

Society's Readiness for Modern Challenges of the Insurance Market: Bibliometric Analysis

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Iryna Didenko, ORCID: <https://orcid.org/0000-0003-1583-2451>

PhD in economics, Sumy State University, Ukraine

Natalia Sidelnyk, ORCID: <https://orcid.org/0000-0002-9628-3011>

Director of the Sumy Representative Office of the Insurance Company "VUSO", Ukraine

Abstract

This paper summarizes the arguments and counterarguments within the scientific discussion on the insurance market issue. The research's primary purpose is to identify critical vectors and trends inherent in the modern insurance market. Systematization of literary sources and approaches for solving the problem of development and formation of the current insurance market indicates that it is necessary to use the best countries' experience, adapting it to the domestic market. This concerns the issues of targeted financing of investment projects, the creation of funds to support policyholders' protection, tax benefits for long-term insurance instruments, the possibility of opening a foreign insurance market for insurance institutions. The relevance of the decision of this scientific problem caused by the lack of standard definition of the concept of insurance by the academic community drives limited ability to assess the impact of insurance on social and economic aspects of society. Investigation of the topic of theoretical principles of insurance in the paper is carried out in the following logical sequence: analysis of the relationship between different types of insurance, analysis of publication activity in terms of years, countries, subject industries; research of keywords that occur when considering the topic of insurance. The research methods' methodological tools were analytical tools of the Scopus database and VOSviewer software years of research 1832 - 2021. According to the international Scopus database results, the object of study is the chosen countries, regions, and universities. The paper presents empirical bibliographic analysis results, which showed that today the vast majority of research is conducted by experts from the United States and the European Union. Still, many Asian countries (China, Singapore, Taiwan, Thailand), which demonstrate rapid economic development, are beginning to take a leading position among insurance research gradually. The research empirically confirms and theoretically proves that the insurance market is an integral and important part of the financial sector as a whole. The results of the research can be useful for further scientific work.

Keywords: insurance, insurance market, finance, financial market, financial flow.

JEL Classification: G22, G23, G52.

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Introduction

As part of the financial sector, the insurance market is one of the world's most developed capital markets. Given the socio-economic significance of insurance as a phenomenon in the world, there are many approaches to its definition and positioning in the regulatory field. Insurance and financial relationships are very close because similar features characterize them. Thus, financial and insurance relations are distributive and monetary, which contributes to the creation of cash funds. However, on the other hand, there are significant differences between these relationships. Financial relations involve a one-way movement of value in contrast to insurance relations. Also, insurance relationships are probabilistic at a time when financial relationships are

more clearly defined. The absurdity of the definition of the concept of insurance generally accepted by the academic community causes limited ability to assess the impact of insurance on society's social and economic aspects. Thus, this determines the relevance of this article, and the primary purpose is to identify key vectors and trends inherent in the modern insurance market.

Literature Review

The globalization processes taking place in the modern world are no longer something new and unusual but have become a natural part of society's development. The insurance market, as a significant part of the financial sector, is also undergoing many transformations. Segmental consolidation of insurance, banking, and financial capital internationally provides a basis for the formation of transnational financial groups (Dudchenko, 2020; Agnihotri and Gupta, 2019; Umadia and Kasztelnik, 2020; Moskovicz, 2019; Popoola et al., 2019; Kljucnikov and Majkova, 2018; Molotok, 2020). Over the past five years, there have been significant changes in the market environment in terms of complete computerization and digitalization of consumers of insurance services and the use of the Internet for their sale (Delanoy and Kasztelnik, 2020; Abeysekera, 2020; Giebe et al., 2019; Njegovanović, 2018; Yanyshyn et al., 2019; Porrini, 2018). The international community, represented by several global organizations (World Bank, IMF, OECD), considers the insurance market and other macroeconomic issues (Zolkover and Renkas, 2020). Consideration of the conditions for innovation in the development of the insurance market of Ukraine and the world is a pattern that must be implemented in the formation of both public and private sector policy (Vargas-Hernández and Rodríguez, 2018; Bozena and Vynnychenko, 2018; Starostina et al., 2020; Ciubotariu et al., 2019; Bagmet and Haponova, 2018; Goncharenko, 2020).

Methodology and research methods. During this study, methods such as analysis, synthesis, generalization, and tabular and graphical data presentation methods were used. The information base of the research is the data of the international database of scientific publications Scopus.

