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Original Article

A Bibliometric Analysis on Fat Tax

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ABSTRACT

Objective: The main purpose of this study is to investigate the literature in the field of "fat tax" amongst the period for 1999-2021 through the VOSviewer program.

Methods: The necessary data are acquired from the Web of Science database. Four hundred seventeen publications of different types on the concept of "fat tax" in the fields of health and economics found in the Social Sciences Citation Index, Science Citation Index-Expanded, and Emerging Sources Citation Index citation indexes on the Web of Science database. The selected publications have been bibliometrically investigated by VOSviewer. The keywords, authors, and countries that made the most intensive contribution to the research area in the field were visualized and illustrated on tables and maps.

Results: The outcome of the study demonstrates that although the first study on the fat tax was published in 1999, and the number of publications and citations followed a fluctuating course in the following years. In terms of the number of publications and citations, which tended to increase in the years after 2018, 2021 was the year in which the subject received the most attention with 223 publications and 880 citations.

Conclusion: In this study, "fat tax" studies in the field of health economics were investigated utilizing bibliometric analysis technique. In the literature review, it can be stated that there is hardly any bibliometric analysis study based on VOSviewer on this topic. The most frequently used keywords were determined and shown in the study as "obesity," "fat tax," "tax," "health," "food," and "nutrition and public health."

Keywords: Fat Tax, macro economics, obesity, VOSviewer, web of science

Introduction

Obesity has become a threat to public health in many countries. Obesity, the incidence of which is rapidly increasing, especially in the young population, brings along a great financial burden for countries in terms of public health expenditures. This situation leads many countries to take measures regarding obesity.

More recently attention has focused on the "fat tax," as being one of the obesity measures. The examination of the recent academic development of the fat tax, which is a financial instrument taken from fatty foods with a fattening feature, has also started to be of great importance.

In this regard, this study aims to contribute to the growing research field on this subject by investigating the concepts of obesity and "fat tax" with the bibliometric analysis method. Therefore, academic studies gathered from the Web of Science database on fat tax were tried to be evaluated within the framework of bibliometric analysis, which has been used extensively in recent years. To the best of the authors' knowledge, this study is one of the few ever bibliometric studies to report related research in the fat tax field. Thus, the major goal of the present research is to fill this gap in the literature by bibliometric analysis to maintain an overview of literature in this field. Within the scope of this study, first, basic information about obesity and fat tax will be given. Then, the method used for this study will be explained. The research will be completed with the results and conclusion.

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Obesity

Obesity, which is defined as "excessive fat accumulation in the body," has become a one of the very important health problem nowadays. Various measurement units such as "skinfold thickness, weight for height, waist circumference, body mass index" are used to measure obesity.[1]

Furthermore, according to WHO "obesity is a complex multifactorial noncommunicable disease defined by excessive fatness that can impair health. Obesity is also one of the key risk factors for many diseases such as coronary heart disease, hypertension and stroke, certain types of cancer, type 2 diabetes, dyslipidemia, osteoarthritis and gout, and pulmonary diseases, including sleep apnoea."[2]

Overweight people need health care more often and for more complex problems.[3] Obesity comes at a cost not only to those who are obese, but also to the rest of society. These costs include obesity and the resulting diseases.[4]

According to the study of FAO et al[5] obesity has increased worldwide, causing 4 million deaths. In particular, among 2000 and 2016, the prevalence of obesity increased even faster than for those who were overweight. While the prevalence of overweight is increasing across the entire age range, a sharp increase is observed in adults and school-aged children.

In their study, Jørgensen et al,[6] declared that "unhealthy diet is an important modifiable risk factor for diseases as obesity, type 2 diabetes and cardiovascular diseases, and changes to a healthier diet has the potential to reduce the burden of diseases in society. In this respect, various attempts have been made to change the nutritional habits of the population, from campaigns to general health control".

Definition of "Fat Tax"

Obesity rates, which have increased rapidly in recent years, have led many countries to seek various solutions.[1] The increase in the obesity rate in the society significantly affects private and public health expenditures. For this reason, governments use taxes and subsidies at the beginning of fiscal measures. Thus, with such financial measures, households can shift their consumption patterns from unhealthy foods that trigger obesity to healthy foods.[7]

From this point of view, "it can be said that taxes applied to foods with high fat, sugar and/or salt content are not new." Creighton states that fat taxes have existed since the 1920s.[8] Fat tax practices, which aim to reduce the consumption of high-calorie foods and beverages by increasing their prices, have become very popular today."[1]

Economists may consider using economic tools such as the "fat tax" to influence people's decision-making to bring goals closer to the socially desirable outcome.[4] Although widely used in the literature, there is no consensus on the definition of a "fat tax." According to Southworth "some proposals seek to tax by categories of food regarded as unhealthy-fast food, baked goods, candy and snack food. Other proposals would tax individual foods determined to be unhealthy on the basis of their fat or caloric content."[9]

Pettinger defined the fat tax as follows "a fat tax is a specific tax placed on foods which are considered to be unhealthy and contribute towards obesity.[10] "Tax increases on goods with a high sugar or fat content have been labeled fat-taxes."[11] The tax could be placed on foods high in sugar/fat, such as crisps, chocolate and deep-fried takeaways. In other words, the fat tax application is an additional fee applied for the purpose of restricting the consumption of fattening foods and sugary drinks.[8]

