in Korea topped the list of the finest institutions for publishing. Furthermore, the findings revealed that Plassman is the most referenced author in the Scopus database. The keyword "neuromarketing" has the most outstanding overall association strength (95) with neuroscience, consumer neuroscience, EEG, consumer behavior, FMRI, marketing, neuroscience, and psychology. The findings of this study assist researchers in developing a solid roadmap for delving deeper and defining future research areas in neuromarketing.
Keywords: Neuromarketing, Bibliometric Analysis, Scopus Database, Co-occurrence, Co-citation.

Statement of the problem in general form and it's connection with important scientific or practical tasks. Neuromarketing is one of the newest types of modern marketing and has a significant role in designing Commercial advertisements by knowing the tendencies and motives of consumers. Researchers and those interested are searching neuromarketing to learn about the most critical developments in this topic. Where the interest of researchers recently increased through various studies and linking them to multiple fields. This study

attempts to determine the trend of neuromarketing research in the Scopus database in recent years to get acquainted with the development of publishing, the most influential researchers, journals and research centres, and the countries in which neuromarketing is active.

Nowadays, the dilemma is whether neuromarketing is a sustainable strategy. Neuromarketing provides more conditions for success compared to classical marketing. Marketing research effectively analyses the purchase decision, saves organisations money, maintains the brand's reputation, and understands consumer behavior in various states [1]. Usually, neuroimaging techniques are used before a product is marketed and can increase its chances of success. On the other hand, traditional marketing needs to be more accurate concerning the decision-making process [2]. In addition, neuromarketing research confirms the possibility of identifying the emotions being processed quickly, allowing the identification of the origin of these feelings [3]. Furthermore, due to its low cost, speed, and volume of information it can process, neuroimaging can contribute to the success of neuromarketing [4].

Nevertheless, there are numerous criticisms levelled at neuromarketing. For example, the latter concerns the consumer's subconscious mind and is a source of individual privacy infringement [5]. Also, people who use neuromarketing question how much people can choose to avoid buying products being marketed to them, making them easy targets for campaigns by different organizations[3]. In the same context, neuromarketing-related developments will exacerbate the issue of consumer autonomy, mainly if the optimization of efficient neuromarketing is realized[6].Neuromarketing may unethically use consumer data to identify biological weaknesses and infer thoughts[7]. In addition, for-profit companies using neuromarketing may manipulate preferences, extrapolate results from small samples, and disregard individual welfare[8].

Analysis of the latest research and publications, which initiated the solution of this problem and on which the author relies. Neuromarketing is the use of neuroscience methods and techniques in marketing. The term "neuromarketing" was first used in June 2002 by an Atlanta advertising firm, Bright House, to start a business that used Functional Magnetic Resonance Imaging (FMRI) for marketing research[9]. Neuromarketing aims to measure, record, and analyze signals related to the brain's physiological response to specific stimuli in various market contexts[10]. Indeed, it is to comprehend and forecast consumer behavior in response to a specific stimulus[11]. Neuromarketing employs neural methods to determine the driving forces behind consumer choices and interactions with specific advertising. Thus, data can be utilized to develop new advertising campaigns and brand promotions[12]. Neuromarketing helps to improve customer understanding and the trend toward creating creative advertisements to enrich the various fields of marketing (Luther& Hayes,2022). Neuromarketing is being developed with the contribution of several scientific disciplines, including medicine and psychology [13]. This fusion of science and marketing aims to explain purchasing decisions and analyze thoughts and desires in an unconscious state[14].

Scholars have stated the different tools of neuromarketing. For instance, FMRI (Functional Magnetic Resonance Imaging) measures the rise in oxygenated blood to particular brain regions in reaction to a specific stimulus. PET, or Positron Emission Tomography, utilizes radioisotopes to classify molecules in the brain and identify specific neurotransmitters of interest. Electroencephalography (EEG) is a method of assessing brain function which uses electrodes. Eye-tracking is a technique for assessing visual attention that can trace a person's perspective and status of excitement in a stimulus's reaction. GSR Galvanic Skin Response is a physiological response to any stimulus representing the emotional state. Heart rate and respiration accurately measure changes in a person's emotional response to stimuli[15]–[20].

Thus, the advancement of the field of neuromarketing necessitates a significant contribution to the following scientific fields: technology, neuroscience, and computer science[21].

Neuromarketing is a contemporary approach to achieving marketing goals[22]. Neuromarketing shares have risen because it is expected to be the fastest marketing strategy and can provide information that has previously eluded traditional marketing[23]. Also, the use of neuromarketing influences the consumer through the decision-making process. On the other hand, organizations that use neuromarketing will benefit financially through effective budget management[3]. Neuromarketing could strengthen the various contents of advertising, as it provides innovative mechanisms to extract the content of minds[23]. Hence, neuromarketing is a crucial marketing proposition since it allows organizations to distinguish between consumer desires, needs, and what they can buy[24]. In other words, neuromarketing is linked to consumers' minds while being far from their thinking, as it differs entirely from marketing models [23].

The goal of neuromarketing is to develop sound neuroscientific explanations for the effect of marketing on customer behavior. Thus, theories and methods from neuroscience are adapted and incorporated into marketing[25]. The latter allows for data disclosure in connection with the purchaser's decision-making. Furthermore, one of the benefits of neuromarketing is information security for marketers. Organizations' failures under neuromarketing are low due to prior customer and product research, which provides a competitive advantage[26]. In addition, neuromarketing may be to better understand the neural correlates of emotion, awareness and cognition on the one hand and decision-making in advertising campaigns on the other[27].Researchers have summarized the goals environment of neuromarketing as follows: Integrating neuroscience methods with marketing theories, collecting consumers' information and their mental orientations, monitoring brain activity towards any marketing stimulus and customer motivations, and finally, determining the essential part of the brain that is responsible at the moment of making a consumption decision[28].

Highlighting the previously unresolved parts of the general problem to which the article is devoted. The bibliometric study is vital for studying the intellectual structure and publishing trends on a specific topic. It was determined by 103 articles published on the Scopus database from 2014 to the beginning of 2023. Also, many bibliometric studies were conducted, especially in neuromarketing. However, this study seeks to analyze bibliometric neuromarketing in the field of Business, Management and Accounting and any publications related to this field.

