REPUBLIC OF TURKEY

ADANA ALPARSLAN TÜRKEŞ SCIENCE AND TECHNOLOGY UNIVERSITY

SOCIAL SCIENCES INSTITUTE

FACULTY OF BUSINESS AND ADMINISTRATION

DETERMINANTS OF BANKING STABILITY IN BRICS COUNTRIES

ALİ ÇEVİK

MASTER'S THESIS

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ASST. PROF. DR. ÖMER TUĞSAL DORUK

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I hereby declare that all information in this thesis has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all information that is not original to this work.

Ali Çevik

ABSTRACT

DETERMINANTS OF BANKING STABILITY IN BRICS COUNTRIES

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Today, BRICS economic growth indicators are used as such increasing forces in today's economy. The formation was led by China, the world's second-largest economy, and former G8 country Russia. They have rapid growth figures with the advantages of high population numbers, the area they cover, and cheap labor. On the other hand, the banking sector has a very important mission, especially in developing countries' economies. The necessity of a strong and stable banking system for countries that want to become economically strong is an important issue mentioned in previous studies. This study aims to determine the factors that determine the banking stability of the BRICS countries. When the literature on the subject in the world is examined, it has been determined that there are not many studies in this field. In this study, the factors affecting the banking sector of the BRICS countries are examined with bibliographic analysis techniques to fill this gap in the literature. Within the scope of this analysis, Web of Science and Scopus databases were used, and research made in the world on the subject was examined. The change of many factors such as author, journal, and field keyword, which are decisive for the research, and the relationships between them have been revealed.

Keywords: BRICS Countries, banking stability, bibliometric analysis

ÖZET

BRICS ÜLKELERİNDE BANKACILIK İSTİKRARINI BELİRLEYEN ETKENLER

Ali Çevik
İşletme Anabilim Dalı
Danışman: Dr. Öğr. Üyesi Ömer Tuğsal DORUK
Eylül 2022, 48 sayfa

Günümüz küresel ekonomisinde BRİCS ülkelerinin ekonomik büyüme göstergeleri dikkatleri çekmektedir, bu sayede yükselen güçler olarak adlandırılmaktadırlar. Eski G8 ülkesi Rusya ve Amerika'nın arkasından dünyanın en büyük ikinci ekonomisi durumunda olan Çin in önderlik ettiği oluşum, yüksek nüfus sayıları, kapladıkları yüzölçümü alanı ve ucuz işçilik avantajları ile hızlı büyüme rakamlarına sahiplerdir. Bankacılık sektörü ise özellikle gelişmekte olan ülkelerin ekonomisinde çok önemli bir misyona sahiptir. Ekonomik olarak güçlü konuma gelmek isteyen ülkelerin, güçlü ve istikrarlı bir bankacılık sisteminin olması gerekliliği daha önceki çalışmalarda bahsedilen önemli bir konudur. Bu çalışma BRICS ülkelerinin bankacılık istikrarını belirleyen etkenleri belirlemeyi amaçlamaktadır. Dünya da konu ile ilgili literatür incelendiğinde bu alanda çok fazla çalışma yapılmadığı tespit edilmiştir. Bu çalışma literatürdeki bu açığı kapatması amacıyla, BRICS ülkelerinin bankacılık sektörünü etkileyen faktörler konusu bibliyografik analiz teknikleri ile incelenmiştir. Bu analiz kapsamında Web of Science ve Scopus veri tabanları kullanılmış, konu hakkında Dünya da yapılmış araştırmalar incelenmiştir. Araştırmalar için belirleyici olan yazar, dergi, alan anahtar kelime gibi birçok etmenin değişimi ve bunlar arasındaki ilişkiler ortaya konmuştur.

Anahtar Kelimeler: BRICS Ülkeleri, bankacılık istikrarı, bibliyometrik analiz

I dedicate my dissertation work to my family and friends.

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Ali ÇEVİK

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NOMENCLATURE

BRICS	: Brazil-Russia-India-China-South Africa
H-index	: Hirsch index
GDP	: Gross Domestic Products
G7	: Group of Seven
G8	: Group of Eight
IMF	: International Monetary Fund
InfoMap	: Information Map
MCP	: Inter-Country Collaboration Indices
NATO	: North Atlantic Treaty Organization
NDB	: New Development Bank
SCP	: Intra-Country Collaboration Indices
UN	: United Nations
USA	: United States of America
VECM	: Vector Error Correction Model
WB	: World Bank
WoS	: Web of Science
WTO	: World Trade Organization

1. DETERMINANTS OF BANKING STABILITY IN BRICS COUNTRIES

1.1.Introduction

Since the gradual loss in power of much anticipated leading powers known as G7 countries under the USA's leadership, new opportunities have emerged for the previous era's underdeveloped or developing countries to fill the scene both politically and economically. Among these countries, five of them known as BRICS (Brazil, Russia, India, China, and South Africa) now challenge the status of G7 countries to be leading powers in the world established by also G7 members. Indeed, Purushothaman and Wilson (2003), based on Goldman and Sach's report in 2013, anticipated a pivotal role that BRICs countries will most likely take until the year 2050. These assumptions are the results of an in-depth analysis of demographic projections models consisting of currency movement and capital accumulation as well as the rate of growth in economic productivity. Additionally, regarding BRICS' increasing population, GDP levels, and foreign exchange reserve (Luna, 2016, p.2), the potential of these countries are most apparent. However, these factors alone are not enough to guarantee the imperious status of these countries. It is also crucial to weigh collectives' macro stability, their willingness and openness to international trade, and changes in these countries' demographics.