In the context of this problem, it isn't very easy to identify a single area of insurance use. According to the Federal Reserve, over the past twenty years, there has been a significant excess of non-life insurance over life insurance. This trend is explained by several factors. First, it is due to fewer referrals within life insurance. Secondly, the popularity of "non-life" insurance is due to the active development of digital offers and individual insurance products. However, it should be noted that life insurance has acquired a pronounced positive trend with a clear growth trend over the past two years, which is primarily due to the spread of COVID-19.

According to the international organization, OECD, as of 2019, countries' redistribution by the ratio of both types of insurance is as follows - figure 1.

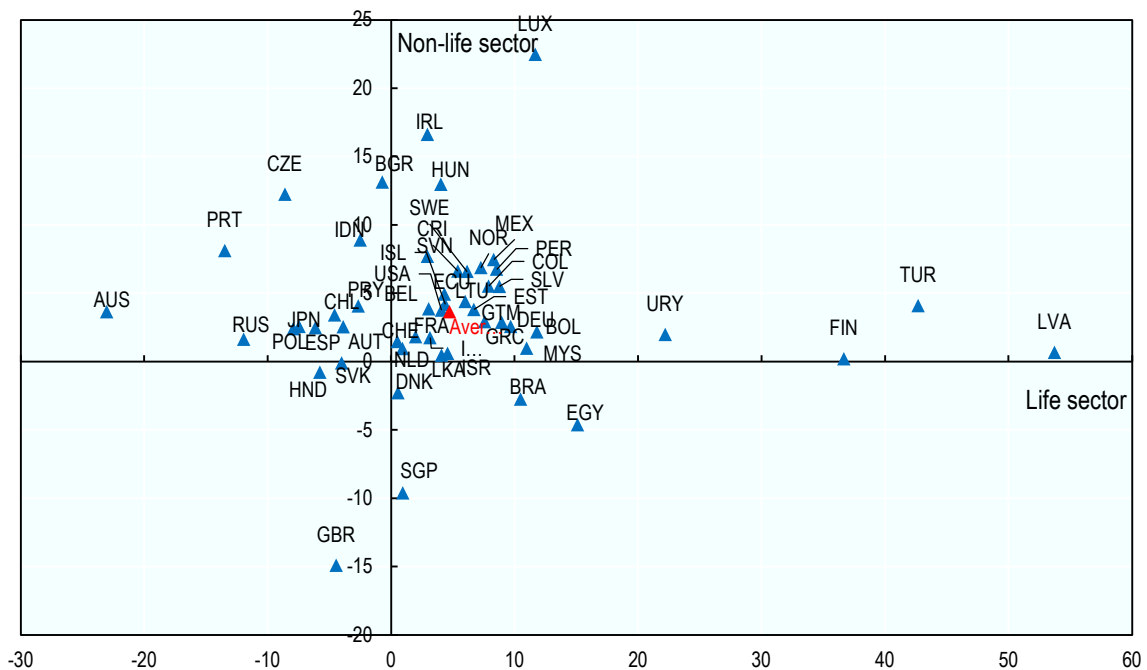


Figure 1. Annual real growth rates of direct gross premiums in the life and non-life sectors in selected countries (%), 2019

Sources: OECD.

As we can see, the annual growth of net direct premiums in the sector of the two main insurance groups for most countries is concentrated at the average level. However, many countries do not fit into this norm. In particular, Latvia, Turkey, Finland, Uruguay are countries where life insurance is much higher than the level of "non-life" insurance, Ireland and Luxembourg - have the opposite situation with a significant exaggeration of "non-life" insurance. The negative growth rate of life insurance, given the positive dynamics of change in "non-life" insurance, is pronounced for Austria, Portugal, the Czech Republic, and Russia. The opposite situation is observed in Singapore, Egypt, and Brazil. The negative growth rate of both types of insurance is relevant for the United Kingdom and Honduras.

The ratio between the level of life insurance and "non-life" insurance is traditionally at the level of 10% of GDP for developed economies. Usually, this group of countries includes the United States and the European Union. However, in recent years, characterized by dynamic changes in the field of innovative development and digitalization of all spheres of society, the leaders in the number of insurance premiums in GDP (more than 20%) were Asian countries Taiwan, Hong Kong, Singapore, Cayman Islands. The group of countries with a total value of insurance premiums of 10% or more includes South Africa, Finland, Denmark, Great Britain, the Netherlands, France, and the Republic of Korea.

