

BIBLIOMETRIC ANALYSIS OF RESEARCH ON AGEISM

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ABSTRACT

Due to the COVID-19 pandemic, interest in ageism has significantly increased, particularly in studies that focus on social isolation and loneliness among the elderly. While often perceived as discrimination against older individuals, ageism is also linked to concepts such as sexism and active ageing. This study analyses research on ageism in the Web of Science database through bibliometric analysis using VOSviewer (1.6.19) software. The primary questions concentrate on publication categories, the most-cited countries and institutions, leading researchers, and keyword trends. The results indicate that the United States is the most cited and published country in this field. Liat Ayalon is recognised as the leading researcher based on the number of publications and citations. Recent studies increasingly highlight keywords such as loneliness, social isolation, intergenerational relationships, and active ageing. This analysis offers valuable insights into the evolving focus of ageism research and its growing significance in the context of global ageing populations.

Keywords: Ageism, Age Discrimination, Bibliometric Analysis.

JEL Code: J0, J1, J7, J14.

1. INTRODUCTION

The global population is ageing. In 2023, the global population has exceeded 8 billion (*World Population Clock*, 2023). United Nations estimates that the global population will reach 8.5 billion in 2030, 9.7 billion in 2050 and 10.4 billion in 2100. With this increase in the global population, the age 65 population is overdrawing attention. While the share of the population aged 65 and over worldwide was 10 per cent in 2022, it is estimated to increase to 16 per cent in 2050. By 2050, it is estimated that the number of people aged 65 and over worldwide will be more than twice the number of children under the age of 5 and about the same as the number of children under the age of 12. The increase in the share of the older adult population in the global population is due to lower mortality and increased survival

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rates, while the rise in the median age in the population age distribution is due to the continuous decline in fertility levels. (*World Population Prospects - Population Division - United Nations*, 2022).

The increasing proportion of the elderly population has made revising social and economic policies necessary. Issues such as financing social security, increasing the retirement age and elderly care are being discussed, especially in developed countries. Both at the focus of these discussions and in the mental background of the people who carry out the discussion, there are prejudices, attitudes and behaviours about the elderly. The concept of Ageism, which defines the feelings, thoughts and behaviours that people have about older people and which has a wide place in the literature, is thought to affect current and future social and economic policies when considered together with the phenomenon of global population ageing.

For the first time, American Gerontologist Robert Butler used the term Ageism to describe discrimination against older adults and the changes associated with ageing. (Butler, 1969). He introduced the concept of Ageism to the literature as a new form of bigotry, especially in 1960s America, where people were intensely discriminated against because of their skin colour. Butler analyses Ageism in three interrelated dimensions. These are prejudice, discrimination, and institutional practices and policies. Prejudice is preconceived judgments about older people and the ageing process, including those against oneself.

Discrimination is the discrimination that a person is exposed to because of their age in all aspects of social life, such as employment or social roles attributed to older persons. Institutional practices and policies are those that, often without malice, perpetuate stereotypical beliefs about older persons, reduce their opportunities for a fulfilling life and undermine their personal dignity (Butler, 1980: 8).

According to the World Health Organization, ageism is defined as a multifaceted and social phenomenon that includes stereotypes (thoughts), prejudices (feelings) and discriminatory attitudes (behaviours) towards others or oneself based on age. (*Global Report on Ageism*, 2021: 2). As can be understood from these definitions, Ageism manifests itself in cognitive (e.g. stereotypes), emotional (e.g. prejudice) and behavioural dimensions (e.g. discrimination). In addition, Ageism can occur both consciously (explicit) and unconsciously (implicit), and it can also occur at three different levels: micro (individual), meso (social networks) and macro (institutional and cultural). (Marques et al., 2020: 2).

This study covers the studies on Ageism scanned in the Web of Science database. Its aim is to present the studies within the scope using bibliometric analysis with VOSviewer.

The study begins with a literature review and then details the research method. Finally, the findings are presented, including tables and network analyses to guide the researchers.

2. RELATED LITERATURE REVIEW

When the literature was examined, it was seen that there were no bibliometric studies directly related to ageism or age discrimination, and the studies were examined within the framework of ageing and old age. There are various factors affecting older people.