Formulation of the purpose of the article (statement of the problem). This article aims to know the trend of publishing on the topic of neuromarketing from the years 2014-2023 in the Scopus database. It attempts to increase the effectiveness of information exchange between academics and researchers on neuromarketing. Furthermore, to identify the authors, countries, research institutions, and the most influential journals in neuromarketing. Also, to predict future research trends in neuromarketing.

Statement of the main material of the research with full justification of the scientific results obtained.

Methodology.

The bibliometric analysis uses academic publications from a database to study global research trends[29]. The bibliometric analysis technique review examines knowledge base trends and structure across disciplines. Thus, it provides robust technical, objective, and methodological analysis[30], [31]. Scientific or bibliometric mapping shows how disciplines, fields, specialities, papers, and authors relate. VOSviewer is a mapping tool. VOSviewer can create co-authorship, co-citation, bibliographic coupling, and co-occurrence maps[32].

• *Data analysis process.*

This analysis uses bibliographic data from 103 Scopus neuromarketing publications from 2014 to 2023. Figure 1 shows the stages of a search strategy that sum up the whole process.
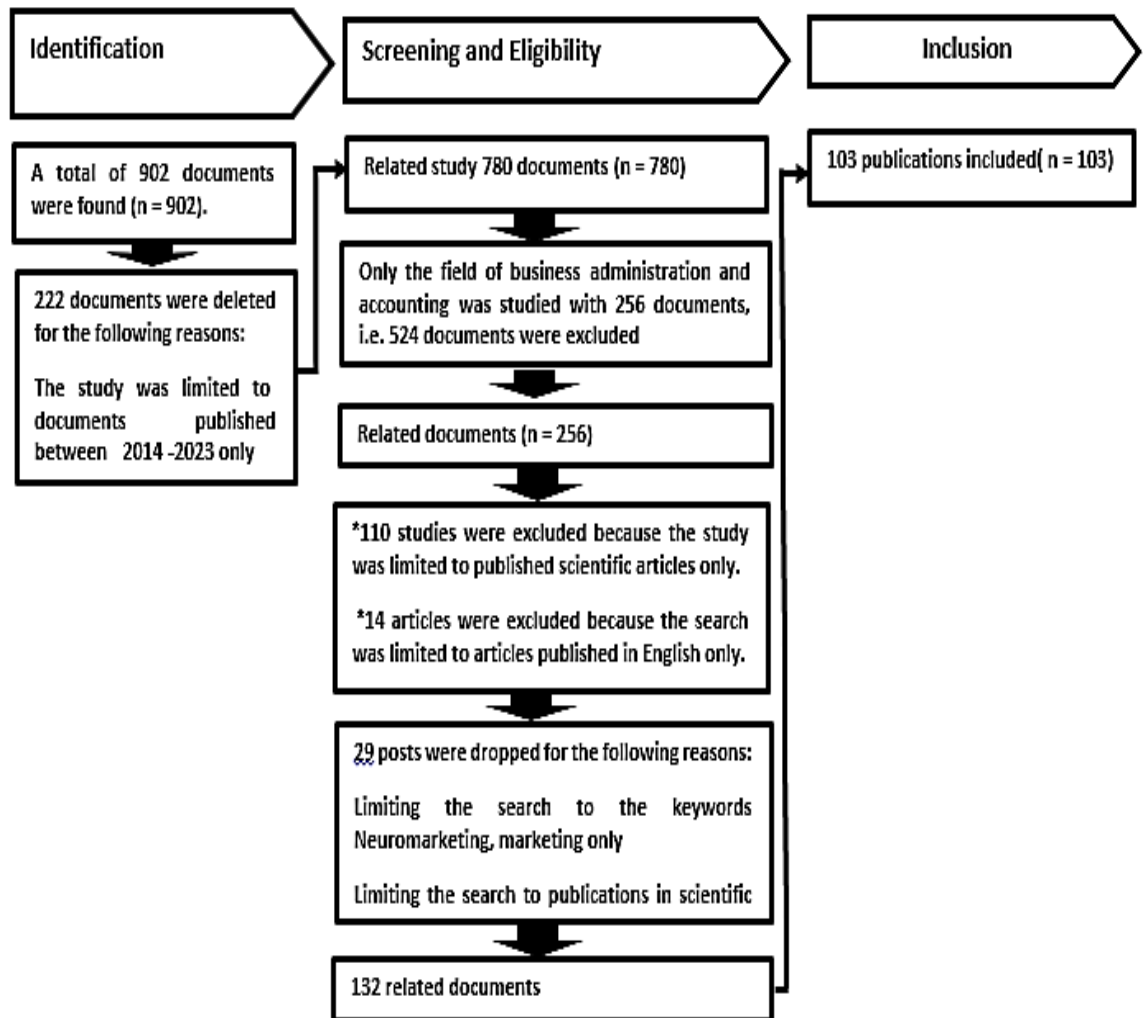

Figure 1 – research strategy summary (compiled by the author)

• *Results*: According to the Scopus database, the number of articles published each year ranged from five in 2014 and 2016 to eighteen in 2021 and 2022, indicating the ongoing evolution of the marketing field in general and the neuromarketing field. Figure 2 illustrates the evolution of research on neuromarketing studies over a decade from 2014 to 2023. Hence, due to its diversity of disciplines and fields, neuromarketing has become an extensive and fertile field for publication, enabling researchers to comprehend and predict consumer choices and behavior[11].
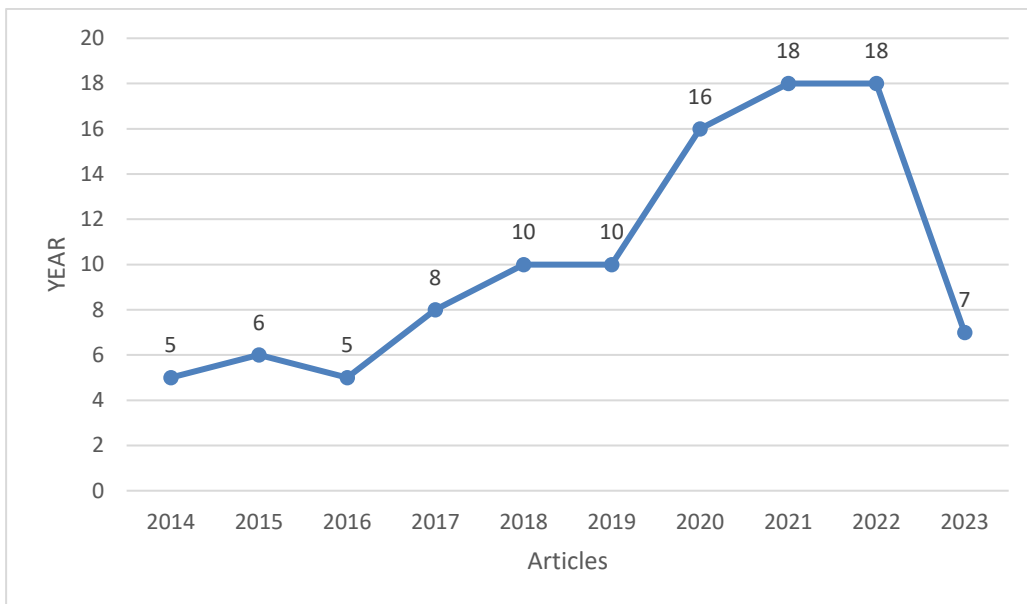
Figure 2 – Publications trend (2014 to 2023)