The mechanism lying behind the fat tax is not complex. In this context, the consumer is not restricted or prohibited eating or having kinds of foods high in sugar and/or salt. Instead the consumer is trying to be encouraged to consume foods which are low in fat, sugar, and salt. If the consumer wants to continue consuming foods high in fat, sugar, or salt in food consumption, she has to bear the cost of his/her obesity. In this case, the unhealthier food the consumer prefers, the more fat tax he/she has to pay.[12]

Putting its mechanism in general terms, the motivating factor in the fat tax is thought to be the rise in the price of an unhealthy food with the taxation of that food, and the increase in the food price directing the consumers to consume these products less. The revenues from taxation, which are considered to be a positive privilege in terms of the public, may provide benefits in financing public expenditures or reducing other taxes.[13] Pettinger[10] summarizes the advantages and disadvantages of fat tax in the following (Table 1).

Taxation policy may affect the diet composition. Rises (diminishes) in taxes on certain food products should lead to a decline (increment) in their consumption. On the other hand, an income-neutral tax reform that includes lower taxes on fruits and vegetables and higher taxes on fatty and sugary foods should affect obesity.[11]

Several countries such as Chile, France, Ireland, Mexico, and the United Kingdom tax unhealthy foods to target the obesity. Hungary taxes food products with health risks while only sweets and non-alcoholic beverages are taxed by Finland. On the other hand, these policies may be insufficient to reduce obesity.[14] As Krishnamoorthy et al[15] noted in their study, taxes can only reduce demand for unhealthy foods by increasing their prices rather than reducing obesity.

The implementation of a fat tax in Denmark had a series of negative economic effects that led to its repeal a year later. Producers, distributors and consumers alike suffered from the effects in terms of employment, competitiveness, and well-being.[16]

Methods

The term bibliometrics originates from the words biblio and metrics. In Greek, the word "Biblio" comes from the word biblion, which means book. Metrics, on the other hand, is derived from the Greek words metricus or metricos and means the science of measurement.[17] Bibliometrics was introduced by Pritchard in 1969. Called "statistical bibliography" before 1969, this method has a relatively recent origin as a term. Despite this, it has been determined that the usage and

Table 1. Advantages and Disadvantages of Fat Tax

Advantages	Disadvantages
• Maintains incentive reduce consumption of sugar/unhealthy food. • Raises revenue for the government • Can lead to lower taxes • Facilitates higher spending on health care • Encourages firms to make healthier snacks and food • Makes food price to social cost.	• Regressive tax-takes higher percentage from low-income groups • Costs of administration-possibility of evasion • Which foods should be taxed—fat/energy drinks? • Obesity caused by more factors than just food.

Source: Pettinger T. Pros and cons of fat tax. 2019. Available at: https://www.economicshelp.org/blog/5056/economics/pros-and-cons-of-fat-tax/

application area dates back to the 1890s. The bibliometric method helps to investigate and analyze scientific publications such as books, articles, etc. by utilizing statistical methods. As indicated by Corsini et al.[18] the scientific literature can be overviewed with the help of the bibliometric methodology. Critical and subjective summary of the scientific studies can be maintained by the reviews. Additionally, the research and evaluation with data gain more attention than sound subjective judgments recently. Also, in bibliometric studies, the publications are subjected to very different analyzes.[19]

Within the scope of the study, it is aimed to provide bibliometric information about the network structures of the articles and review articles published on the "fat tax." The keyword of the study was "fat tax" and was scanned as a subject content (topic) in the Web of Science (WoS) database on January 19, 2022. Four hundred seventeen publications of different types on the concept of fat tax in the fields of health and economics found in the Social Sciences Citation sciences interdisciplinary have been selected. Subsequently, 247 publications have been bibliometrically examined, and the studies that are out of the scope of the subject have been eliminated.

The VOSviewer program, developed by Eck and Waltman,[20,21] a popular visualization tool that utilizes the VOS (visualization of similarities) for cluster analysis,[22] is employed for the purpose of evaluating the selected bibliographic data, comprising 201 publications during the period ranging from 1999 to date. With the help of the VOSviewer, the gathered data in this study are processed and the authors, institutions, and countries that made the most intensive contribution to the research area and the most cited publications in the field were visualized and illustrated with tables and maps.

Results

In this study, to quantify bibliometrically on the WoS database, the scientific publications on fat tax in the shape of articles and review articles, a total of 201 publications, were investigated by utilizing the VOSviewer program during the term ranging from 1999 to date.

The limitation of the study is that only scientific publications from the WoS database are taken into analysis, the other databases/indexes are disregarded in other to avoid duplication of the same publications. Also, among the 417 academic publications, 216 publications are excluded as they are not within the scope of this study.

In Figure 1, the distribution of filtered publications and their citations, in the fields of health and economy created according to the SSCI, SCI-Expanded, and ESCI criteria, between 1999 and 2022 is shown. It can be drawn from that although the subject has become more interesting as of 2005, a fluctuating course has been observed. In 2018, 13 publications on the subject received 545 citations. The number of publications and citations published since this date continued with an increasing trend. In 2021, 223 publications related to the subject were published and the number of citations was 880, making it the year with the highest number of publications and citations for the examined period.