Thus, even today, the American and European insurance markets are steadily losing ground to Asian companies due to the slowdown in the growth of developed countries and the intensification of emerging markets. Both American and European companies enter the needs of developing countries but face competition from local insurers. China and Asian countries continue to be drivers of growth in the global insurance market. The share of emerging markets in global premiums is projected to increase by about 50% over the next ten years, driven by factors such as regulatory influence, the introduction of technology, ongoing urbanization, and the pursuit of financial integration. Therefore, in this context, it is important to put forward the hypothesis that, given these trends, research in insurance should be significantly intensified in the Asian region directly in the direction of "non-life" insurance.

Results

One of the most authoritative scientometric and abstract databases, Scopus, was chosen for the bibliometric analysis of publications on issues related to the insurance market's development. For this analysis, the search for the necessary materials was carried out based on keywords based on the concept of "insurance". It should be noted that only English-language works were taken for analysis, as the analysis of bibliometric networks is performed in the English-language program VOSviewer. Given the growing relevance of issues related to insurance, a total of more than 280 thousand results (documents) were obtained, which include primarily scientific articles (74%), scientific reviews (7%), conference proceedings (4.5%), and scientific notes (4.1%) and other developments. The obtained period of research covers almost 200 years - from 1832 to the present day. In the first, mentioned in Scopus, the mention of insurance by a group of English researchers led by Kinnear (Kinnear et al., 1832) was investigated in the context of judicial investigation related to medical aspects.

This search query was limited to 28 areas of knowledge. The vast majority of existing research is performed in the following areas of expertise: Medicine; Social Sciences; Economics, Econometrics, and Finance; Business, Management, and Accounting; Nursing; Engineering; Biochemistry, Genetics, and Molecular Biology; Pharmacology, Toxicology, and Pharmaceuticals and others. The results of scientific research are presented in more detail with a percentage ratio in Figure 2.

Examining scientists' publishing activity, we can see that every year the issue of insurance in various fields is given more and more attention. This is confirmed by Figure 3, which shows the dynamics of the number of publications in this area. The noticeable intensification of the publication of scientific research begins in the middle of the twentieth century, so Figure 3 shows this period. Given the presented schedule in 2021, there is a sharp reduction in articles. This is because the year is just beginning. In general, insurance and related issues have always worried society, as evidenced by the upward trend in Figure 3. Given the peak value of publication activity in 2020, general during the study period can be divided into three-time points in which publication activity was minimal - 1981, 1999, and 2016. However, after each such decrease in activity, dynamic growth is observed.