1-Top Countries in Neuromarketing: Figure 3 – shows the countries involved in research activities on neuromarketing from 2014 to 2023. A total of 41 countries worked on neuromarketing in the world from 2014 to 2023. The top 10 countries were selected to participate in the publication of the most significant number of articles. Among the most important of these countries, the United States tops the list with 12 publications. Spain and the United Kingdom were in second place, with 10 articles each. The third place includes Australia and Italy with 8 publications each, Malaysia, Turkey and the Netherlands with 6 articles, then Germany and Brazil with five articles.
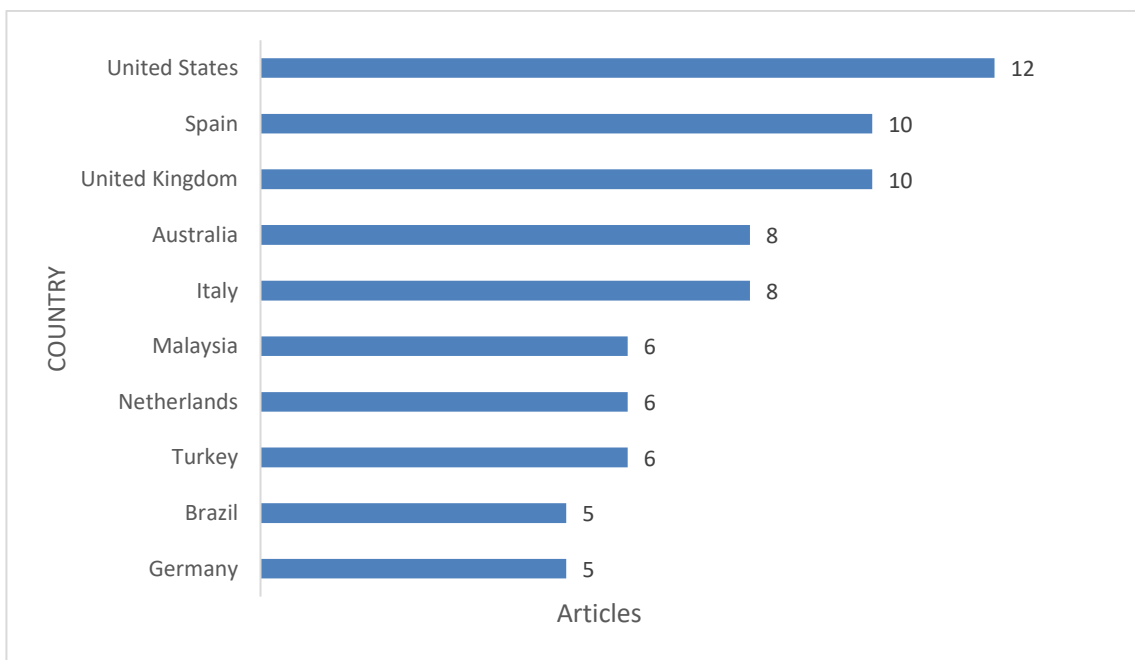

Figure 3 – Publications by Country (2014 to 2023)

Also, Figure 4 shows that publications related to Business, Management and Accounting topped the chart with the highest percentage, amounting to 53.9%, and publications related to Economics, Econometrics and Finance came in second place, amounting to 14.7%. On the other hand, the publications of other majors were in descending order, with the percentage of publications in Social Sciences at 6.8%, followed by Psychology publications at 4.2%, Computer Science publications at 3.7%, Arts and Humanities and Engineering publications at 2.6%, and Decision Sciences publications at 2.6%. 2.1%, the publications of Agricultural, Biological Sciences and Mathematics by 1.6%. Finally, others by 6.3%. It is worth noting that these statistics were extracted between 2014 and 2023, and it is noted that the field of Business, Management and Accounting is of great importance compared to other fields due to its connection to neuromarketing. Such topics represent an essential cornerstone for making strategic decisions in Business organizations.
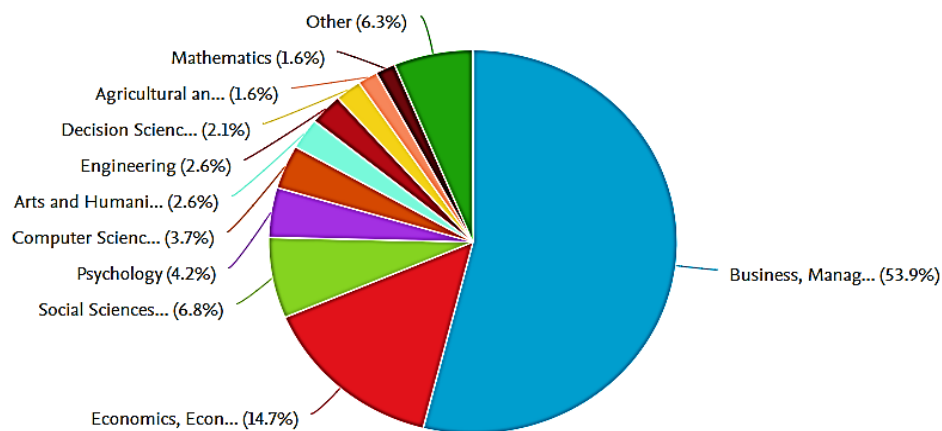