For example, Soytaş (2021) VOSviewer bibliometrically analysed articles about Covid-19 and older people published between 1 December 2019 and 17 March 2021. In the study, which included a total of 784 publications, the most common keywords included social isolation, dementia, mortality, and loneliness, while the most cited country was the United States of America.

Liu et al. (2023) focused on the relationship between the elderly and sleep in the Web of Science database and analysed the articles bibliometrically with CiteSpace. According to the analysis results, the number of publications examining the issue of sleep in the elderly is gradually increasing, and this field has shown rapid development since 2017. The country with the most citations is the United States of America, and the country with the most cited institutions in this field is the United States of America. Among the separate results, the studies conducted in this field are on insomnia, sleep quality, depression and sleep duration.

Müller et al. (2016) conducted a bibliometric analysis of research on physical activity and ageing. The analysis included 9,935 publications in the Web of Science database from 1980 to 6 February 2015. According to the results of the analysis, most of the publications were published after 2007, and the highly cited researchers worked in institutions operating in the United States.

Home care is another issue that has started to come to the agenda more and more as the phenomenon of population ageing has started to make itself felt more. Cao et al. (2021) analysed 2,631 articles from the Web of Science database on older people and home care. The articles comprised 79 countries, 3,630 institutions, 647 journals and 11,691 authors, and the relationships between them were analysed with VOSviewer. According to the results of the analysis, the United States of America is the most cited country. Key concepts such as smart home, fall detection, personalised smart products, and cloud computing are included as mainstream concepts for home care safety.

3. DATA COLLECTION AND METHOD

Scholars use bibliometric analysis for a variety of reasons, such as uncovering emerging trends in article and journal performance, collaboration patterns and research components, and exploring the intellectual structure of a particular field in the existing literature (Donthu et al., 2021a, Verma and

Gustafsson, 2020, Donthu et al., 2021b). The data at the centre of bibliometric analysis tend to be large (hundreds, if not thousands) and objective (number of citations and publications, keywords and occurrence of topics). But their interpretation is often based on objective (e.g. performance analysis) and subjective (e.g. thematic analysis) assessments. In other words, bibliometric analysis helps decipher and map cumulative scientific knowledge and evolutionary details of well-established fields by rigorously making sense of large volumes of unstructured data (Donthu et al., 2021c).

The study aims to examine the studies written about "ageism" in the Web of Science database with bibliometric analysis techniques and different variables. The sub-questions created for this purpose are as follows:

- 1) What is the distribution of Ageism research according to publication categories?
- 2) What is the distribution of citations in Ageism research by country?
- 3) What are the institutions where Ageism research is conducted?
- 4) Who is the researcher with the most publications in Ageism research?
- 5) How the keyword map of Ageism research is distributed.

This study has some limitations. These limitations are

1) The concept of age discrimination, which is outside the concept of ageism and has almost the same meaning as the concept of ageism, was excluded, and only studies containing the concept of "ageism" were included in the analysis.

2) The study was limited only to the Web of Science database. The analysis did not include studies from other databases, such as Scopus, Google Scholar, and EBSCO.

The dataset used in this study was searched from the Clarivate Analytics Web of Science (WOS) database on 17.07.2023 using the keyword "ageism" and selecting "all fields". As a result of the search, a total of 3,483 publications were listed. The oldest listed publications belong to 1980, and the newest to 2023. In addition, there are 2,665 articles, 171 review articles, 198 editorial studies, 210 papers and seven books from 155 different disciplines/fields. The 3,483 publications were analysed by downloading the author, institution, country and keywords with text extension. The analysis results are presented separately by visualising the distribution of authors, institutions, and countries regarding the number of citations and publications and the keyword map.

The research used descriptive analysis. Some of the data obtained were tabulated as percentages and frequencies. In addition, density and network maps were created using VOSviewer (version 1.6.19), software developed for bibliometric purposes.