Following World War II, with the beginning of a new era shaped by the in-war developments and post-war traumas, today's developed countries, has much to offer to the world in terms of education, politics, sociological revolutions, and technology well as economics. Though they are war-veterans, these countries benefitted from the crisis world was in and took the opportunity to empower themselves, leading to emergence of "The Bretton Woods System" which was designed for the sake of First World countries (Peet, 2003). Likewise, Chun (2016) suggests that with the new system aim was to ensure particularly interest of US and first world countries and therefore, these countries initially excluded and marginalized the others for their own benefits. Followingly, taking advantage of the era, they sold all the innovations war brought into the scene, thus creating a new economic ecosystem. Also, developed countries favored the post-war baby-boom generation, which contributed massively to these countries' socio-economy. Meanwhile, underdeveloped countries, particularly BRICS countries, were mostly neglected and regarded as new markets. However, with the turn of events, political and economic instability in both the USA and Europe pushed G7 members to fall back in terms of BRICS's developing pace. Additionally, the aging population, slowing in production and innovations, resulted in slowing economic development, making sure not the end of G7 but the emergence of new powers. Shearer (2018) also echoes this notion stating that "[these] economic challenges to US hegemony have great potential to challenge the post war power associations currently enjoyed by the US and Western nations in developing parts of the Global South". Additionally, Armijo (2007) proposed that “since US dominance in the international economics has reached its peak point, the new international system consisting of four major poles of BRICs are like to emerge, also excluding Western countries from the scene”.

As of today, BRICS is estimated to have almost 3.08 billion inhabitants which nearly corresponds to the half of total world population, marking them as among the top ten countries in terms of population volume (Plecher, 2020). In all these, age structure and fertility rate have the paramount role in sustaining their economic powers since the young population is the building block of their labor force. Other trends in demographics, such as mortality and migration, closely shaped the current political, social, and economic structure. Consequently, while their sheer size of population is projected upon their economy sizes, demographic trends also contributed to overall development of these countries. Furthermore, BRICS collectively own an outstanding size of economy with strong growth rates, which emphasizes also their increasing significance in global economy. Regarding this fact, it is not surprise that these countries also strive for a more solid approval in international governance and constantly voice their demands (O'Neill, 2001).

Although human capital characteristic plays a vital role in defining countries' economic structure, it is not the only determining factor. Indeed, other socio-economic variables in accordance with macroeconomic, foreign exchange rates, GDP, and sustainable growth influence the stability of countries' economic impact factors. Among these, banking stability is another indicator of the sustainability and stability of the countries' overall economic structure. Banking stability refers to a "steady state in which the financial system efficiently performs its key economic functions, such as allocating resources and spreading risk as well as for settling payments" (Deutsche Bundesbank, 2003 cited in Jahn and Kick, 2012, p. 8). In other terms, to the extent that banks in a country can facilitate and enhance economic processes and manage risks over time, it defines the banking stability in that country. Besides, banks are the most important financial institutions in a country, particularly in developing ones since their financial systems are heavily bank-oriented. Therefore, the banks have a vital position in finance and stability in banking systems, which means stability in the financial structure.

As emphasized above, an efficient, stable financial system is the pivotal ingredient to sustain both economic development and growth. It is also argued that "such a system contributes to an efficient allocation of real economic resources across time and space and an efficient management of wealth and capital accumulation" (Kool, 2006, p.1). Therefore, the banking system's efficiency and stability are of paramount importance since they are the banks responsible for being a mediator in the process of asset allocation. Furthermore, a sound financial system ensures the countries' overall capacity to allocate funds efficiently and resist the financial crisis, which is expected to aid the real sector and financial system in preventing regression. The framework of financial development and its impact on growth is firstly proposed in the work of Schumpeter (1991) and later confirmed in King and Levine (1993a, 1993b), who suggest that all indicators of financial development are strongly correlated to economic growth, physical capital accumulation as well as the economic efficiency. Originally, Schumpeter (1991) emphasizes the importance of loans as the fundamental sources of funds enabling entrepreneurs to contribute to economic growth, thereby facilitating technological innovations and economic development. Similarly, King and Levine's (1993b) study of 80 countries over the period of 1960-1989 reveals that rather than simply mere relationship among coefficients, indeed sizes of coefficient figures signal economically significant interrelatedness (King and Levine, 1993b). Levine et al. (2000) also verify previous findings and further exclaiming the influence of total factor productivity growth on the development of financial intermediaries.

Considering the influence of banking system, the common consensus is that banking stability along with financial markets positively contributes to economic growth and financial efficiency is the key to manage financial risks (Asanović, 2018). More specifically, Jokipii and Monnin (2013) observed the positive correlation between banking stability and the real economy. They showed that stability periods are consistent with the increase in real output growth, while instability resulted in reduced growth. Moreover, findings acknowledge that instability in the banking sector also causes instabilities or uncertainties in the GDP growth forecast. For instance, financial distress in European countries is reported to depresses or revokes in some cases, influence of the financial development on economic growth (Carbo-Valverde and Sanches, 2012). Likewise, in the USA, a similar situation was observed in the data covering the period of 1973-2007 that financial straits hindered financial growth by reducing lending and investments. In short, banking stability is the force behind a functioning financial system that promotes real economics activities. A sound banking system also ensures third-person investments' safety, and it facilitates daily transactions and foreign transactions.

Various factors are defining and determining countries' financial and banking stability. Initially, these factors are grouped into two as bank-specific factors and external factors. To start with bank-specific factors, these include bank-specific determinants such as bank size (Jensen and Meckling, 1976; Donaldson and Davis, 1991, Leaven et al. 2014, Köhler, 2015), revenue diversification (Lepetit et al., 2008), credit risk (Adusei, 2015; Ali and Puah, 2018; Phan et al., 2019), loan loss provision (Ozili and Outa, 2017; Tan and Floros, 2013), capital regulation (Bouheni and Hasnaoui, 2017; Shadday and More, 2019) and bank capital (Angier et al., 2014, 2018). Besides, other studies investigate the influence of external factors are macroeconomics and industry-specific ones such as tax rate (Schepens, 2016; Celerier et al., 2016; Gambarcorta et al, 2017) , overall GDP growth (Rodrigues, 2019; Bayar et al., 2020; Stewart et al., 2021) inflation rate (Omondi, 2014; Kobia, 2018), and stock market capitalization (Levine, 1991; Aali-Bujari et al., 2017; Hassan, 2017) . In addition to these factors, the efficiency of the system can be evaluated through political stability and regulatory quality (Ertuğrul, 2019; Compaoré, 2020, Jadah et al., 2020) as well as assurance to investment and investor protection, the status of unemployment levels, and governments' measures against corruption.

Although the literature on the evaluation of developed countries is vast, little so far has been investigated considering BRICs countries' current status or predicted position for the coming years. Moreover, even fewer number of studies focus on the concept of banking stability in BRICs, leaving BRICs' role in the future economic performance open to dispute. Also, these countries have not clearly investigated in terms of the stability factor. Though their importance is regularly emphasized in many studies, there is a need for in-depth investigation of taking into consideration both external and bank-specific factors to assess the status and forecast their projected position for the future era.