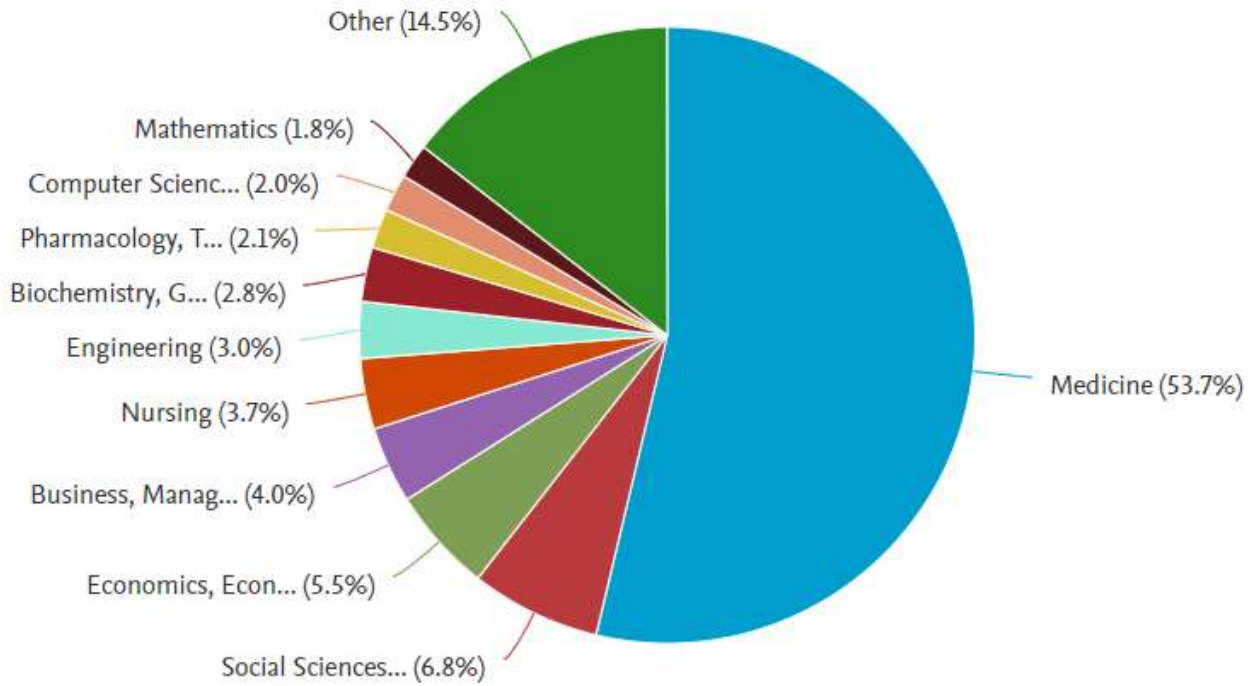


Figure 2. Documents by subject areas, 1832 – 2021

Sources: Scopus.

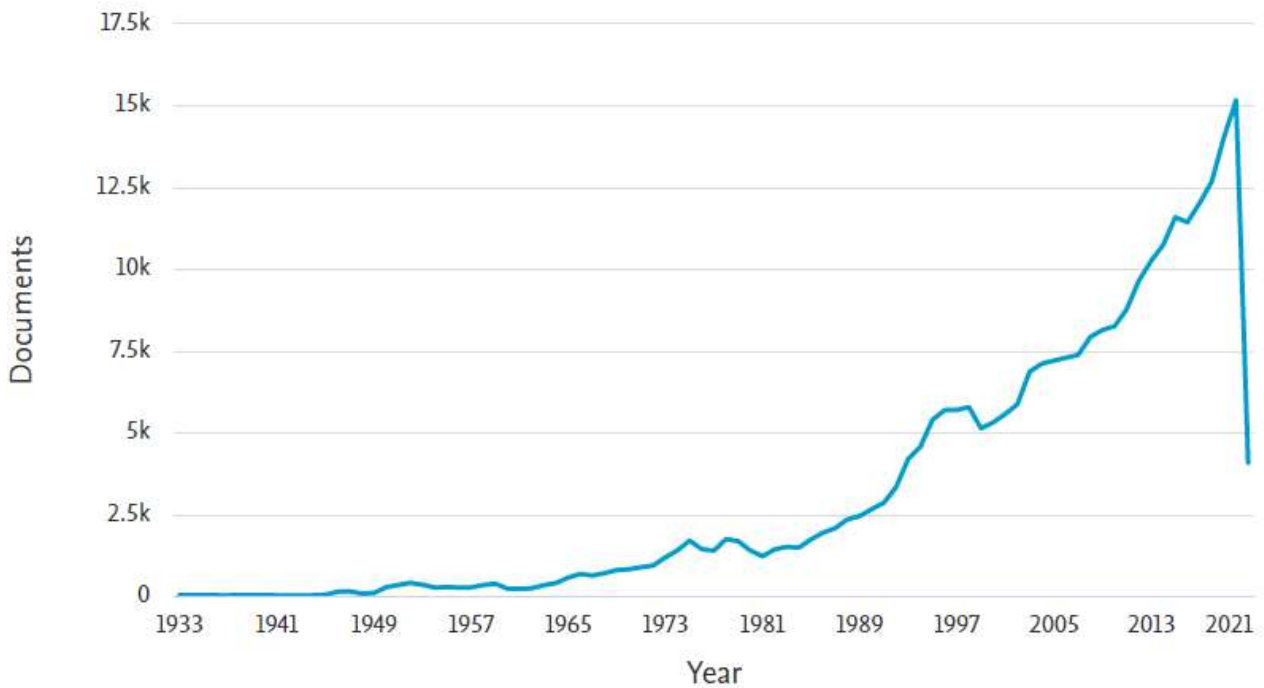


Figure 3. Documents by years, 1933 – 2021

Sources: Scopus

The following important point during the bibliometric study is the analysis of publishing activity by country. This analysis provides a picture of the geographical distribution of scientific interests in the field of insurance. The distribution of countries that are leaders in the number of publications in the field of insurance is presented in the following figure 4.