4. FINDINGS

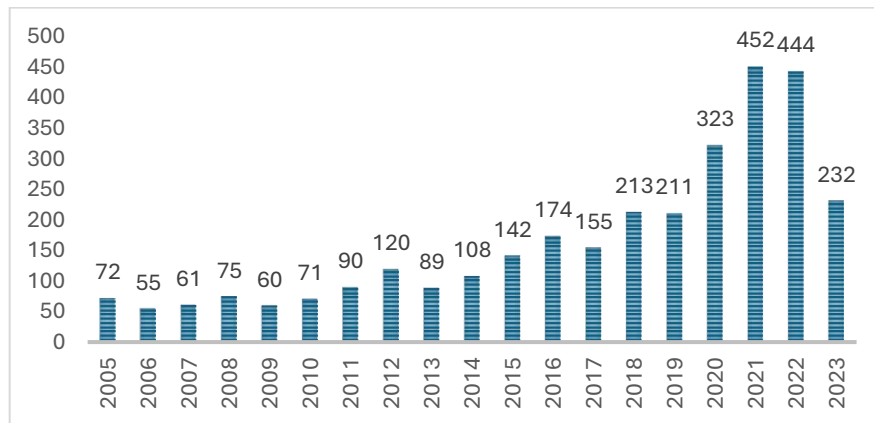
This section will analyse the research findings using tables and network maps. The data set consisting of the studies included in the research will be used to analyse the country, institution, and author distribution of citations, keyword analysis, and category distribution of publications, according to Wos.

Table 1. Number of Publications According to Research Categories

Web of Science Categories	n
Gerontology	1,353
Geriatrics Gerontology	612
Education Educational Research	226
Psychology Multidisciplinary	193
Public Environmental Occupational Health	191
Nursing	172
Psychiatry	166
Social Work	155
Sociology	121
Medicine General Internal	114
Psychology	112
Psychology Social	110
Social Issues	95
Social Sciences Interdisciplinary	87
Women Studies	86
Management	85
Psychology Clinical	79
Social Sciences Biomedical	79
Communication	72
Psychology Developmental	66

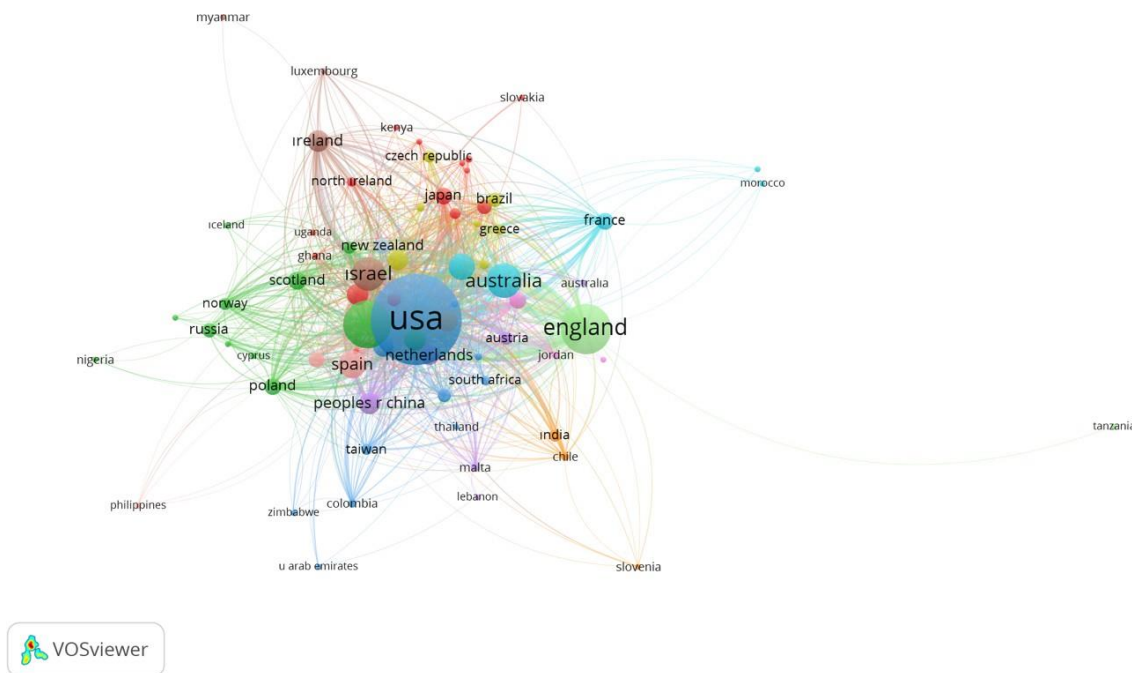
According to Table 1, most studies listed in the Web of Science database resulting from the search for the keyword "ageism" fall within the gerontology category. This is followed by geriatric gerontology, educational research, and multidisciplinary psychology. The diversity of the categories in Table 1 illustrates that ageism is a multidimensional issue affecting various disciplines. Conversely, the distribution of publications on "ageism" by year is presented in Figure 1.