Within these frameworks, the current study investigates research on BRICS countries, their demographic structure, and the issue of banking stability through bibliometrics analysis. By doing so, this study scrutinizes BRICS countries and their banking stability to observe related concepts in the relevant literature. Therefore, outcomes are expected to discover the currently emphasized concepts centered around the banking stability of BRICS countries. Along with the collective analysis of BRICS.

1.2. Statement of the Problem

BRICS are relatively new topic in both political and financial fields. Indeed, the original term "BRIC" was coined first in 2001 by financial author O'Neil and the organization officially was established in 2009, initially including four countries namely, Brazil, Russia, India and China. Later in 2010, South Africa was included in the list. However, despite their relatively new status quo, BRICS countries hold an import position particularly in economics. Likewise, their projected influence in global arena is likely to increase considering the recent conflicts in the Western World. Also, China as the leading technology developer, Russia and India as the major source of various raw material, collectively BRICS' labor force has a solid ground in the future world order.

Nonetheless, given the recent status of the organization, there are a limited number of studies and even less on the financial significance and their future position. Within this framework, banking sector and banking stability are major components as the indicators of effectiveness of monetary policy, trust in the system as well as support for innovation in all field and economic growth.

To accurately assess the significance of these countries, it is important to critically observe and meticulously analyze the relevant research field. Therefore, the scarcity of studies on BRICS poses a challenge to economists and researchers alike.

1.3. Significance of the Study

The banking stability which is of paramount importance in the projection of overall country stability and economic performance, is less commonly investigated topic within the framework of BRICS despite numerous studies on develop countries. Additionally, considering the stated importance of the BRICS countries in the literature and their forecasted global importance, there is a need for more research. Therefore, analysis of current research on the BRICS and banking stability are of the use for the survey of the progression of these countries and future expectations in the global arena. Within this framework, this study seeks to answer following research questions;

1) What are the most commonly investigated topics in the literature regarding BRICS and their banking stability?
2) What are the most influential studies in the framework of BRICS and their banking stability?
3) Who are the most influential authors and their foci of interest regarding BRICS and their banking stability?

2. LITERATURE REVIEW

This chapter introduces the concept of BRICS along with the literature review of economical and political status of countries included in the organization. Followingly, the banking stability, status, relevance, and importance of the term within the frame of BRICS is described.

2.1. Economical and Political Status of BRICS

The BRICS countries, the abbreviations of Brazil, Russia, India, China, and South Africa, were first used in 2001 by Goldman Sachs financial author Jim O'Neil in his report 'building better global economic BRIC' (Oneill, 2001, p.1). The original abbreviation was later changed to BRICS following the joining of South Africa to the union in 2010. Although O'Neil(2001) first put it forward in 2001, they made their first official contact at the level of foreign ministers at the 61st term meeting of the United Nations (UN) in 2006. Then, at the G8 meeting held in 2008, the countries assembled and agreed to establish a platform for 2009 to create common solutions to common problems. One year later, they held their first summit in Yekaterinburg, Russia. In this meeting, all participating countries agreed about creating a more democratic environment based on the law, equality, cooperation, mutual respect, and collective decision-making. The union, which expanded as BRICS with the inclusion of South Africa in 2010, decided to hold a summit in a different member country per year.

Although each country has a different economic and political structure, the collective characteristics of these countries include a high population, a cheap labor force, rapidly increasing national income, a wealth of natural resources, and a high number of consumers in the domestic market due to the high population. The total area of these countries in the world is more than 25%, and their total population is more than 40% of the world's population; only these two pieces of information reveal the importance of the BRICS countries in the world.

2.2. Political Status of BRICS

Although the term BRICS first appeared in the early 2000s, it was mentioned as an economic community, but after 2010, it increased its importance in other important issues besides the economy. Today, BRICS countries have started to play an important role at the international level. Therefore, USA is no longer seen by a large margin as the world's only superpower.

Instead, it is predicted that potentially powerful states such as BRICS will bring their power to the fore at the international level in the upcoming years (Stefansson, 2012: 6).

According to 2017 data on the populations of the BRICS countries, China ranks first both in BRICS and in the world with 1,409,517,317 (18.67)%. India, on the other hand, ranks second, following China, with 1,339,180,127(17,74)%. Brazil is in the fifth place with 209,288,278 (2.77)%, Russia is in ninth place with 143,989,754 (1.31) %, and South Africa is in 25th place with 56,717,156 (0.75) %. Therefore, BRICS countries constitute 41.8% of the total world population (Worldometers, 2018). It is influential that only China and India have a population of more than one-third of the world's population. Although the population number does not carry all the merits, the desire of the BRICS countries to have a greater say in world politics is the natural result of the fact that one out of every two people living in the world lives in the countries that constitute the union.

BRICS countries have held regular summits since 2009, ensuring their greater position in world politics and announcing their shared perspectives to the global. Likewise, they aim to show that they are also in the global world order through common decisions at these meetings. In the declaration published in 2017 about the International Monetary Fund (IMF), the BRICS countries demanded that IMF presidents should be appointed outside of Europe and resorted to diplomatic means with this goal. Consequently, they solicited that the IMF, the World Bank, the World Trade Organization, and the United Nations should form a proper structuring of the Security Council, and it was declared that the rights of countries with large economies should be better defended and represented on international platforms (BRICS, 2017, p.1).

At the 5th BRICS countries summit hosted by South Africa in 2013, the member states decided to establish an international financial institution that could rival the IMF and the World Bank, which are dominated by western countries. The name of this institution, whose foundations were applied at the summit in 2013, was confined as the “New Development Bank”. Followingly, at the 6th BRICS countries summit held in Fortaleza, Brazil, on July 15, 2014, the agreement of the new development bank was signed by the member states as a result of long negotiations. The head office of the bank is defined as Shanghai and K.V. Kamath was appointed as the head of the bank (New Development Bank, 2018).