Figure 4 – Publications by subject area (2014 to 2023)

Moreover, Figure5 depicts the top 10 research institutions in terms of publication on neuromarketing in business administration, with the Korean Sungkyunkwan University at the top of the list with 5 research papers published, followed by the other research institutions depicted in Figure5.For instance, institutions are mainly ranked by the quality of their researchers' articles.
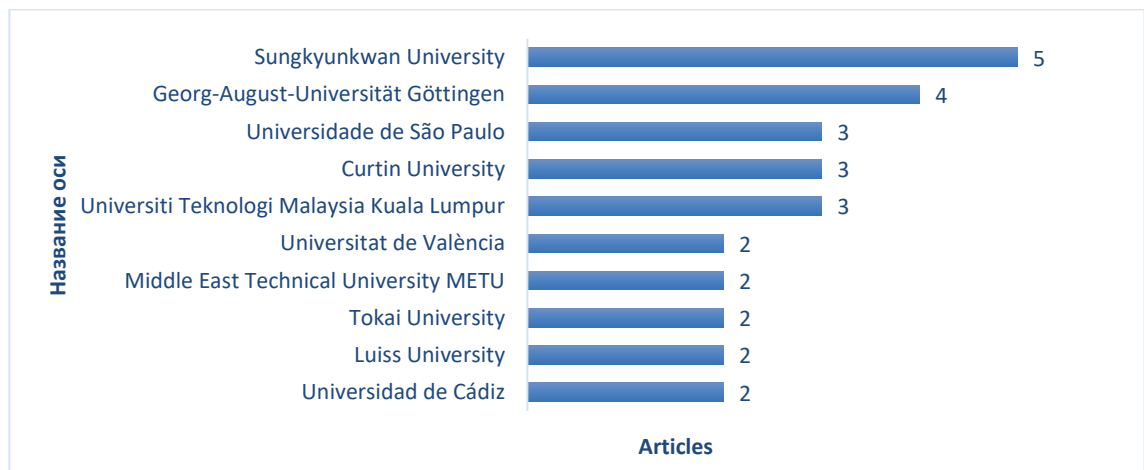

Figure 5 – Publications by affiliation (2014 to 2023)

- *Co-authorship analysis*: Co-authorship analysis by the VoSviewer at the level of country/region and author will be carried out to characterise the collaboration relationship for publications on neuromarketing.

1-Organizations: The degree of organisational collaboration is depicted in Figure 6 on a network visualisation map. 90 out of the 235 organisations met the requirement. One article with at least 10 citations identified the organisation with the fewest articles overall. The findings reveal that the cooperating organisations were all represented in a single, five-element red cluster.
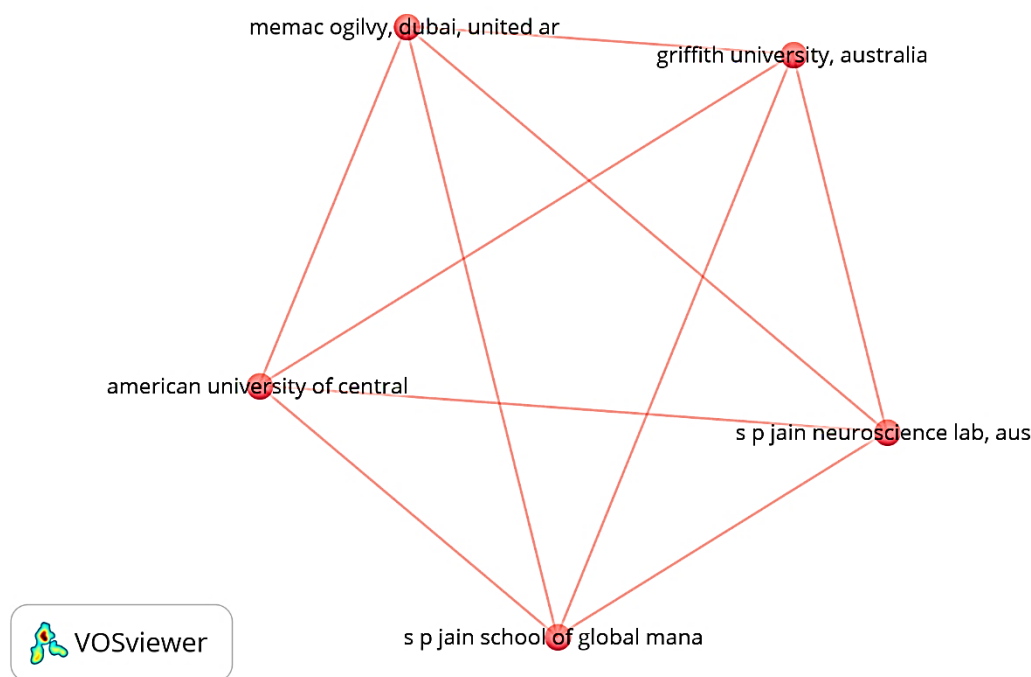

Figure 6 – Co-authorship network visualization map for organizations

2-countries/regions: Figure 7 – contains countries/regions with collaboration on a network visualization map. The lowest number of articles for a country/region was identified in two articles. Of the 42 countries/regions, 25 countries/regions met the threshold. The results show that the cooperating countries/regions were classified into 05 clusters: Cluster 1 (in red) contains four countries (Japan, Lithuania, Malaysia, and Pakistan). Cluster 2 (in green) contains four countries (Croatia, India, Saudi Arabia and the United Kingdom). Cluster 3 (in blue) contains three countries (Australia, South Korea, and the United Arab Emirates). Cluster 4 contains four elements (in yellow) (France, the Netherlands, and the United States), and Cluster 5 (in purple) contains three elements (China, Italy, and Spain).
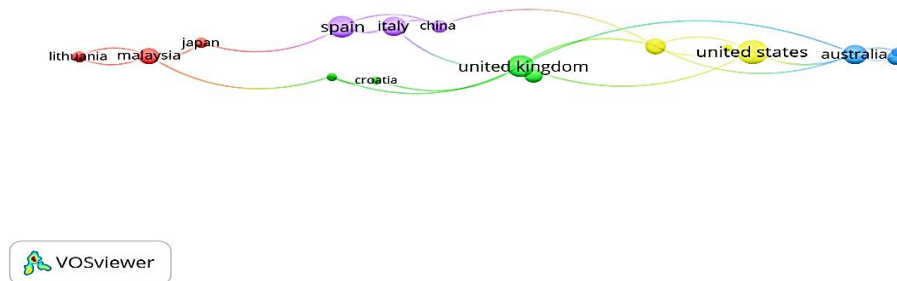
Figure 7 – Co-authorship network visualization map for countries/regions