Observing the fluctuating course over the years, the most cited article and citation numbers have gained our attention. Table 2 is illustrated to show the top 10 most cited studies among the bibliographic data comprising 201 publications and 5655 citations. The most cited article named "The Economics of Obesity: dietary energy density and energy cost" with 582 citations, was written by the authors, Drewnoski and Darmon, in 2005, the year the publications focused on fat tax and obesity. From the same table, it is determined that the article titled "Measuring weight outcomes for obesity intervention strategies: The Case of a sugar-sweetened beverage tax" published in 2011 by Lin et al. is the last of the top 10 citations with 112 citations.

In Figure 2, the countries, in which the publication covered in this study was published, were listed in the top 10 and shown together with the number of publications. It has been determined that 68 (33.8%) of the 201 studies subject to review belong to the USA, and as a most publishing country, USA produces the most work in the field of fat tax. It can be regarded as an expected result that there are more studies on the subject in the United States, where the obesity issue is common. With 35

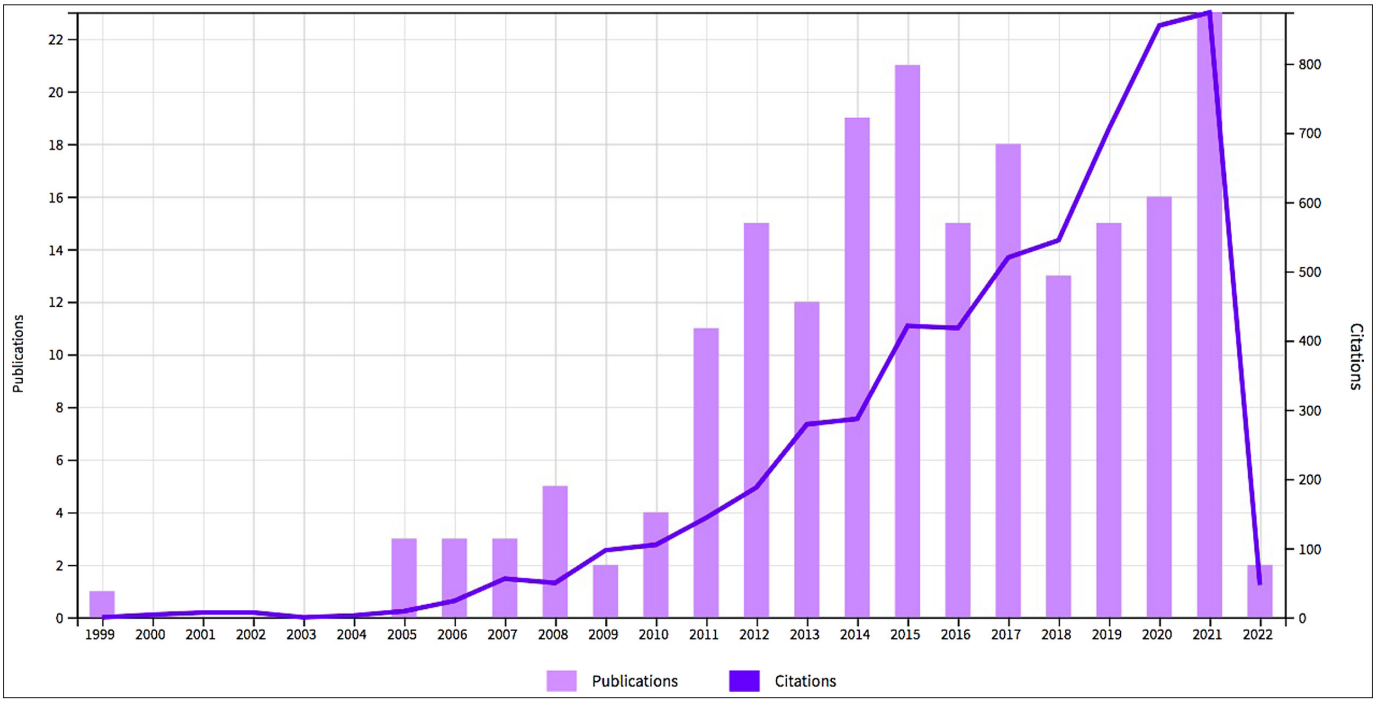

Figure 1. Times cited publications over the 1999-2022 term.