The initial capital of the newly established bank was set at 100 billion, to be increased later. Although it is not at a level that can compete with the IMF and the World Bank in terms of size, it was an attempt to create an alternative with a budget of 100 billion dollars, especially for the developing countries in the world. For example, while the loan volume of the New Development Bank (NDB) is approximately 3.5 billion dollars, the loan volume of the world bank is around 60 billion dollars, yet NDB has a symbolic importance. NDB expressed that the IMF and the World Bank will not demand burdensome prerequisites for countries to fulfill while providing finance but instead will demand conditions based on development. This situation has brought NDB to an important position for developing countries that have difficulty meeting the harsh requirements of the IMF and the World Bank. Moreover, the fact that developing countries have loan demands from NDB will significantly affect the bank's future.

BRICS countries request to participate more actively in globalization and multipolar world order. Since the world's two largest international financial institutions, the IMF, and the World Bank, are under the control of industrialized countries, developing countries cannot find sufficient financial resources, an issue which BRICS countries resist strongly (Zhang, 2014, p. 69). In this direction, NDB provides less costly and swift loans compared to other international organizations, carries out its activities with relatively more representatives, and undertakes to carry out its activities with proper management and decision-making mechanism (Dixon, 2015, p. 1). Apart from the establishment of NDB in 2014, BRICS cooperation was tried to be strengthened with many different agreements. These agreements concern trade agreements, cooperation in energy policy, and joint work in defense policy and technology.

After the meeting in 2016, the BRICS counter-terrorism working group, agriculture research platform, tourism conference, sister cities forum, and BRICS nations football tournament organizations were established. Later, the BRICS universities cooperation network, BRICS universities association, BRICS credit evaluation agency, BRICS young scientists award, and BRICS sports board were designated (BRICS information center(a), 2018).

The purpose of establishing the BRICS cooperation mechanism organization is to increase the effectiveness of the countries that comprise the organization within the IMF. For example, BRICS countries want veto power in the IMF administration. In the current system of the IMF, for a country to have a veto right, it must hold at least 15 % of the shares. While the

BRICS countries have a 14.3% collective share with the practices implemented since 2010, the USA is still the only country with a veto right in the IMF with a 16.47% share (BRICS, 2017: 2).

BRICS countries tend to act together politically against other countries in the world. In many occasions, it was observed that BRICS countries generally voted in the same direction on the issues discussed in the United Nations General Assembly between 1992 and 2014 (Montenegro and Masquita, 2017, p.1). Similarly, After Russia annexed Crimea, other countries in the union, Brazil, India, China, and South Africa avoided a United Nations resolution that would directly condemn Russia (Stuenkel, 2016, p.44). Another example of this situation is that after NATO intervened in Libya and the BRICS countries published a joint statement to condemn the minimum intervention applied to Libya (Elbasan, 2011). However, BRICS countries wish to reform the United Nations Security Council to have a more inclusive and democratic global governance structure. On the other hand, as the international balances in the world have changed, the United Nations aim to increase the number of permanent members in the security council and enact new regulations regarding the voting rights of the five permanent members of the security council. Similarly, BRICS favor continuous dialogue, which is why they can participate in resolving global issues (Jash, 2017).

2.3. Economic Status of BRICS

Initially, the most important feature that distinguishes the founding four countries included in the BRIC from other developing countries is that they are rich in labor and natural resources. Although there are similar economic indicators, the BRIC countries' economic structures are variant. While the agriculture sector has grand weight in the economy of Brazil and Russia, the service sector has outstanding significance in the economies of China and India. Moreover, since China and India's natural resources are insufficient regarding their overall population, they are a net oil and natural gas exporter. Their cumulative land area is more than a quarter of the world's area (Narin and Kutalay, 2013. p.41). In addition to their population and area, it is inevitable that the natural resources of the BRICS countries and the number of consumers are high, the labor force is relatively cheap, the production costs are low, and therefore the export intensity is immense. BRICS countries have constantly aimed to centralize export into their foreign trade, to increase their export volume, and to increase the share of advanced technology products (Bülbül, 2018, p.27).

Table 2.1. BRICS Countries Export Values (Billion $)

Years	Brazil	Russia	India	China	South Africa
2010	200,1	397,0	220,2	1577,7	82,4
2011	253,7	516,9	301,0	1898,3	97,3
2012	239,9	519,6	289,4	2048,7	89,9
2013	239,3	521,6	334,1	2209,0	88,2
2014	222,7	494,7	315,0	2342,2	85,8
2015	188,7	342,4	259,0	2271,5	75,4
2016	182,3	284,5	255,9	2096,3	70,4
2017	214,9	356,7	291,8	2262,8	82,9
2018	239,8	451,4	322,4	2494,2	92,6
2019	225,3	426,7	323,2	2498,5	88,0

(Adapted from United Nation Trade Database)

As seen in the table 2.1, while China is in first place in exports among the BRICS countries, China is followed by Russia, India, Brazil, and South Africa. As a result, there is an increasing momentum in the global exports of BRICS countries, which carry out a trade, especially export-intensive economic policy.

Table 2.2. BRICS World Export Values and Total Shares (Billion $ - %)

Years	BRICS Export	World Export	BRICS Export of World %
2010	2478	15306	16,19
2011	3067	18342	16,72
2012	3188	18517	17,21
2013	3392	18966	17,89
2014	3461	19007	18,21
2015	3137	16556	18,95
2016	2890	16043	18,01
2017	3209	17738	18,09
2018	3601	19472	18,49
2019	3562	18933	18,81

Table 2.2 shows the total value and ratio of BRICS countries in global export volumes. Since 2010, the rate of BRICS countries in global exports has been increased steadily. In other words, while the rate of global exports was 16.19% in 2010, this rate increased to 18.81% in 2019, and the place of BRICS countries in global trade advanced.