A minimum of two articles per author and a minimum number of citations were set. The results showed 38 authors, as shown in the table, and the collaborating authors were classified into 37 clusters: Cluster 1 contained 2 authors (Chen t and Jai T.M.C). In contrast, the other clusters each cluster included only one author. Thus, individual research is widely used and no connections between authors who have done work on neuromarketing, as shown in Figure 8 and Table 1 by correlation strength. In the same context, the authors' collaboration map indicates the strength of the authors' collaboration, where the lines' thickness represents the collaboration level. The circle's size indicates a large number of articles. At the same time, the colours indicate the cooperation cluster [33].

3- authors.

Table 1 – Presents the results concerning authors on the topic of neuromarketing. Authors parameters

Author	Documents	Citations	Total Link Strength
Al-Kwifi S.O.	1	19	0
Alonso Dos Santos M.; Calabuig Moreno F.	1	27	0
Alvino L.; Van Der Lubbe R.; Joosten R.A.M.; Constantinides E.	1	15	0
Baldo D.; Parikh H.; Piu Y.; Müller K.-M.	1	31	0
Bastiaansen M.; Straatman S.; Driessen E.; Mitas O.; Stekelenburg J.; Wang L.	1	59	0
Boksem M.A.S.; Smidts A.	1	182	0
Booth D.A.; Freeman R.P.J.	1	11	0
Boz H.; Arslan A.; Koc E.	1	44	0
Cruz C.M.L.; De Medeiros J.F.; Hermes L.C.R.; Marcon A.; Marcon E.	1	15	0
Daugherty T.; Hoffman E.; Kennedy K.; Nolan M.	1	27	0
Gountas J.; Gountas S.; Ciorciari J.; Sharma P.	1	22	0
Hakim A.; Klorfeld S.; Sela T.; Friedman D.; Shabat-Simon M.; Levy D.J.	1	14	0

|			
Hamelin N.; Moujahid O.E.; Thaichon P.	1	66	0
Hamelin N.; Thaichon P.; Abraham C.; Driver N.; Lipscombe J.; Naik M.; Pillai J.	1	19	0
Horská E.; Berčík J.	1	17	0
Hsu L.; Chen Y.-J.	2	37	0
Hsu M.	1	55	0
Chen T.; Cai W.	1	14	1
Jai T.-M.C.; Fang D.; Bao F.S.; James R.N.	1	14	1
Koc E.; Boz H.	1	30	0
Kılıç F.; Yolbulan Okan E.	1	10	0
Lee E.-J.	1	42	0
Lee E.-J.; Kwon G.; Shin H.J.; Yang S.; Lee S.; Suh M.	1	32	0
Lee N.; Chamberlain L.; Brandes L.	1	51	0
Lim W.M.	1	101	0
Meyerding S.G.H.; Mehlhose C.M.	1	38	0
Michael I.; Ramsoy T.; Stephens M.; Kotsi F.	1	24	0
Nemorin S.	1	20	0
Peyravi B.; Nekrošienė J.; Lobanova L.	1	12	0
Pileliene L.; Grigaliunaite V.	1	26	0
Spence C.	1	45	0
Stanton S.J.; Sinnott-Armstrong W.; Huettel S.A.	1	81	0
Sung B.; Wilson N.J.; Yun J.H.; Lee E.J.	1	17	0
Touchette B.; Lee S.-E.	1	35	0
Ulman Y.I.; Cakar T.; Yildiz G.	1	41	0
Van Der Rest J.-P.I.; Sears A.M.; Miao L.; Wang L.	1	13	0
Yang D.-J.	1	10	0
Çakir M.P.; Çakar T.; Girisken Y.; Yurdakul D.	1	35	0
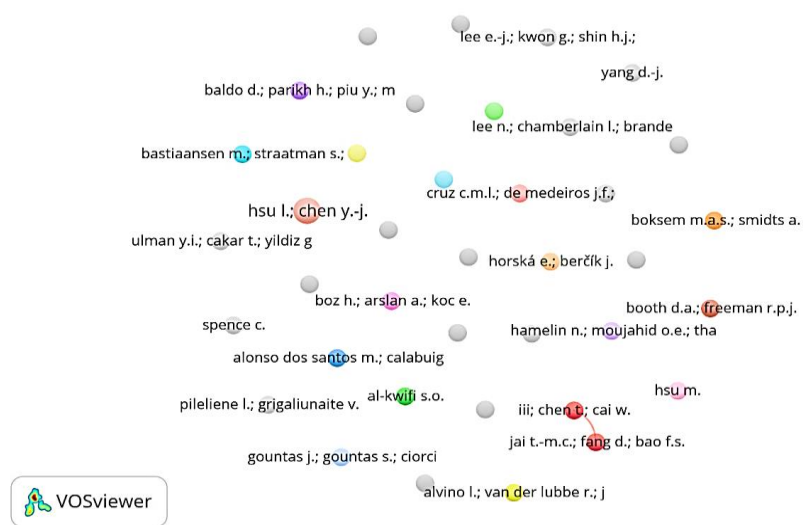
Figure 8 – Co-authorship network visualization map for authors

• *Co-occurrence (Author Keywords)***:** Frequency analysis was performed for the authors' keywords, and a minimum number of keyword impressions was set equal to 5. The analysis resulted in 14 keywords out of a total of 320. Table 2 shows keywords based on their overall link strength. The total association strength was 146. In addition, according to Figure 9, the keyword "neuromarketing" ranked higher in terms of total association strength 95 and is the most frequent occurrence 99, and with neuroscience, consumer neuroscience, and EEG, with association strength 27, 22, and 20, respectively. In addition, "neuromarketing" has significant links with consumer behavior, fMRI, marketing, neuroscience, and psychology correlated 17, 16, 15, 27, and 9, respectively. Simultaneously, the word neuromarketing with attention, decision-making, neuroeconomics, and eye tracking had correlation strengths of 10,14,11,9, respectively.