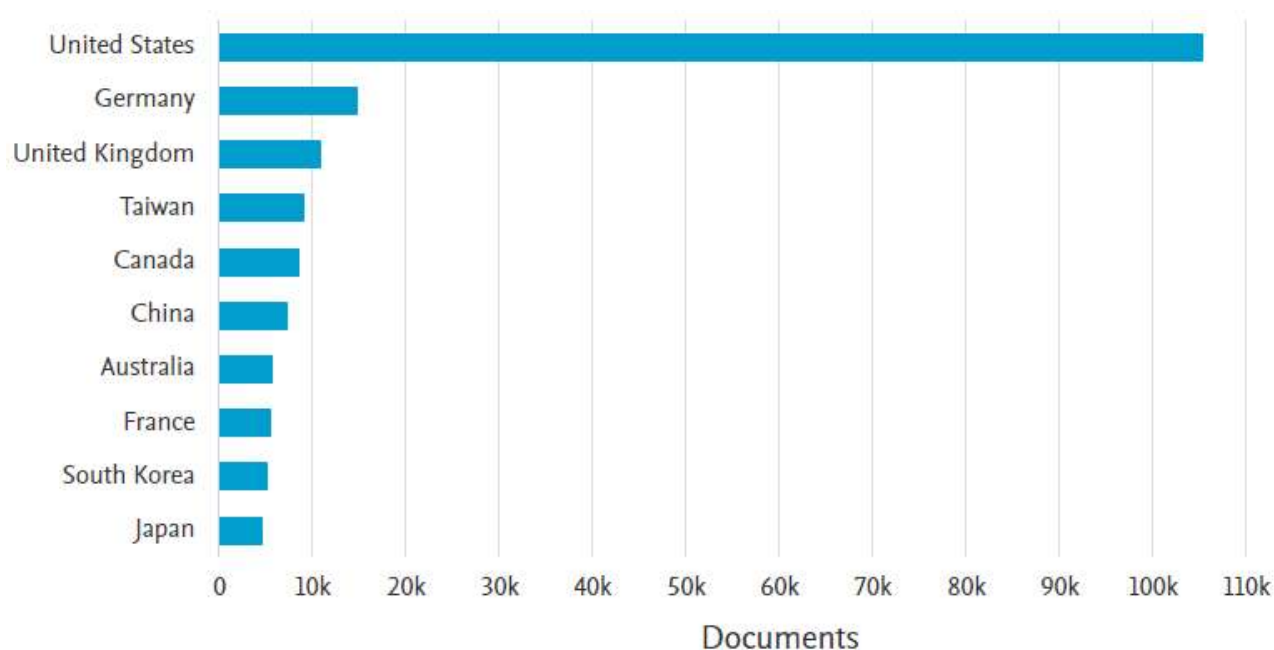


Figure 4. Documents by country/ territory, 1933 – 2021

Sources: Scopus

The geographical distribution of publications shows that the United States is the most active country in insurance research. During the study period, more than 105,000 works were published by American scientists, which are included in the scientometric database Scopus. In second place after the United States is Germany - more than 15 thousand works, third in the UK - more than 11 thousand works, fourth in Taiwan - about 10 thousand works, and fifth in Canada - about 8.5 thousand scientific publications in the field of insurance. The other five countries (China, Austria, France, South Korea, Japan) also have a large number of scientific developments. The list of leading countries confirms that many eastern countries, which demonstrate high economic development rates, are confidently gaining momentum in the direction of research.

It is also worth noting that the authors of one scientific work often work in a conglomeration and represent different educational and scientific institutions and countries. Such scientific cooperation allows adjusting the whole system of scientific relations between different countries. Figure 5 (see in Appendix) shows the links between countries in conducting research on the study of various areas related to insurance.

After analyzing Figure 5 (see in Appendix), we can conclude that cooperation between countries is quite common. Each country is marked with a corresponding color and has a line connection with other countries. The thickness of the lines indicates which countries cooperate with each other more often than others. Because the United States is a leader in insurance research, most thick lines connect the United States with other countries. After a detailed analysis of these relationships, the following countries' pairs can be identified: the United States and Germany, the United States and South Korea, the United States and Taiwan, the United States and Thailand, China and Taiwan.

Having identified the leading countries in the field of research in insurance, it is also important to indicate the names of the organizations that ordered the publications (Figure 6).