Table 2.3. GDP in BRICS countries (Trillion $)

Years	Brazil	Russia	India	China	South Africa	World
2010	2.209	1.525	1.676	6.870	0.375	66.113
2011	2.297	1.590	1.763	6.669	0.387	68.189
2012	2.341	1.654	1.860	7.193	0.396	69.906
2013	2.411	1.684	1.978	7.751	0.406	71.767
2014	2.423	1.696	2.125	8.327	0.413	73.811
2015	2.337	1.662	2.295	8.913	0.418	75.936
2016	2.261	1.666	2.482	9.524	0.420	77.904
2017	2.291	1.696	2.659	10.185	0.426	80.445
2018	2.321	1.739	2.822	10.873	0.429	82.938
2019	2.347	1.762	2.964	11.537	0.430	84.991

Gross domestic product refers to the market value of goods and services produced domestically in a given period, usually one year. Gross domestic product (GDP) rates of BRICS countries show a continuous increase on a global scale. While the GDP ratio of the BRICS countries was approximately 18% of the total global GDP in 2010, this ratio has increased to approximately 25% of the total GDP in 2019. In other words, while the total GDP of the BRICS countries was 11 trillion 872 million dollars in 2010, this figure increased by 60% in 2019 and reached around 19 trillion 40 million dollars (World Bank Database, 2020). Scrutinizing the countries' GDP individually, China has a production of 11 trillion 537 million dollars, which is more than half of the BRICS countries alone. India is in the second place after China with 2 trillion 964 million dollars. Brazil is in the third place with 2 trillion 347 million dollars, Russia is in the penultimate position with 1 trillion 762 million dollars, while South Africa is in the last place with 430 million dollars. As shown in the table 2.3 in detail, the GDP of the BRICS countries between 2010 and 2019 are in a constant upward trend.

Table 2.4. GDP Growth Rates of BRICS Countries

	2010-2014	2015-2019	2010-2019
Brazil	3,386	-0,609	1,389
Russia	3,063	0,785	1,924
India	6,598	6,888	6,743
China	8,648	6,740	7,694
South Africa	0,790	0,790	1,682
World	3,094	2,861	2,977

Table 2.4 shows GDP growth rates of the BRICS countries between 2010 and 2019 and the growth rate of the World. When the table 2.4 is examined, it is seen that China and India have

grown more than the average growth of the World while other countries experienced a GDP growth below the World average.

The main reason for this negative growth experienced in Brazil between 2015 and 2019 is the depreciation of the country's currency “Brazilian Real”, and the political crises experienced in the country at that time. The political crisis in the country prevented the taking and implementation measures to eliminate the disorders in the economy (Ministry of Development, 2016). National income per capita, on the other hand, contains more detailed information than GDP and is the most important indicator in explaining economic welfare (Ağır and Yıldırım, 2015. p. 55). In Table 2.5, the per capita income of the BRICS countries between 2010 and 2019 is compared to the world average.

Table 2.5. GDP per capita Income of BRICS Countries

	2010-2014	2015-2019	2010-2019
Brazil	11,720	11,123	11,421
Russia	11,338	11,623	11,480
India	1,484	1,973	1,728
China	5,330	7,362	6,346
South Africa	7,485	7,457	7,471
World	9,867	10,710	10,288

Regarding GDP per capita income data, it is observed that Brazil and Russia have more income than the world average, while other BRICS countries have an income below the average income in the world. Also, considering the data of China and India, they are the countries that have grown the most proportionally between the first-term averages and the second-term averages.

2.4. Banking Stability

Banking stability is the broad term for explaining the status of the well-being of the banking system and banking sector in a country and the interdependence of all the banks in the system through direct or indirect means (Brunnermeier et al., 2009; Segoviano and Goodhart, 2009). Stability in banking is of paramount importance since it is the prime ingredient to financial stability, revealing the extent of a country’s ability to withstand financial shocks and fluctuations in economic structure. Banking stability depends on several parameters, including asset quality, liquidity, capital adequacy, profitability, financial structure, and regulation. Likewise, the banking stability in a country is directly interrelated with the real economy, and it can be affected by changing conditions in the financial market. In this respect, the banking system's stability can be viewed as an indicator of financial stability in a given economy. Similarly, Swamy (2014) defines banking stability as a network of affairs among financial actors where the efficiency in resource allocation, management of financial risks and actors' ability to prevail shocks and crises are questioned to mediate asset distribution and price volatility.

In recent years, many studies have focused on the parameters of banking, therefore, financial stability. Many indicators likely to play a vital role in ensuring this stability have been well defined. Among these, while some investigate the assessment of bank performance and related risks, others have focused on the bank-external factors. In both types of analysis, central banks are the prime data sources for banking sector reliability with BSI calculations or financial strength index utilizing various statistical indicators. On the other hand, there is a body of studies investigating stability determinants; however, these studies are only limited to the analysis of certain indicators applicable to certain countries. Comprehensive literature is still missing in the sense of bibliometrics analysis, except for Kočišová and Stavárek (2015), who summarize the financial and banking stability indicators used by particularly developing countries in detail.

Overall, the banking sector is an important actor in the stability of the financial structure as it is also "the key to economic growth and development" (Douglas, 2008, p. 3). It stabilizes the financial system and ensures the efficiency of fund flow. As a result, a sound and solid banking system are fundamental to a country's well-being, whereas instability in the system is likely to lead financial crisis with adverse outcomes and impose a burden on the governments and individuals.

2.4.1. Banking Stability in BRICS

In the context of banking stability and BRICS, Kregel (2009) acknowledges the success of BRICS in alternative credit flows aiding financial stability and development, and Sen (as cited in Ntarmah et al., 2019) emphasizes the pivotal role of financial institutions specific to BRICS, for instance, "New Development Bank, Asian Infrastructure Investment Bank, the BRICS-led Contingency Reserve Fund and Silk Road projects" empowering BRICS internal financial structure. The stability in BRICS countries' financial structures is also reported to respond to any financial shock or instability rather well in case of decline and crisis in global trade (Kregel, 2009). This is also emphasized by Rahman et al. (2017) as during the global financial crisis of 2007 and 2009, BRICS managed to conserve bank net interest margins and bank equity ratios, and the BRICS banking sector was minimally impacted by the adverse effects of global crisis (Jacobs and Rossem, 2014).

Comparing BRICS and G7, Oredegbe (2022, p.23) concludes that "there is room for more competition in the industry" in BRICS countries. Moreover, profitability as an indicator of banking stability impacts two blocks differently as "the effect is insignificant in BRICS, and it is positive and significant in G7". These findings indicate that in the G7 high profitability is required for improved stability; however, BRICS may benefit from reaching higher profitability with limited impacts. For example, Oredegbe (2022) suggests that efficiency is more important for BRICS, and impairments in financial efficacy are more likely to lead to a greater adverse outcome of stability in BRICS than in G7. Followingly, capitalization is observed to have a much more fundamental position in BRICS regarding banking sector stability. Finally, different from G7, economic growth enhances the stability in BRICS, resulting in the implementation of regulations with a focus on strengthening the capacity of banks.