Table 2 – Represent result of top 14 keywords co-occurring in articles published o of the neuromarketing (rank based on total link strength).

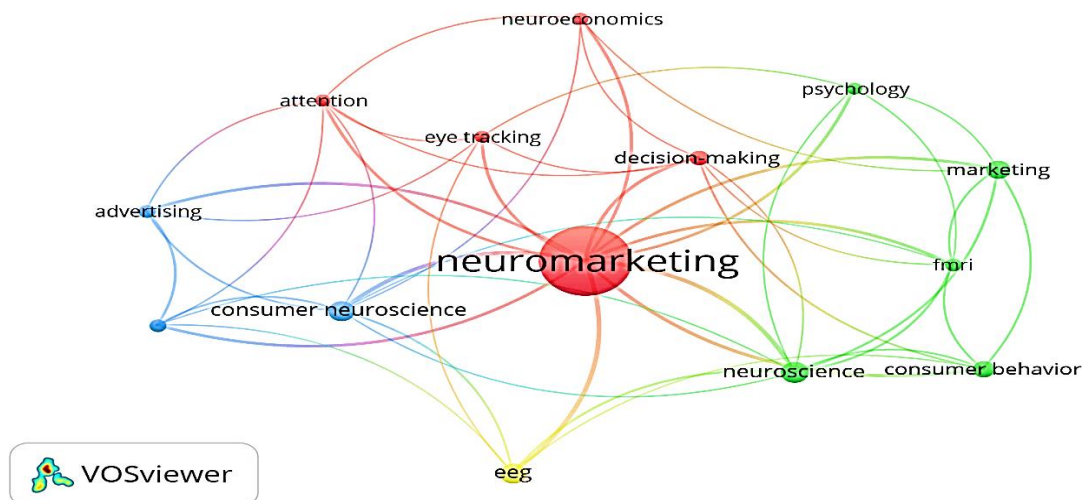| Keyword	Links	Occurrences	Total Link Strength
Advertising	5	6	13
Attention	7	5	11
Consumer Behavior	6	9	17
Consumer Neuroscience	8	12	22
Decision-Making	7	7	14
EEG	6	12	20
Electroencephalography	6	6	14
Eye Tracking	6	5	10
FMRI	7	6	16
Marketing	6	10	15
Neuroeconomics	5	5	9
Neuromarketing	13	99	95
Neuroscience	9	13	27
Psychology	5	5	9

Figure 9 – Co-occurrence network map of keywords from articles published (2014-2023).

- *Co-citation of cited authors*: Figure10 indicates only 22 authors out of 10271. For author citations, the lowest number of author citations was set to 33. Out of 10271 authors, 22 authors fulfilled the threshold. By total association strength is Plassman. He is the most cited author in the Scopus database, followed by Lee and Kenning.
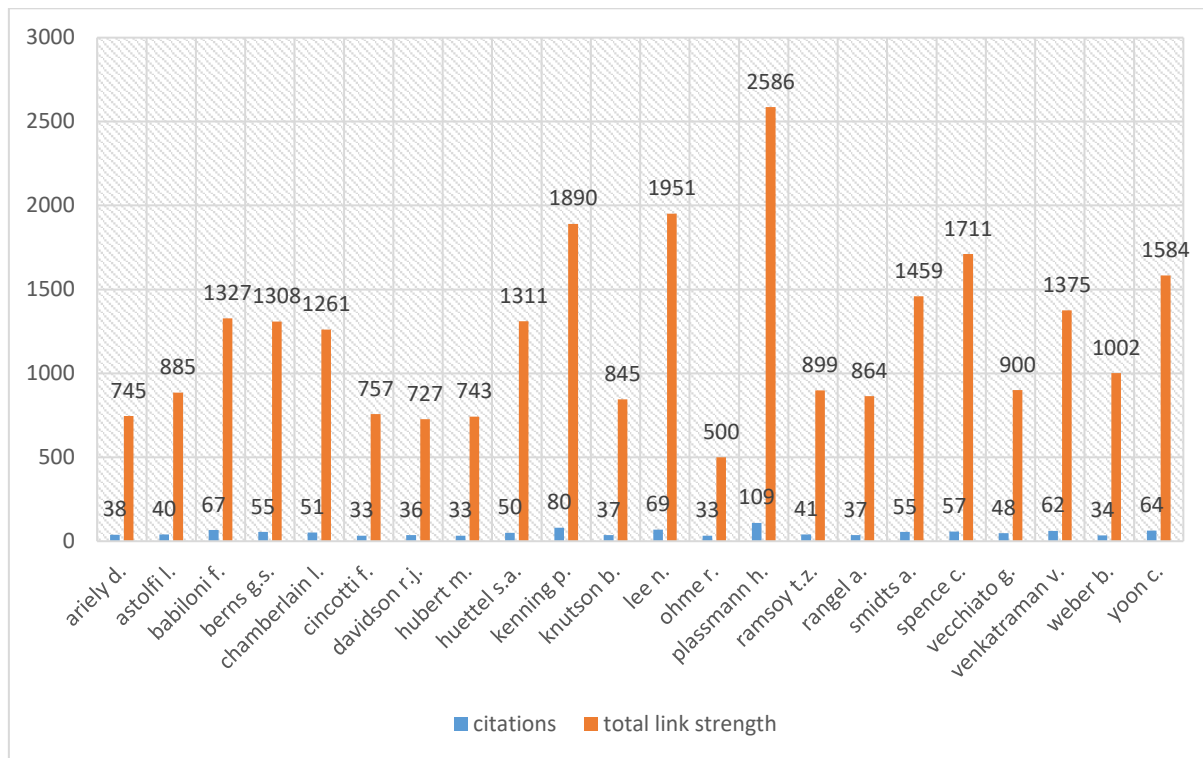

Figure 10 – Co-citation of cited authors.