Table 2. Most Cited Publications Based Upon "Fat Tax"

Author	Publication Title	Journal	Year	Total Citations
Drewnowski and Darmon[23]	The Economics of Obesity: dietary energy density and energy cost	*American Journal of Clinical Nutrition*	2005	565
Godfray et al[24]	Meat consumption, health, and the environment	*Science*	2018	372
Capacci et al[25]	Policies to promote healthy eating in Europe: a structured review of policies and their effectiveness	*Nutrition Reviews*	2012	192
McGill et al[26]	Are interventions to promote healthy eating equally effective for all? Systematic review of socioeconomic inequalities in impact	*BMC Public Health*	2015	179
Ni Mhurchu et al[27]	Effects of price discounts and tailored nutrition education on supermarket purchases: a randomized controlled trial	*American Journal of Clinical Nutrition*	2010	165
Mytton et al[28]	Could targeted food taxes improve health	*Journal of Epidemiology and Community Health*	2007	140
Zhen et al[29]	Predicting the Effects of Sugar-Sweetened Beverage Taxes on Food and Beverage Demand in a Large Demand System	*American Journal of Agricultural Economics*	2014	139
Ezzati and Riboli[30]	Can Noncommunicable Diseases Be Prevented? Lessons from Studies of Populations and Individuals	*Science*	2012	134
Dharmasena and Capps[31]	Intended and unintended consequences of a proposed national tax on sugar-sweetened beverages to combat the U.S. obesity problem	*Health Economics*	2012	116
Lin et al[32]	Measuring weight outcomes for obesity intervention strategies: The case of a sugar-sweetened beverage tax	*Economics and Human Biology*	2011	112

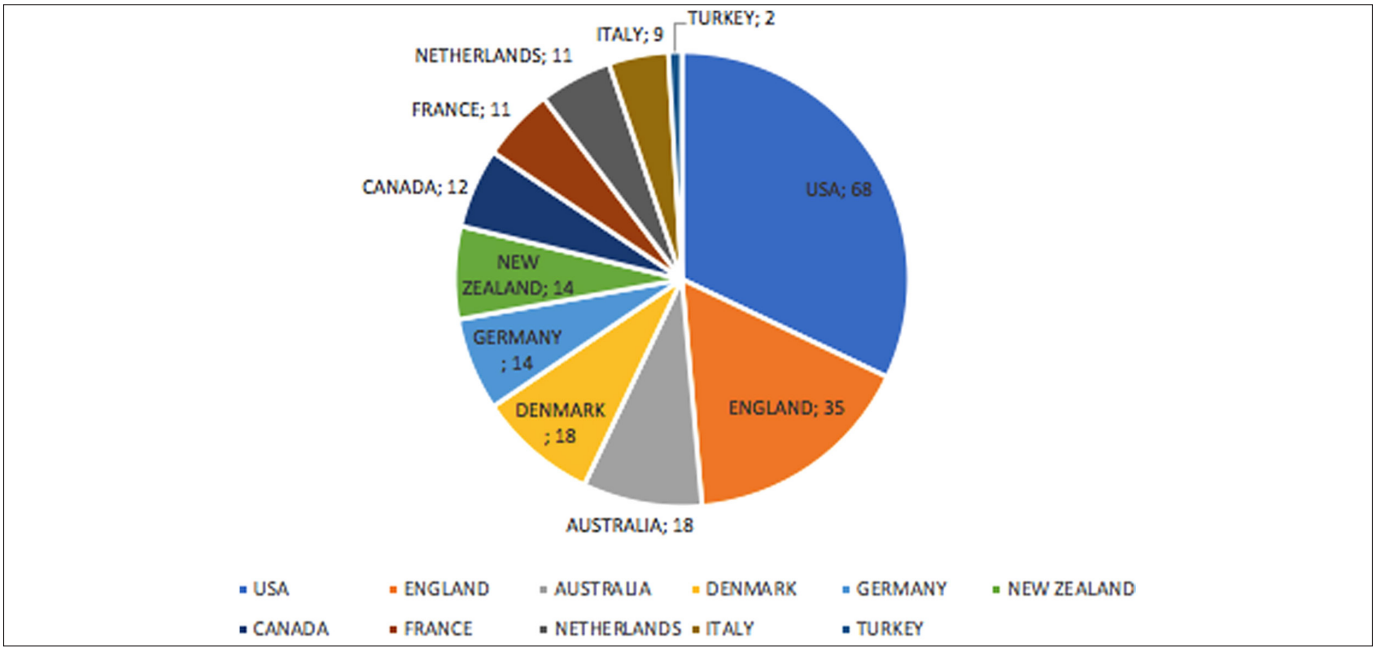

Figure 2. Top 10 countries and Turkey ranking the most publications.

publications (17.4%), England ranks second among the countries with the highest number of publications. In the comparison of the countries that produce the most works, Italy is the last of the top 10 with 9 publications (4.47%). During the review period, it is observed that the subject has been examined with 2 works in Turkey and the country's contribution to the literature studies in this field is low (0.99%).

Figure 3, as a network visualization map, helps to illustrate the keyword co-occurrence by revealing clusters within a particular color. The clusters comprise keywords and authors. What is special in this map is that each color represents its cluster and every keyword is presented with a node color. The affiliated color shows the similarity among them. The more keyword occurrences by representing a node, the larger the node and the rise in the number of network connections within the other nodes. In other words, the co-occurrence of the keyword in the publications and link strength states the size of the node.[22]

It is apparent from Figure 3 that the largest node belongs to the "obesity" keyword, which is used 60 times in total in 201 studies and is used most frequently with 60 link strength. A link represents a connection or a relation among 2 items. Every link has a strength, symbolized by a positive numerical value. In other words, the higher the numerical value, the stronger the link.[20,21] The second most frequently used word is "fat tax," which is repeated 24 times with 31 link strengths. The third one is the "taxes" keyword, repeated 13 times with 16 link strengths. The keyword "food" is in the fourth place with 11 repetitions, the keywords "food" and "food policy" are in the fifth place with 10 repetitions, the keywords "health," "nutrition," and "public health" are in the sixth place, "food taxes" are in the seventh place with 7 repetitions, and "fat taxes" are in the eighth place with 6 repetitions.