Figure 1. Number of Publications by Years



According to Figure 1, there has been an increase in the number of publications from 2005 to 2022. It should be noted that the year 2023 has not yet concluded at the time of this study. Figure 1 indicates that the year with the highest number of publications is 2021, while the year with the lowest number is 1987. Notably, there was a significant rise in the number of publications in 2020 and 2021. Although the reasons for this increase are a separate subject of examination, it is believed that the COVID-19 outbreak that occurred.

Figure 2. Country Distribution of Citations Related to the Concept of Ageism



According to Figure 2, the distribution of references to the concept of ageism varies between countries. There are strong connections among the USA, Colombia, Taiwan, Zimbabwe, South Africa, and the United Arab Emirates in blue; England, Cyprus, Poland, Scotland, Norway, Russia, and Canada in green; France, Australia, and Morocco in turquoise; Israel, Ireland, and Luxembourg in brown; Japan, Slovakia, Kenya, and Northern Ireland in red; Malta, China, Jordan, and Austria in purple; and India, Chile, and Slovenia in light brown.

Table 2. Number of Publications, Citations and Total Connection Strengths of the Countries Cited on the Concept of Ageism

Country	Documents	Citations	Total Link Strength
USA	1076	17141	3296
Canada	300	6635	1562
England	345	6967	1437
Israel	135	1964	1191
Germany	92	1818	867
Australia	172	2498	733
China	61	1839	393
Spain	103	773	362
Portugal	52	598	346
Belgium	52	1034	337

According to Table 2, among the studies included in the study on the concept of ageism, the country where the most articles were published is the USA. The UK, Canada, Australia, Israel and Spain follow the USA. The USA also ranks first in terms of citations. According to the number of citations, the USA is followed by the UK, Canada, Australia, Ireland and Israel.