- *Co-cited references*: Regarding the co-citation of cited references, 6 out of 5837 references met the minimum of 20 citations for the quoted reference. Therefore, Table 3 only contains 20 references. The results indicate that Plassmann H. et al. (2015) is the most frequently cited reference, with 67 citations and 18 total link strength. In other words, Plassmann H. et al. (2015) have the best aggregate co-citation association strength. Table 3 is illustrated the results of co-cited references.

Table 3 – Co-cited references

Author(S)	Title	C**	T***
Agarwal S., Dutta T., (2015)	Neuromarketing And Consumer Neuroscience: Current Understanding And The Way Forward,	6	21
Ariely D., Berns G.S., (2010)	Neuromarketing: The Hope And Hype Of Neuroimaging In Business,	15	50
Camerer C., Loewenstein G., Prelec D., (2005)	Neuroeconomics: How Neuroscience Can Inform Economics	6	30
Harris J.M., Ciorciari J., Gountas J., (2018)	Consumer Neuroscience For Marketing Researchers, Journal Of Consumer Behaviour	6	20

Hubert M.,(2010)	Does Neuroeconomics Give New Impetus To Economic And Consumer Research? (2010)	6	21
Hubert M., Kenning P., (2008)	A Current Overview Of Consumer Neuroscience	10	38
Khushaba R.N., Wise C., Kodagoda S., Louviere J., Kahn B.E., Townsend C., (2013)	Consumer Neuroscience: Assessing The Brain Response To Marketing Stimuli Using Electroencephalogram (Eeg) And Eye Tracking	7	15
Knutson B., Rick S., Wimmer G.E., Prelec D., Loewenstein G., (2007)	Neural Predictors Of Purchases	12	39
Lee N., Broderick A.J., Chamberlain L. (2007)	What Is 'Neuromarketing'? A Discussion And Agenda For Future Research	9	35
Lee N., Chamberlain L., Brandes L., (2018)	Welcome To The Jungle! The Neuromarketing Literature Through The Eyes Of A Newcomer	6	36
Mcclure S.M., Li J., Tomlin D., Cypert K.S., Montague L.M., Montague P.R., (2004)	Neural Correlates Of Behavioral Preference For Culturally Familiar Drinks	13	40
Morin C., (2011)	Neuromarketing: The New Science Of Consumer Behavior	10	29
Ohme R., Reykowska D., Wiener D., Choromanska A(2010)	Application Of Frontal Eeg Asymmetry To Advertising Research	9	31
Plassmann H., O'doherty J., Shiv B., Rangel A., (2008)	Marketing Actions Can Modulate Neural Representations Of Experienced Pleasantness	7	33
Plassmann H., Ramsoy T.Z., Milosavljevic M., (2012)	Branding The Brain: A Critical Review And Outlook	10	46
Plassmann H., Venkatraman V., Huettel S., Yoon C., (2015)	Consumer Neuroscience: Applications, Challenges, And Possible Solutions	18	67
Solnais C., Andreu-Perez J., Sanchez-Fernandez J., Andreu-Abela J., (2013)	The Contribution Of Neuroscience To Consumer Research: A Conceptual Framework And Empirical Review	7	33
Stanton S.J., Sinnott-Armstrong W., Huettel S.A., (2017)	Neuromarketing: Ethical Implications Of Its Use And Potential Misuse	6	28
Venkatraman V., Dimoka A., Pavlou P.A., Vo K., Hampton W., Bollinger B., Winer R.S., (2015)	Advertising Success Beyond Traditional Measures: New Insights From Neurophysiological Methods And Market Response Modeling	7	36
Zurawicki L., (2010)	Neuromarketing: Exploring The Brain Of The Consumer	6	12

• *Bibliographic coupling analysis*: When two documents tend to cite one or more of the same sources, Kessler (1963) describes them as a "bibliographic couple"[34] . In addition, the bibliographic coupling science mapping method is predicated on the notion that two bibliographic records should have identical references[35]. Out of 74 sources, Figure 11 displays those 16 journals met the criteria. The source required a minimum of one document. The Journal of Business Research, the Asia Pacific Journal of Marketing and Logistics, the European Journal of Marketing, the International Journal of Market Research, and the Journal of Psychology and Marketing have the highest total link strengths, as shown in Table 4. Moreover, Psychology and Marketing is the most recent neuromarketing journal published in 2022. (Figure 11). The Journal of Consumer Marketing, the eldest publication, was published in 2015. Also, Figure 12. shows the bibliographic coupling of countries is clustered, and 12 met the threshold out of 42 countries. The minimum number of documents for a country was 5. The yellow colour represents a recent interest in neuromarketing. In contrast, the blue indicates that the country's interest in neuromarketing is previous. The curve length indicates the total strength of the connection between countries. These include Australia, Brazil, Germany, India, Italy, Netherlands, Malaysia, South Korea, Spain, Turkey, and the United States.
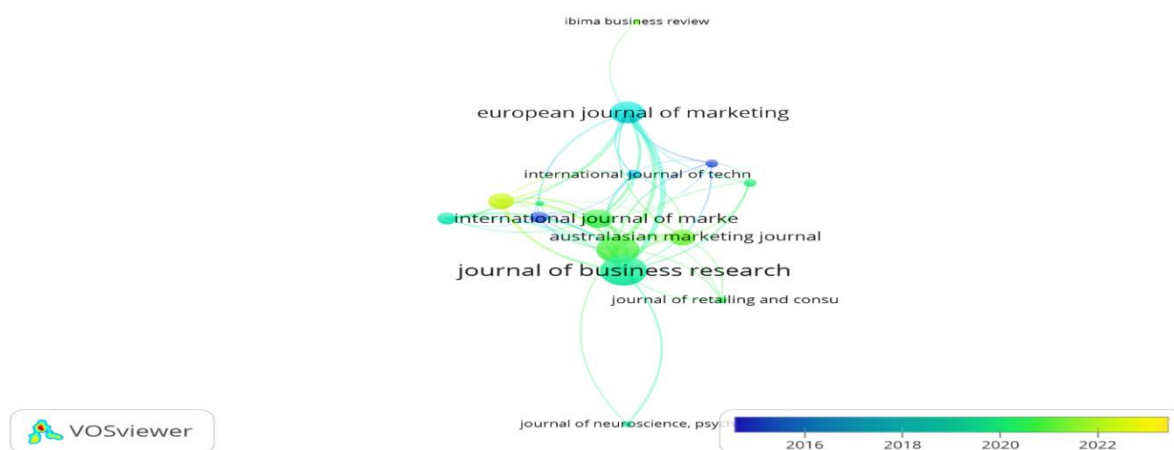