As the United States is the primary executor of scientific publications in insurance, the key donors are also from the United States. Given the graph shown in Figure 6, the most significant publishing activity is in American institutions: Harvard Medical School, University of California, University of Michigan, and University of Pennsylvania. However, the list of leaders also includes a Taiwanese institution (National Yang-Ming University) and a Chinese institution (China Medical University Taichung).



Figure 6. Documents by funding sponsors

Sources: Scopus

The bibliometric analysis of publications allowed us to identify six clusters, shown in Figure 6, based on the 1000 keywords listed in these papers. The central term on the map is human, which occurs 934 times in publications and is associated with 998 keywords. The following keywords are slightly smaller but are also important on the map: female (568 occurrences), male (485 occurrences), major clinical study (405 occurrences), middle-aged (189 occurrences), risk factor (114 occurrences), covid -19 (105 occurrences), incidence (85 occurrences), medicaid (91 occurrences), medicare (95 occurrences), demography (95 occurrences), etc.

Figure 7 shows six clusters in different colors, combining a set of different keywords. The first cluster is marked in red, which includes the most significant number of keywords - 406. The most important in this cluster is the concept of human, followed by an article, United States, insurance market and covid-19, i.e., these words are most common in the studied publications. Given that the concept of insurance is associated not only with the words from the first cluster but also has standard links with other clusters, we can talk about a wide range of studies that take into account the peculiarities of the insurance market. The first cluster combines research to identify the relationship between insurance and the person as a key object in this segment.

The second cluster is marked in green. It includes 239 keywords related to the probabilistic nature of insurance, demographics, and various diseases. Besides, there are concepts that indicate the relationship of insurance with the category of big data in this cluster. The following keywords from this cluster are most often found in publications: major clinical study, aged, middle-aged, risk factor, female, male, big data. This cluster combines research to look at the relationship between insurance risk, demographics, social security, and health.

Blue shows the third cluster, which includes 155 keywords related to cancer and other diseases. This cluster's central terms are the words "cancer patient" and "healthcare disparity", which have appeared in publications 40 and 41 times, respectively. Also quite important in this cluster is the term "income".

The fourth cluster is marked in yellow and includes only 121 keywords. This cluster combines terms that are more related to the socio-demographic role of insurance. This cluster contains such terms as sex, risk factors, urban, etc. The keywords in this cluster are partially repeated from the previous three.

The following two clusters, purple and gray, include the fewest keywords, 54 and 25, respectively. They include more specific medical terms and concepts.

Conclusions

Thus, biometric analysis of scientific publications on insurance in the Scopus database allows us to conclude that American and European policyholders are gradually losing ground to Asian insurance companies. This provokes acceleration of developing countries' development and, on the other hand, reduces the development

of highly developed countries. Analysis of keywords that occur alongside the concept of insurance shows the actualization of the global pandemic problem caused by COVID-19. The change in the forces' location in the global insurance space occurs in the plane of reorientation from "non-life" insurance to life insurance.