Figure 3. Author Citation Analysis Regarding the Concept of Ageism

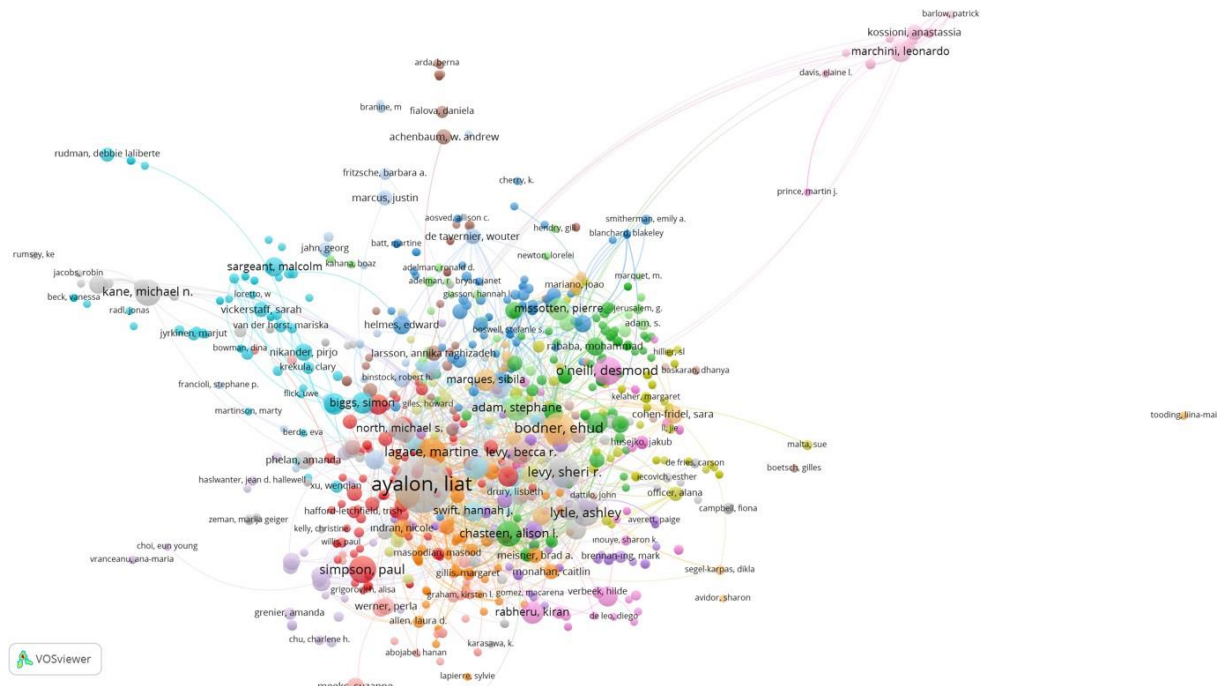


Figure 3 shows the author-citation relationship of 144 researchers who have at least 5 publications among the publications included in the analysis. The size of the balloons is determined by the number of citations received by each author. The same-colour cluster represents the authors who are related in terms of citations.

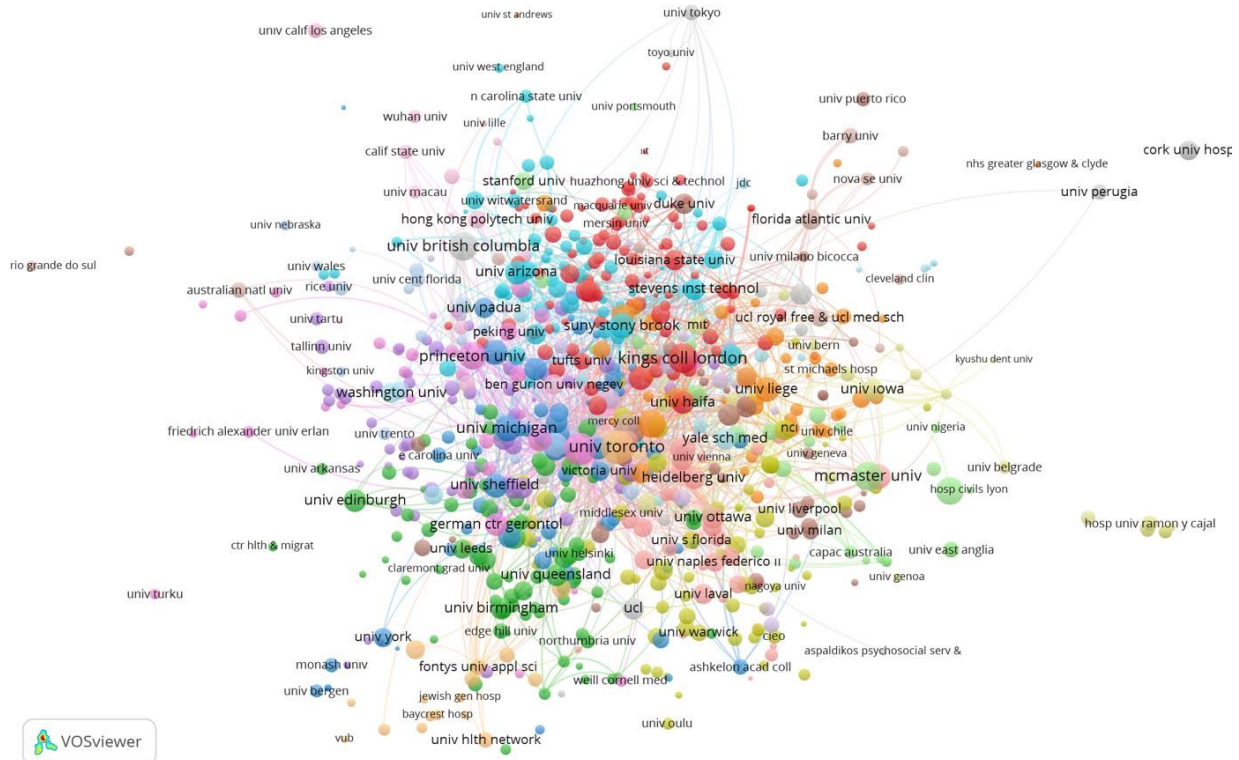
The number of publications on the concept of ageism has been steadily increasing from 2006 to 2023 (see Figure 1). This rise in publications indicates that the number of researchers contributing to the topic of ageism has also grown over the years. However, some researchers distinguish themselves with a greater volume of publications and citations compared to their peers. Accordingly, among those analysed in the ageism publications, the top 20 researchers with the highest citation power among the 144 researchers with at least five publications are presented in Table 3.