3. METHODOLOGY

This chapter presents a brief overview of the bibliometric analysis and the tools and data utilized in the study. Following the review of related literature on bibliometric analysis, the data collection and processing procedures are explained. After that, the analysis tool, the Bibliometrix package for R programming language, is introduced.

3.1. Bibliometric Analysis

The bibliometric analysis consists of various tools enabling the evaluation of the research question described in the scientific literature. Through bibliometric tools, it is possible to reveal the common conceptual framework of the topic and the most cited authors and institutions by investigating the most relevant publications. The bibliometric analysis comprises other various analytic techniques such as context and document analysis, discourse analysis etc. Thus, an in-depth investigation of keywords or content words from various parts of a study will help to identify trends related to the subject in question.

It is known that literature reviews are of paramount importance in academic research combining the existing knowledge of interest with the future prospects in the field (Cropanzano, 2009; Kunisch et al., 2018). Likewise, researchers collect information and evidence on the issue or the topic they are investigating to form and base their hypothesis. Conventionally, the narrative of literature is expected to be fully representative of any prior research or study in a hierarchy reflecting the exponentially expanding nature of academia. In this regard, keywords or content words may be the traces of the conceptual framework the research is constructed or the clues to insights the authors aim to emphasize.

Bibliometric analysis is a quantitative approach to analyze academic publications with a set of statistical techniques (Zhong et al., 2016), and being a quantitative technique ensures the bibliometric studies' neutrality and objectivity (Nerur et al., 2008). Correspondingly, these studies provide insights into the growth of the literature in focus and reflect the flow of knowledge in a given specific period (Raan, 2005). To do so, researchers have access to various analytic tools within the frame of bibliometrics, for instance, citation and co-citation analysis, investigation of bibliographic overlaps, and keyword analysis.

Mapping of citation network reveals the intellectual interrelatedness of researchers' interaction with the cited publications (Peris et al., 2018). Therefore, it observes the collaboration patterns among authors, trends in different publications, and how concepts included in these publications are related to each other. Analysis of bibliographic overlaps also indicates the academic circle of researchers sharing a common goal. Furthermore, it is possible to identify countries with the highest interest in a topic and the likely source that is responsible for such an interest.

Semantic mapping of keywords analysis provides an in-depth view of the publications. Naturally, keywords serve as brief clues to the topic of interest and highlight the study's context and direction. In other terms, contextual analysis of keywords identifies frequency-based metrics showing the phenomenal issues studied within the field. Finally, "keywords represent the author's opinion of the three to five (or so) most important words in their articles" (Pesta et al., 2018, p.1).

Finally, "the bibliometric analysis offers a useful tool to shift from micro (one publication, scientist, or institute) level to macro (national or global) level…" (Shi et al., 2020, p.2). Therefore, it has the potential to provide a systematic review of related literature and highlight common trends and highly influential topics. This study utilized the freely available R programming language package Bibliometrix (Aria and Cuccurullo, 2017) to conduct a bibliometric analysis of the data collected from Web of Science (WOS) and Scopus bibliographic databases about BRICS countries and banking stability through keyword analysis.

3.2. Data Collection

Since the study is focused on BRICS countries and banking systems as well as banking stability, we defined keywords on WOS and Scopus as "(ALL=(brics)) AND ALL=(banking stability)". Only the studies included in the fields of "*Economics, Business, International Relations, Management and Political Science*" were added to the constructed database. There were two different databases, one collected from WOS with 33 documents and the other from Scopus with 46 documents. However, two duplicate documents were removed after merging two databases, 2 duplicate documents were removed, and the final data consisted of 77 documents.

3.3. Data Analysis

This study used the freely available R programming language package Bibliometrix (Aria and Cuccurullo, 2017). Descriptive analysis and network extraction were applied to the collected analysis. Through co-word analysis (Callon, Courtial, Turner, and Bauin, 1983), the most important words as framed by the author were investigated to study the conceptual structure of the research topic. Semantic mapping of collocated words was also provided to facilitate understanding of the studies' cognitive structure (Aria and Cuccurullo, 2017). This study applied semantic mapping to the title, authors' keyword, and abstract sections of studies in the database and presented information regarding authors, their affiliations, countries, impact factors of these studies, intellectual structure, and conceptual structure. Followingly, in the relevant sections, rather than unigrams (single word only), bigrams (two words) were analyzed for more meaningful data. It was possible to eliminate possible high-frequency terms that are recurrently used in academic studies. For the Conceptual Structure, the Info Map cluster algorithm was utilized with an association parameter for normalization of 0.1 Repulsion. Isolated nodes were removed, and the minimum number of Edges was set to 2. Finally, the threshold for the most productive authors was set to 20, while the number of the most cited countries was set to 10.

4. FINDINGS

This chapter initially presents the general breakdown of the final data analyzed in the study. Additionally, co-occurrence networks, thematic maps, and conceptual structures observed as the result of bibliometrics analysis are described in detail.

4.1. Overview of the Studies, Authors, and Citation Profiles

As a result of bibliographic scanning, 77 studies were identified in the given indexes from 66 different sources. Since the concept of BRICS is relatively recent, the period is limited to the years 2012 and 2022, as the oldest study was published in 2012, and the latest was in 2020 over the scanned databases. Table 4.1 below shows the general breakdown of the studies.

Table 4.1. General Breakdown of the Studies

Description	Results
Timespan	2012:2022
Sources (Journals, Books, etc)	66
Total Number of Documents	77
Annual Growth Rate %	31.1
Document Average Age	2.51
Average citations per doc	6.649
References	6287

In Table 4.1, the annual growth rate of the studies in focus is approximately 31%, which indicates that almost one-third of the previous years' studies have been published on top of the previous year since 2012. Additionally, considering the average document age, 2.51, and average citation per doc, 6.649, it is seen that there is a growing interest in the concept of BRICS. Finally, it is worth noting that, holistically, BRICS is a new topic; likely, a body of search is already available on the founding members of the BRICS as indicated by the overall number of references.