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References

1. Abeysekera, R. (2020). Co-Production Related To Business Counselling in Microfinance Sector As A Demonstration Of Globalization And Social Cooperation: An Interpersonal Relationship Approach. *SocioEconomic Challenges*, 4(2), 56-66. [https://doi.org/10.21272/sec.4\(2\).56-66.2020](https://doi.org/10.21272/sec.4(2).56-66.2020).
2. Agnihotri, A., Gupta, S. (2019). Relationship of Corporate Governance and Efficiency of Selected Public and Private Sector Banks in India. *Business Ethics and Leadership*, 3(1), 109-117. [http://doi.org/10.21272/bel.3\(1\).109-117.2019](http://doi.org/10.21272/bel.3(1).109-117.2019).
3. Bagmet, K.V., Haponova, O. (2018). Assessing the Impact on Social Sector: A Macroeconomic Approach. *SocioEconomic Challenges*, 3(2), 103-108. DOI: 10.21272/sec.3(2).103-108.2018.
4. Bozena, S., Vynnychenko, N. (2018). Evaluating of the financial equalization system in Ukraine. *Financial Markets, Institutions and Risks*, 2(1), 25-36.
5. Ciubotariu, M., Socoliuc, M., Mihaila, S., Savchuk, D. (2019). Companies Image: Marketing and Financial Communications. *Marketing and Management of Innovations*, 3, 223-241. <http://doi.org/10.21272/mmi.2019.3-17>.
6. Delanoy, N., Kasztelnik, K. (2020). Business Open Big Data Analytics to Support Innovative Leadership Decision in Canada. *Business Ethics and Leadership*, 4(2), 56-74. [https://doi.org/10.21272/bel.4\(2\).56-74.2020](https://doi.org/10.21272/bel.4(2).56-74.2020).
7. Dudchenko, V.Yu. (2020). Interaction of Central Bank Independence and Transparency: Bibliometric Analysis. *Business Ethics and Leadership*, 4(2), 109-115. [https://doi.org/10.21272/bel.4\(2\).109-115.2020](https://doi.org/10.21272/bel.4(2).109-115.2020).
8. Giebe, C., Hammerström, L., Zwerenz, D. (2019). Big Data & Analytics as a sustainable Customer Loyalty Instrument in Banking and Finance. *Financial Markets, Institutions and Risks*, 3(4), 74-88. [http://doi.org/10.21272/fmir.3\(4\).74-88.2019](http://doi.org/10.21272/fmir.3(4).74-88.2019).
9. Goncharenko, T. (2020). From Business Modelling to the Leadership and Innovation in Business: Bibliometric Analysis (Banking as a Case). *Business Ethics and Leadership*, 4(1), 113-125. [http://doi.org/10.21272/bel.4\(1\).113-125.2020](http://doi.org/10.21272/bel.4(1).113-125.2020).
10. Kljucnikov, A., & Majkova, M. S. (2018). Funding Risk Perception by Slovak SMEs: Impact of Age and Size of the Company. *Marketing and Management of Innovations*, 4, 282-297. <http://doi.org/10.21272/mmi.2018.4-24>.
11. Molotok, I. (2020). Analysis Of The Relevance Of Fiscal Decentralization In Ensuring Country Investment Attractiveness. *SocioEconomic Challenges*, 4(2), 99-105. [https://doi.org/10.21272/sec.4\(2\).99-105.2020](https://doi.org/10.21272/sec.4(2).99-105.2020).
12. Moskovicz, A. (2019). Financial Qualitative Research: A Comprehensive Guide for Case Study usage. *Financial Markets, Institutions and Risks*, 3(4), 106-116. [http://doi.org/10.21272/fmir.3\(4\).106-116.2019](http://doi.org/10.21272/fmir.3(4).106-116.2019).

13. Njegovanović, A. (2018). Digital Financial Decision With A View Of Neuroplasticity / Neurofinancy / Neural Networks. *Financial Markets, Institutions and Risks*, 2(4), 82-91. DOI: [http://doi.org/10.21272/fmir.2\(4\).82-91.2018](http://doi.org/10.21272/fmir.2(4).82-91.2018).
14. Popoola, M. Ak., Brimah, Am. N., Gbadeyan, A. R. (2019). Financial Institutions Micro Loans: A Strategy for Reducing Poverty in Nigeria. *Financial Markets, Institutions and Risks*, 3(3), 13-17. [http://doi.org/10.21272/fmir.3\(3\).13-17.2019](http://doi.org/10.21272/fmir.3(3).13-17.2019).
15. Porrini, D. (2018). The effects of innovation on market competition: the case of the insurance comparison websites. *Marketing and Management of Innovations*, 3, 324-332. <http://doi.org/10.21272/mmi.2018.3-29>.
16. Starostina, A., Pikus, R., & Kravchenko, V. (2020). Innovative Activities within Ukrainian Insurance Companies. *Marketing and Management of Innovations*, 2, 44-55. <http://doi.org/10.21272/mmi.2020.2-03>.
17. Umadia K. Sr., Kasztelnik, K. (2020). The Financial Innovative Business Strategies of Small to Medium Scale Enterprises in Developing Country and Influence for the Global Economy Performance. *SocioEconomic Challenges*, 4(3), 20-32. [https://doi.org/10.21272/sec.4\(3\).20-32.2020](https://doi.org/10.21272/sec.4(3).20-32.2020).
18. Vargas-Hernández, J. G., Rodríguez, C. R. F. (2018). Leadership Styles as a Challenge to Generate Innovation Environments in the Companies of the 21st Century. *Business Ethics and Leadership*, 2(4), 64-73. [http://doi.org/10.21272/bel.2\(4\).64-73.2018](http://doi.org/10.21272/bel.2(4).64-73.2018).
19. Yanyshyn, Y., Bryk, H. & Kashuba, Y. (2019). Problems and Perspectives of Internet-Insurance in Ukraine. *Marketing and Management of Innovations*, 4, 31-38. <http://doi.org/10.21272/mmi.2019.4-03>.
20. Zolkover, A., Renkas, J. (2020). Assessing The Level Of Macroeconomic Stability Of EU Countries. *SocioEconomic Challenges*, 4(4), 175-182. [https://doi.org/10.21272/sec.4\(4\).175-182.2020](https://doi.org/10.21272/sec.4(4).175-182.2020).