Table 3. Number of Publications, Citations and Total Links of Cited Researchers Regarding the Concept of Ageism

Author	Documents	Citations	Total Link Strength
Ayalon, L.	67	1088	515
Levy, S.	21	156	360
Lytle, A.	17	84	300
Abrams, D.	13	311	230
North, M.	12	440	221
Fiske, S.	9	556	218
Ng, R.	14	185	210
Swift, H.	10	144	192
Macdonald, J.	10	56	184
Bodner, E.	24	240	183
Adam, S.	19	107	177
Levy, B.	13	605	172
Lagace, M.	19	140	146
Tesch-Roemer, C.	6	479	140
Chasteen, A.	15	155	136
Indran, N.	8	60	126
Kane, M.	16	150	124
Missotten, P.	15	97	121
Apriceno, M.	8	51	116
Vauclair, C.	6	184	111

According to Table 3, Liat Ayalon stands out as the leading researcher in this field, boasting 67 publications and 1,088 citations. In terms of the number of publications, Ayalon is followed by Bodner, E., Levy, S., Lagace, M., Adam, S., Lytle, A., Kane, M., Chasteen, A., and Missotten, P., in that order. As for the number of citations, Ayalon is followed by Levy, B., Fiske, S., Tesch-Roemer, C., and North, M., respectively. It is also noteworthy that although Fiske, S.'s number of publications is relatively low compared to other authors, the number of citations is high.

Figure 4. Institutional Citation Distribution in Scientific Studies on the Concept of Ageism



According to Figure 4, the University of Toronto is the most cited institution in scientific studies on ageism, with 2054 citations. This is followed by King's College London, Bar-Ilan University, McMaster University, the University of British Columbia, and the University of Michigan. The citation relationship between institutions varies.

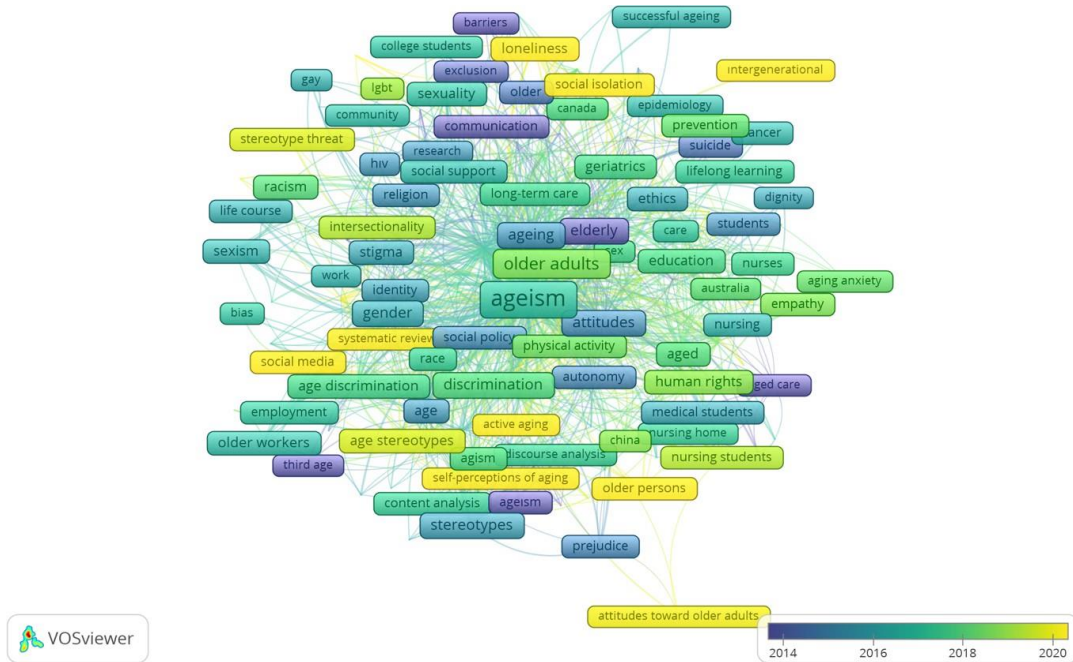
Frequently used keywords in studies on the concept of ageism are presented in Table 4. According to Table 4, the most prevalent keywords are ageism (186), ageing (171), Covid-19 (86), elderly (84), attitudes (77), older people (77), and discrimination (63). Although it is a relatively new phenomenon, it is notable that the keyword Covid-19 was frequently mentioned in ageism studies conducted between 1980 and 2023. When assessed in terms of total link strength, the concepts of stigma, gender, and stereotype, though low in frequency, emerge prominently due to their relatively high total link strength, as shown in Table 4.