Figure 4 illustrates the network map of the authors. As seen from the figure, some authors are close to each other or linked in the same

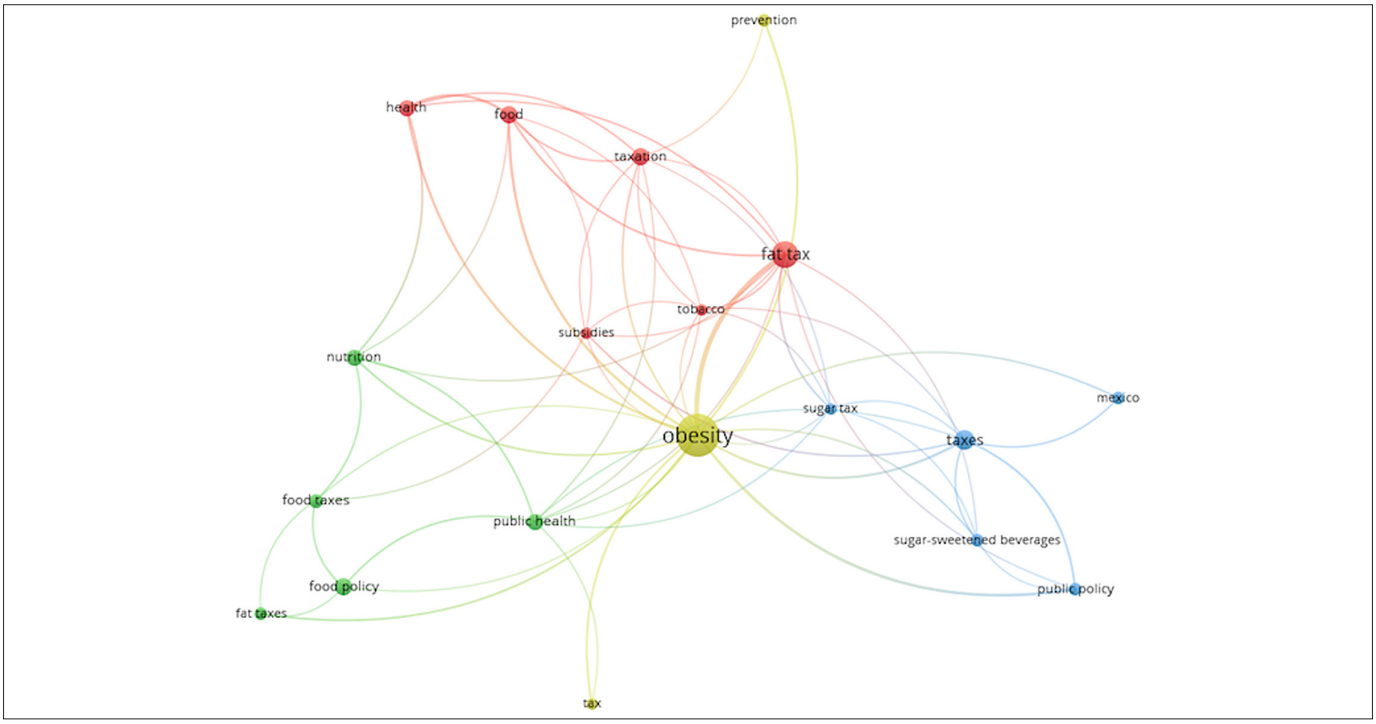

Figure 3. Co-occurrence of keywords.