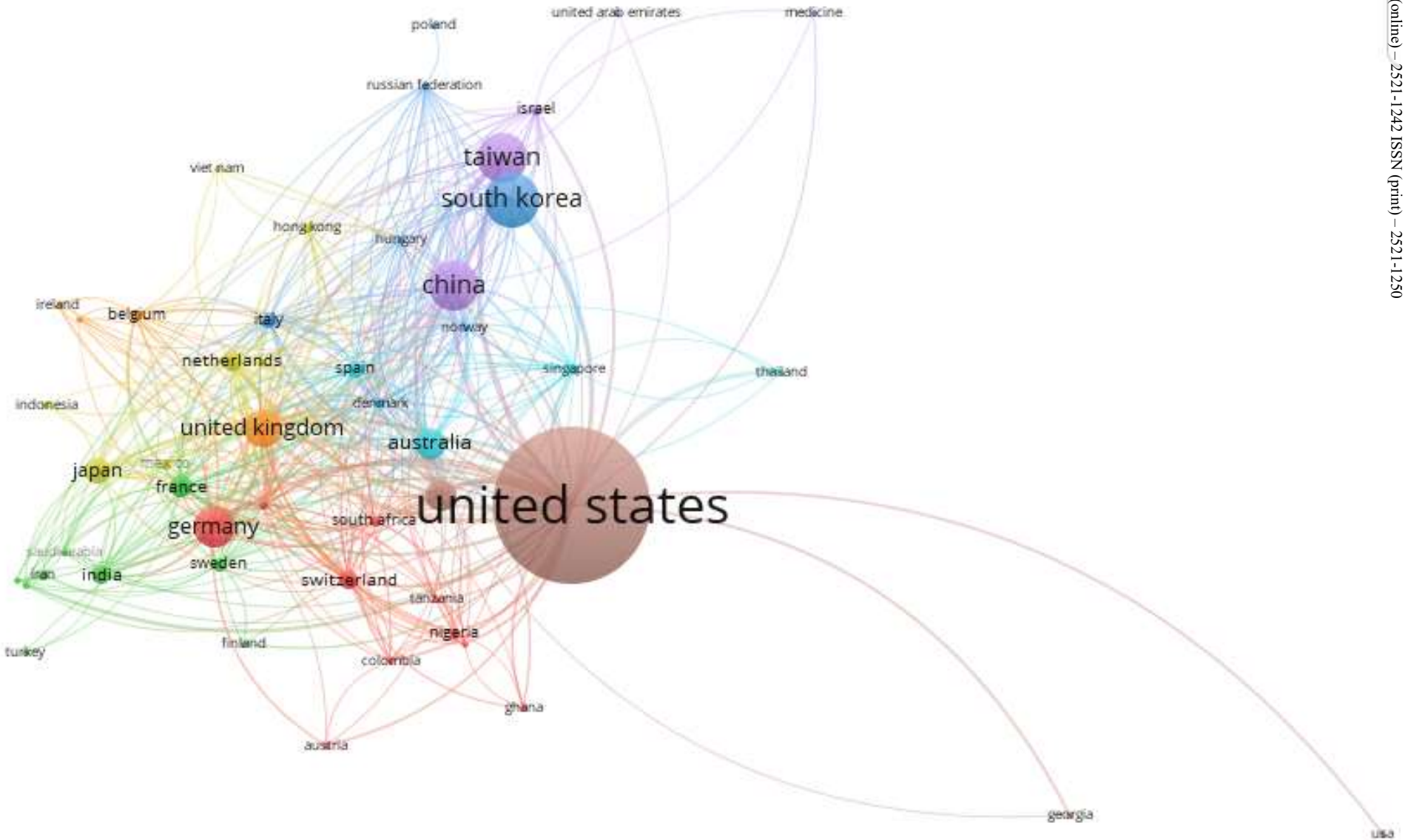


Figure 5. Geographical analysis of publishing activity in the Scopus scientometric database on the topic of insurance as of 2021

Sources: developed by the author based on VOSviewer