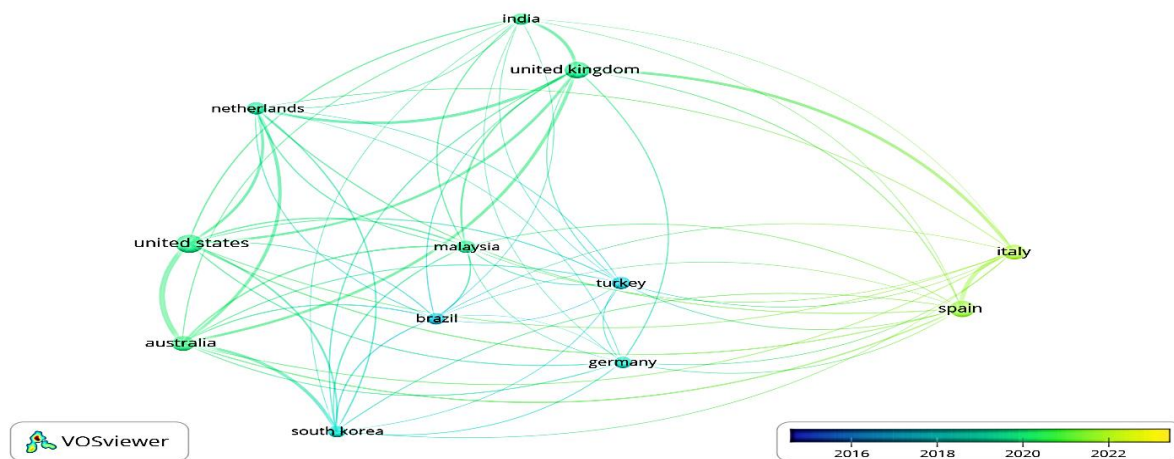
Figure 11 – Bibliographic coupling of sources

Figure 12 – Bibliographic coupling of countries

Table 4 – Bibliographic coupling of sources

Source	Documents	Citations	Total Link Strength
Asia Pacific Journal Of Marketing And Logistics	6	44	133
Australasian Marketing Journal	2	24	44
European Journal Of Marketing	3	113	84
Ibima Business Review	2	1	1
Indian Journal Of Marketing	2	5	11
ernational Business Management	2	2	0
International Journal Of Market Research	2	8	62
International Journal Of Technology Marketing	2	6	14
Journal Of Advanced Manufacturing Technology	3	12	25
Journal Of Business Ethics	2	113	22
Journal Of Business Research	6	210	154
Journal Of Consumer Marketing	2	37	12
Journal Of Neuroscience, Psychology, And Economics	3	9	7
Journal Of Retailing And Consumer Services	4	94	8
Psychology And Marketing	2	7	45
Social Marketing Quarterly	2	11	6

Conclusions from this research and prospects for further developments in this area. Neuromarketing (NM) is a fertile and relatively recent field that combines neuroscience, marketing and psychology through research on the motives behind consumer preferences and brain stimuli towards products and interactions with them. These signals are analysed for predicting consumer choices and used in advertising campaigns and brand promotion. The most popular neuromarketing tools are Functional Magnetic Resonance Imaging FMRI, Electroencephalography EEG, Positron Emission Tomography PET, eye tracking, Galvanic Skin Response (GSR), heart rate, and respiration. The present review paper focused on NM studies in action research from 2014 to 2023 by searching the Scopus database. 103 articles were drawn from the Scopus database. Thus, the data were analysed descriptively using bibliometric analysis to understand research trends based on the VOSviewe program. It was noted that NM research increased exponentially between 2014 and 2022.

The outputs show that Publications on Business, Management, and Accounting dominated the chart with the highest percentage, totalling 53.9%, while publications on Economics, Econometrics, and Finance came in second, totalling 14.9%. Due to its connection to neuromarketing, the field of Business, Management, and Accounting has been determined to be more significant than other disciplines. In addition, the results suggest a developing interest in neuromarketing research. First place went to the United States, Spain, and the United Kingdom. Korea's Sungkyunkwan University led the list of the finest publishing institutions. Furthermore, the results demonstrated that Plassman is the most cited author in the Scopus database. Neuroscience, consumer neuroscience, EEG, consumer behavior, FMRI, marketing, neuroscience, and psychology are the terms with which "neuromarketing" has the strongest overall association strength (95). In the future, conducting

a bibliometric analysis on the ethics of neuromarketing is necessary, especially since there is significant controversy among researchers on this subject.

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Тенденції досліджень нейромаркетингу протягом останніх десяти років: бібліометричний аналіз баз даних Scopus.

Мета полягає в дослідженні наукової літератури з нейромаркетингу за допомогою бібліометричного аналізу для дослідження основних тем, авторів, джерел, найбільш цитованих статей і провідних країн у літературі з нейромаркетингу. З 2014 по 2023 роки досліджувалися статті, індексовані в базі даних Scopus. У результаті початкового пошуку було зібрано 780 статей, з яких 103 опубліковані статті були обрані як дійсні для нейромаркетингового аналізу з використанням інструменту VOSviewer для відображення щільності, спільності, тенденцій і зв'язку даних. Отримані дані свідчать про те, що розвиток видавничої справи зростає між 2014 і 2022 роками. Крім того, результати означають зростаючий інтерес до досліджень нейромаркетингу. Перше місце зайняли США, за ними Іспанія та Велика Британія. Університет Sungkyunkwan в Кореї очолив список найкращих закладів для видавничої справи. Крім того, результати показали, що Plassman є автором, який найчастіше згадується в базі даних Scopus. Ключове слово «нейромаркетинг» має найвидатнішу загальну силу асоціації (95) із нейронаукою, нейронаукою споживача, ЕЕГ, поведінкою споживача, FMRI, маркетингом, нейронаукою та психологією. Результати цього дослідження допомагають дослідникам розробити надійну дорожню карту для глибшого вивчення та визначення майбутніх напрямків досліджень нейромаркетингу.

Ключові слова: нейромаркетинг, бібліометричний аналіз, база даних Scopus, співпоява, співцитування.