Table 4.2. Breakdown of Authors and Document Types

Description	Results
Authors	169
Authors of single-authored docs	17
Single-authored docs	20
Co-Authors per Doc	2.42
International co-authorships %	10.39
Article	71
Book	3
Book Chapter	2
Proceeding Paper	1

In Table 4.2, it is shown that there are a total of 169 authors of 77 documents, 71 of which are research articles, three books, two book chapters, and one proceeding paper. Also, roughly one-fifth of all documents are single-authored, and for the remaining documents, the average co-author per document is 2.42. Finally, approximately 11% of all documents were published with international co-authorship. Despite the relatively higher number of authors due to the co-authoring, the total number of studies is rather low.

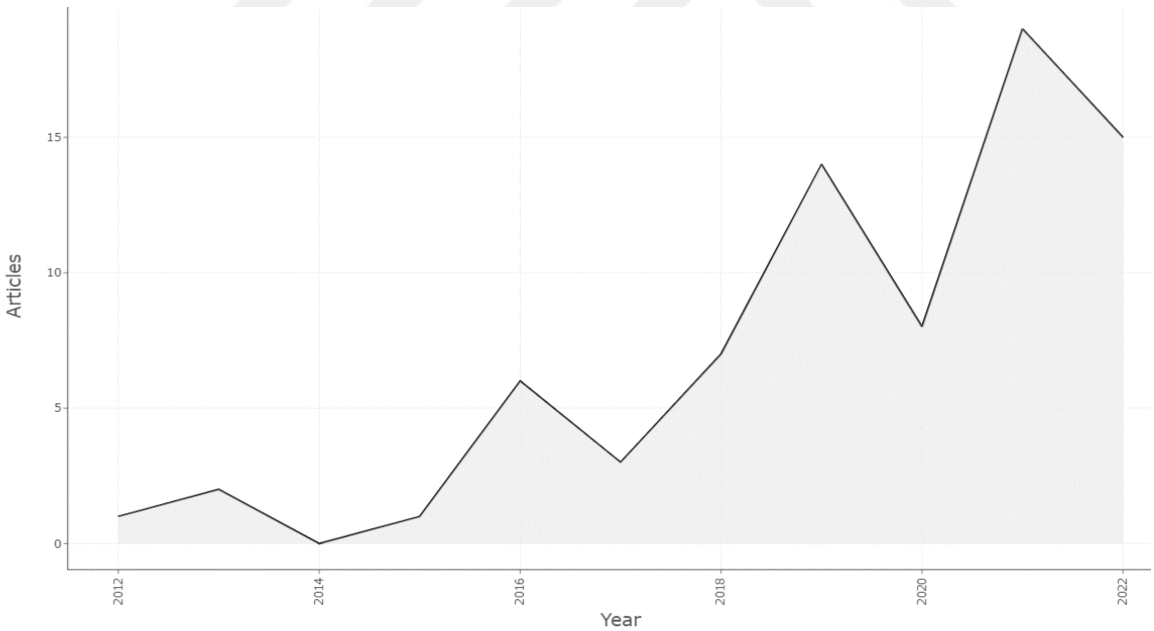

Figure 4.1. Annual Scientific Production on BRICS and Banking Stability

Figure 4.1, displays a slight fluctuation between years, yet there is a gradual increase in the number of studies from 2012 to 2020. In 2021 the scientific production reached its peak point. The total number of studies was multiplied seven folds until 2021. Despite a slight decrease in

2020. All in all, the common interest in topics of BRICS and banking stability started in 2014 after dipping and boosted onwards

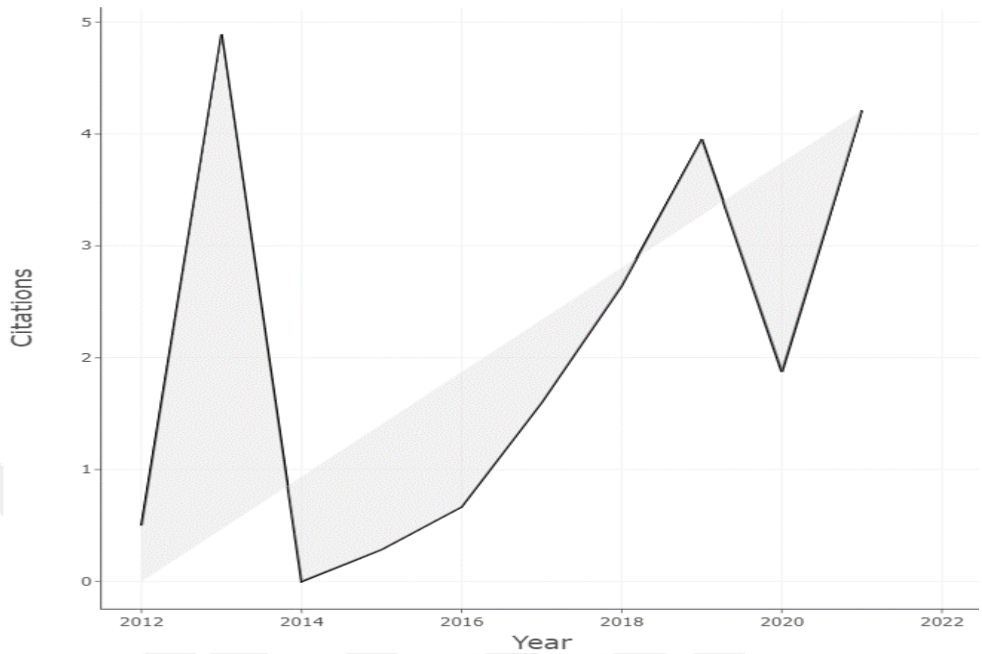

Figure 4.2. Average Citation Per Year on BRICS and Banking Stability

In parallel with the previous findings of annual scientific production, the least number of citations was observed in 2014, when the number of studies was also reached bottom line. However, in the following years, in parallel with the growing number of studies, the total number of citations was also observed to increase. Nonetheless, it reached its peak point in the year 2012. In the last three years, figures fluctuated sharply, as the number of citations dropped to its values in 2013 first, there is a gradual in from 2021 and onwards.