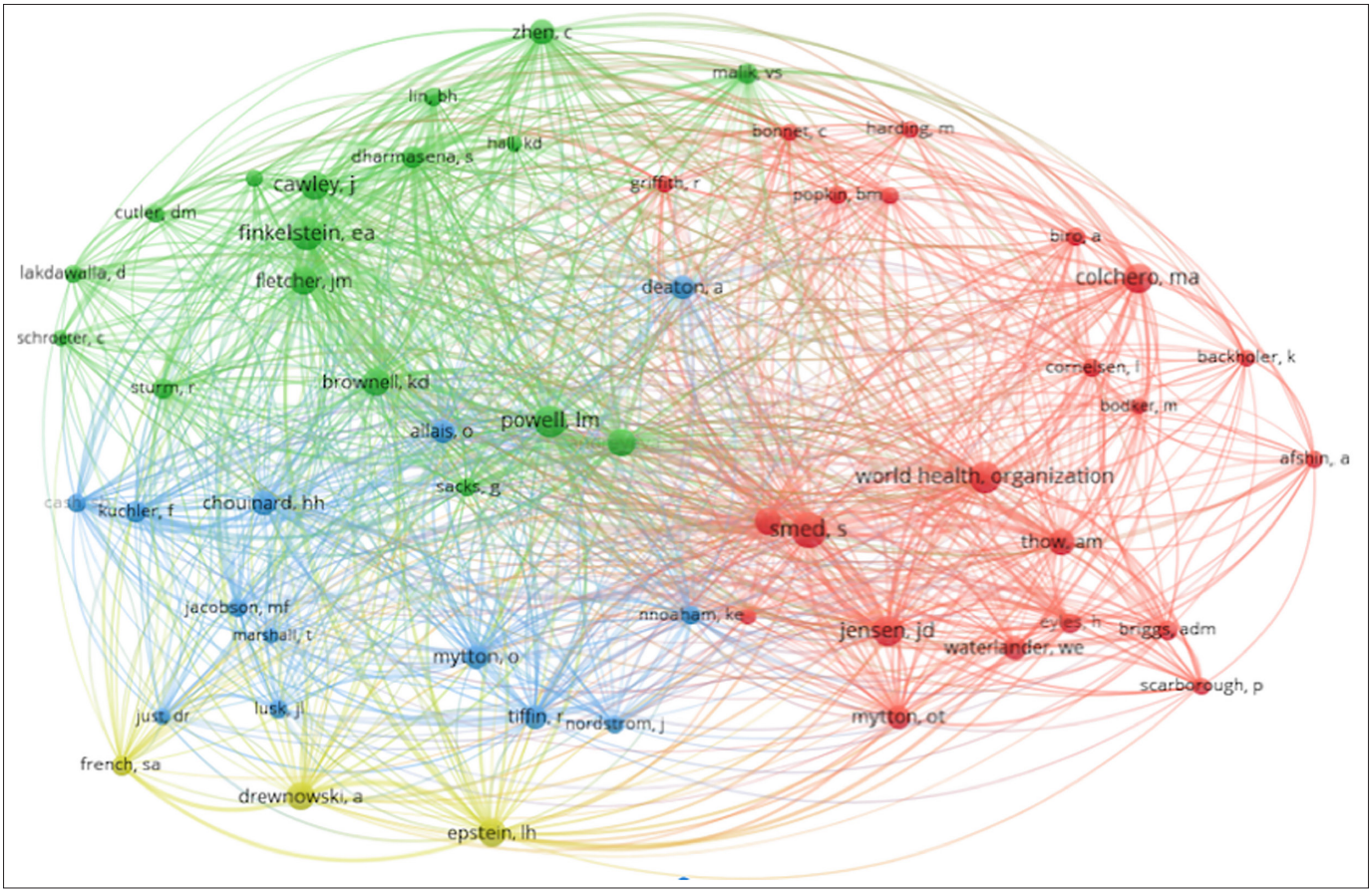

Figure 4. Co-citation cited authors.

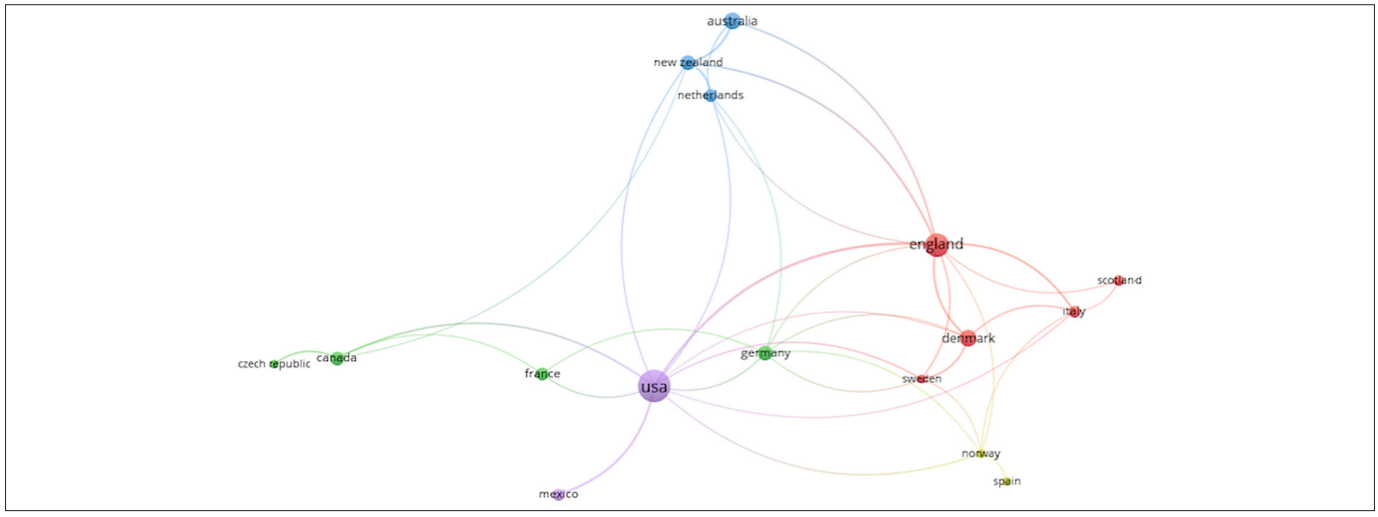

Figure 5. Most cited countries.

cluster, although other authors are more separated from each other, even being included in diverse clusters. In other words, it can be concluded that as the distance between the authors on the visualization map decreases, the relationship among them rises in the research being conducted.[22]

As illustrated in Figure 4, the network map of authors is divided into clusters representing 4 different colors. In cluster 1, represented in red, the author Smed has the largest node with a total of 1072 link connections and 87 citations. It's important to mention that, "The link attribute indicates the number of co-authorship links of a given researcher with other researches. The total link attribute indicates the total strength of the co-authorship links of a given researcher with other researchers."[20,21] Within the same cluster, World Health Organization, closest to the author Smed, ranks second with 686 total link links and 75 citations.