Table 4. Keywords in the Studies on the Concept of Ageism

Keyword	Frequency	Total Connection Power
Ageism	988	1594
Older Adults	186	374
Aging	171	375
Ageing	95	207
Covid-19	86	228
Elderly	84	150
Attitudes	77	187
Older People	77	170
Discrimination	63	143
Stereotypes	61	135
Gender	58	105
Age Discrimination	50	94
Aged	42	84
Dementia	40	73
Geriatrics	39	83
Stigma	39	101
Age Stereotypes	38	68
Age	37	78
Older Workers	37	56

According to Figure 5, it is clear that the current study topics range from blue to yellow. Accordingly, it can be stated that concepts such as ageism, communication, exclusion, barriers, the elderly, elderly care, and the third age have been frequently discussed in previous years. The concepts highlighted in yellow that are associated with ageism and are relatively new include social media, loneliness, social isolation, intergenerational relationships, active ageing, attitudes towards older adults, systematic review, and self-perception of ageing.

Figure 5. Keyword Distribution of Studies on the Concept of Ageism



5. CONCLUSION

Since discriminatory behaviour occurs in every environment with social interaction, such as the workplace, family, market, and social media, the issue of ageism has garnered the attention of numerous disciplines. Age discrimination is an interdisciplinary phenomenon that is the subject of disciplines such as management, communication, social work, psychology, sociology and education. With the COVID-19 pandemic, which has affected a significant portion of the world, the issues surrounding the elderly and ageism have begun to receive more attention in the literature. Particularly, the problems of social isolation and loneliness among the elderly have become the focus of recent studies published on the concept of ageism. Although ageism refers to the discrimination faced by individuals due to their age, the discrimination experienced by older adults as opposed to younger ones has been the subject of the literature.

Examining the countries with the highest number of citations and publications on the concept of ageism, it is evident that the United States of America is in the lead. However, upon reviewing the distribution of countries, it is noteworthy that nations such as China, Australia, Germany, England, and Israel, which are not located within a single continent or region, achieve high scores in both citations and publications. It can be asserted that the global ageing problem and ageism are universal issues.

According to the study's keyword collaboration results, the concepts of the third age, communication, and exclusion are less prominent in the literature than they once were. After 2018, the concept of successful ageing was supplanted by that of active ageing. The keyword analysis provides

evidence that age discrimination or ageism is also examined in relation to gender. Consequently, concepts such as sexism and gender appeared among the keywords associated with ageism.

In this study, a topic regarded as a global issue was analysed using VOSviewer, and its status in the literature was examined through various factors. Information on the most cited publishing institutions, countries, and researchers on the concept of Ageism is provided with the aid of tables and figures. Leading researchers, institutions, countries, and keyword patterns regarding Ageism are guiding future studies. The Web of Science database and VOSviewer software were employed in the study. In future studies, the Scopus database, along with Citespace, Biblioshiny, or R programmes, can be utilised to introduce different perspectives to the literature.

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Veri Toplama ve İşleme / <i>Data Collecting and Processing</i>	Verileri toplamak, düzenlenmek ve raporlamak / <i>Collecting, organizing and reporting data</i>	Res. Asst. Enes ATAY (Ph.D.) Asst. Prof. Abdullah Selim DOĞAN (Ph.D.)
Tartışma ve Yorum / <i>Discussion and Interpretation</i>	Bulguların değerlendirilmesinde ve sonuçlandırılmasında sorumluluk almak / <i>Taking responsibility in evaluating and finalizing the findings</i>	Res. Asst. Enes ATAY (Ph.D.) Asst. Prof. Abdullah Selim DOĞAN (Ph.D.)
Literatür Taraması / <i>Literature Review</i>	Çalışma için gerekli literatürü taramak / <i>Review the literature required for the study</i>	Res. Asst. Enes ATAY (Ph.D.) Asst. Prof. Abdullah Selim DOĞAN (Ph.D.)

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