Finkelstein has the largest node of cluster 2, symbolized in green on the author network map, with a total of 1292 connections and 82 references. The author Chouinard, with the biggest node in cluster 3, represented by blue color, has a total of 570 link strengths and 46 citations. On the other hand, the author Drewnoski has the largest node of the fourth cluster, indicated in yellow with 580 link strength and 57 citations.

In the VOSviewer visualization tool, "co-authorship (multiple authors in 1 publication) refers to the published material conducted together by networks of researchers, research centers and institutions, or even countries."[22] In Figure 5, the co-authorship network of countries is illustrated.

Among the 201 academic publications investigated, 5 clusters and 7885 citations were determined, for the years 1999-2022, in cooperation among countries. With 68 publications and 2129 citations, the USA was represented in the fifth cluster as the country with the most cited and the largest node among countries. The second most cited country is England, with 35 publications and 1975 citations, which is represented in the first cluster by the red color. New Zealand, represented in cluster 3 by blue color, with its 14 publications and 396 citations, is the third most cited country for the research term.

In this study, 417 different types of publications related to the concept of fat tax in the fields of health and economics in the SSCI, SCI-Expanded and, ESCI citation indexes on the Web of Science database within "fat tax" topic were analyzed bibliometrically. For the document types only articles and review articles have been selected. Then the remaining publications have been bibliometrically investigated and the studies that are out of the scope of the subject have been excluded. It is observed that the first study in this field was published in 1999 and has displayed a fluctuating trend over the years since 2005, but there has been an upward momentum in the number of publications as of 2018. In recent years, an increment in the number of publications has been detected in studies related to the field of health, with the increasing importance of obesity and the efforts to take precautions.

There was no publication in the related field from the year of the first study on the subject until 2005. Three Articles have been published in 2005 and the article titled "The Economy of Obesity: Diet Density and Energy Cost," maintains its place as the most cited article as of today. America, England, and New Zealand are among the top 3 countries with the highest number of publications in this field. The Web of Science categories that fit the scope of the study were included in the study. Among these, the categories with the most publications were determined as "Economy," "Nutrition Dietetics," and "Public Environment Occupational Health," respectively. In addition to, the outcome of the study demonstrates that the literature makes mention of obesity, fat tax, taxation, health, food, nutrition and public health.

In conclusion, this study will contribute to the international literature by providing a holistic perspective to the studies on "fat tax" in the field of health economics. At last, for further studies, it is recommended to evaluate the publications in the Scopus database in the field of "fat tax" and "obesity," apart from Web of Science database, by utilizing different bibliometric review techniques for different time intervals. This study also concludes with recommendations for further multidisciplinary research at the intersection of the fields of fat tax, obesity, macro economy, fiscal policy.

Ethics Committee Approval: This research deos not include data collection or intervention from clinical studies. Therefore, ethics committee approval was not obtained.

Informed Consent: No obtained as the study includes no clinical studies/surveys.

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References

1. Ayas IN, Saruç T, Obezite Vergisi Ülke Uygulamaları. *AKÜ İktisadi ve İdari Bilimler Fakültesi Dergisi*. 2017;19(2):69-82.
2. World Health Organization. Who Dıscussıon paper, draft recommendations for the prevention and management of obesity Over the life course, including potential targets. 2021. Available at: https://cdn.who.int/media/docs/default-source/obesity/who-discussion-paper-on-obesity---inal190821.pdf?sfvrsn=4cd6710a_24&download=true
3. Organization for Economic Co-Operation and Development. 2019. Available at: https://www.oecd.org/health/health-systems/Heavy- burden-of-obesity-Policy-Brief-2019.pdf
4. Leicester A, Windmeijer F, Leicester A, et al. *The 'Fat Tax': Economic Incentives to Reduce Obesity*. IFS briefing Notes (BN49); 2004. Available at: https://ifs.org.uk/publications/1797#:~:text=Revenue%20from%20a%20'fat%20tax,part%20of%20general%20government%20receipts. [CrossRef]
5. FAO, UNICEF, WHO. *The state of food security and nutrition in the world 2019. safeguarding against economic slowdowns and downturns*. Rome: FAO; 2019.
6. Jørgensen T, Pisinger C, Toft U. Tax on saturated fat-does it work? *Eur J Clin Nutr*. 2016;70(8):867-868. [CrossRef]
7. Akar S, ile Mücadelede O. Vergilendirme Türkiye'de mümkün mü? *J Life Econ*. 2015;22:693-705. [CrossRef]
8. Creighton R. Fat taxes: the newest manifestation of the age-old excise tax. *J Leg Med*. 2010;31(1):123-136. [CrossRef]
9. Southworth LM. The skinny on a fat tax: obesity and microeconomics. *Policy Perspect*;11(1). [CrossRef]
10. Pettinger T. Pros and cons of fat tax. 2019. Available at: https://www.economicshelp.org/blog/5056/economics/pros-and-cons-of-fat-tax/
11. Madden D. The poverty effects of a "Fat-Tax" in Ireland [UCD Centre for Economic Research working paper series]. *Health Econ*. 2015;24(1):104-121. [CrossRef]
12. Szucs RS. The "Invisible Hand" in Case of Foods With High Level of Fat, Sugar and/or Salt Importance of Fat Tax. *Eur Sci J*. 2014;24:49-67.
13. Jensen JD, Smed S, Aarup L, Nielsen E. Effects of the Danish Saturated Fat tax on the Demand for Meat and Dairy Products. *Public Health Nutr*. 2016;19(17):3085-3094. [CrossRef]
14. Kalamov ZA. A Sales tax is better at promoting healthy diets than the fat tax and the thin subsidy. *Health Econ*. 2020;29(3):353-366. [CrossRef]
15. Krishnamoorthy Y, Ganesh K, Sakthivel M . Fat taxation in India: A critical appraisal of need, public health impact, and challenges in nationwide implementation. *Health Promot Perspect*. 2020;10(1):8-12. [CrossRef]
16. Petkantchin V. *Nutrition Taxes: the Costs of Denmark's Fat Tax, IEM's Economic Note*; 2013. Available at: https://www.institutmolinari.org/wp-content/uploads/2013/05/note0513_en.pdf [CrossRef]
17. Korkmaz TN. Bibliyometri. II. International Conference on Empirical Economics and Social Sciences (iceess' 19); 2020:582-589. Available at: http://www.icoaef.com/wp-content/uploads/2018/08/Full-Paper-29A.pdf [CrossRef]
18. Corsini F, Certomà C, Dyer M, Frey M. Participatory energy: research, imaginaries and practices on people' contribute to energy systems in the smart city. *Technol Forecasting Soc Change*. 2019;142:322-332. [CrossRef]
19. Güley A, Özgür KM, et al. Sağlık Hizmetlerinde Kalite Kavramının Bibliyometrik Analizi: Çalışmalar ve Eğilimler. *J Innov Healthc Pract*. 2021;2(1):1-22.
20. Eck NJP, Waltman L. *VOSviewer: A Computer Program for Bibliometric Mapping. ERIM Report Series Research in Management*. 2021. Available at: https://repub.eur.nl/pub/14841/ERS-2009-005-LIS.pdf [CrossRef]
21. Eck NJP, Waltman L. VOSviewer manual, available. 2021. Available at: https://www.vosviewer.com/documentation/ Manual_VOSviewer_1.6.17.pdf
22. Mcallister JT, Lennertz L, Atencio Mojica Z. Mapping a discipline: A guide to using VOSviewer for bibliometric and visual analysis. *Sci Technol Libr*. 2021:1-30. [CrossRef]
23. Drewnowski A, Darmon N. The economics of obesity: dietary energy density and energy cost–. *Am J Clin Nutr*. 2005;82(1):265S-273S. [CrossRef]
24. Godfray H. C. J., Aveyard P, Garnett T, et al. Meat consumption, health, and the environment. *Science*. 2018;361(6399):5324. [CrossRef]
25. Capacci S, Mazzocchi M, Shankar B, et al. Policies to promote healthy eating in Europe: a structured review of policies and their effectiveness. *Nutr Rev*. 2012;70(3):188-200. [CrossRef]
26. McGill R, Anwar E, Orton L, et al. Are interventions to promote healthy eating equally effective for all? Systematic review of socioeconomic inequalities in impact. *BMC Public Health*. 2015;15(1):1-15. [CrossRef]
27. Ni M. C, Blakely T, Jiang Y, Eyles H C, Rodgers A. Effects of price discounts and tailored nutrition education on supermarket purchases: a randomized controlled trial. *Am J Clin Nutr*. 2010;91(3):736-747. [CrossRef]
28. Mytton O, Gray A, Rayner M & Rutter H. Could targeted food taxes improve health?. *J Epidemiol Community Health*. 2007;61(8):689-694. [CrossRef]
29. Zhen C, Finkelstein EA, Nonnemaker J M, Karns S A& Todd J E. Predicting the effects of sugar-sweetened beverage taxes on food and beverage demand in a large demand system. *Am J Agric Econ*. 2014;96(1):1-25. [CrossRef]
30. Ezzati M, Riboli E. Can noncommunicable diseases be prevented? Lessons from studies of populations and individuals. *Science*. 2012;337(6101):1482-14. [CrossRef]
31. Dharmasena S, Capps Jr O. Intended and unintended consequences of a proposed national tax on sugar-sweetened beverages to combat the US obesity problem. *Health Econ*. 2012;21(6):669-694.
32. Lin B H, Smith T A, Lee J Y, Hall K D. Measuring weight outcomes for obesity intervention strategies: the case of a sugar-sweetened beverage tax. *Econ Hum Biol*. 2011;9(4):329-341. [CrossRef]