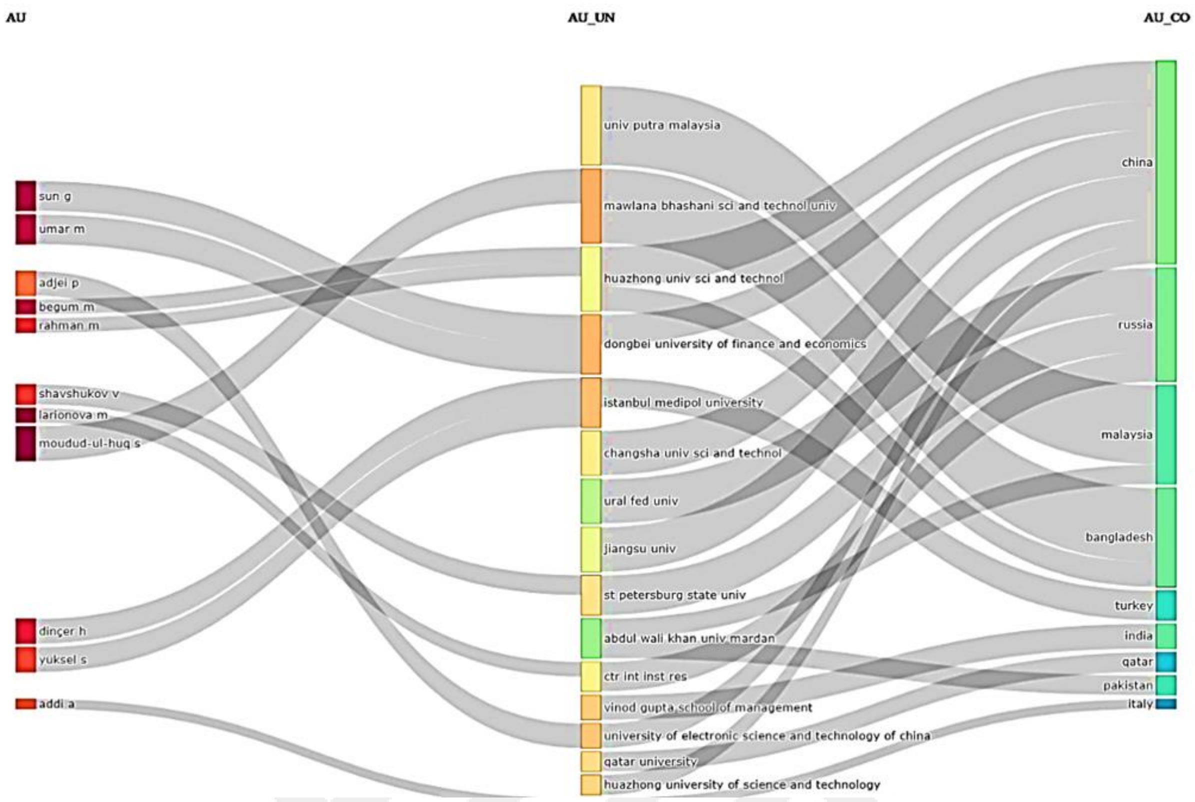

Figure 4.3. Three-Field Plot of Authors, Affiliations, and Countries

Figure 4.3, presents the most productive authors on the topic along with their affiliations and countries based on the threshold of the top 20 countries, authors, and affiliations. The majority of research was published by authors affiliated with China-based universities, which was followed by Russia. However, what is more interesting is that these figures were followed by Malaysia and Bangladesh, respectively. Also, despite studies from Turkey, India, Qatar, and Pakistan, there is only one study from a European country that is Italy. Moreover, no particular studies of authors affiliated with the USA-based university were observed in the top 20 studies. However, these figures represent only the productivity of authors based on affiliations and countries. The influential status of these studies may change regarding the total number of citations authors received.

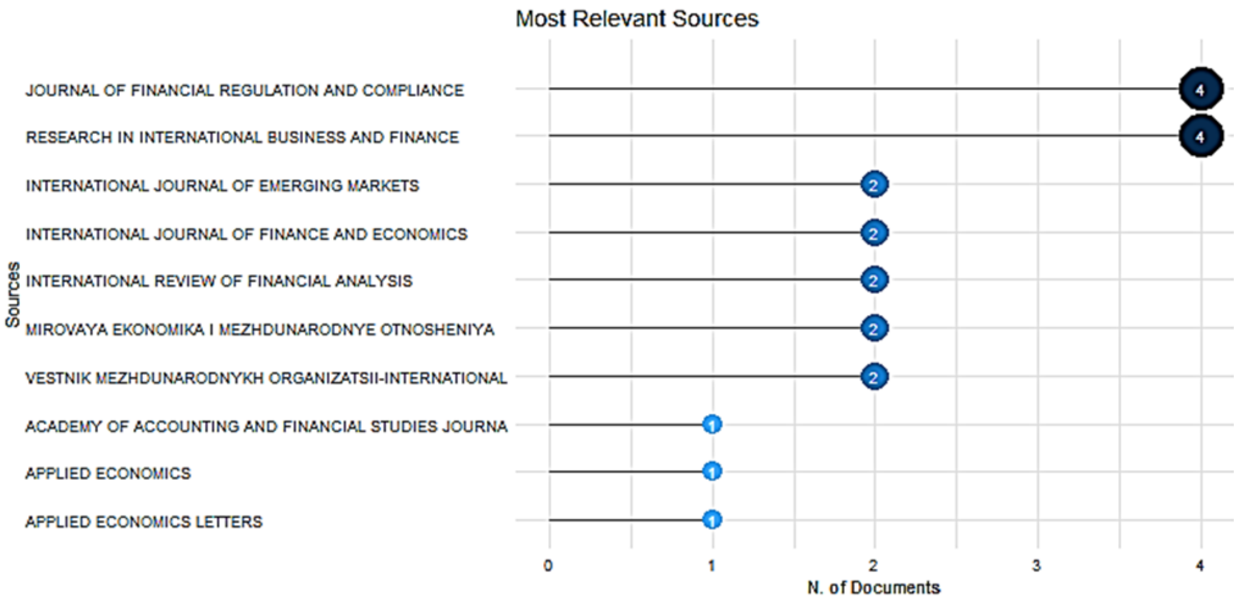

Figure 4.4. The Most Relevant Sources on the Topics of BRICS and Banking Stability

Figure 4.4. of the 66 journals, the most relevant ones with the topic in question were provided. Journal of Financial Regulation and Compliance and Research in International Business and Finance have the highest numbers of articles on BRICS and banking stability. Despite the fact that there is only one article in the last three journals, the most relevant ones, according to the result in Figure 5.

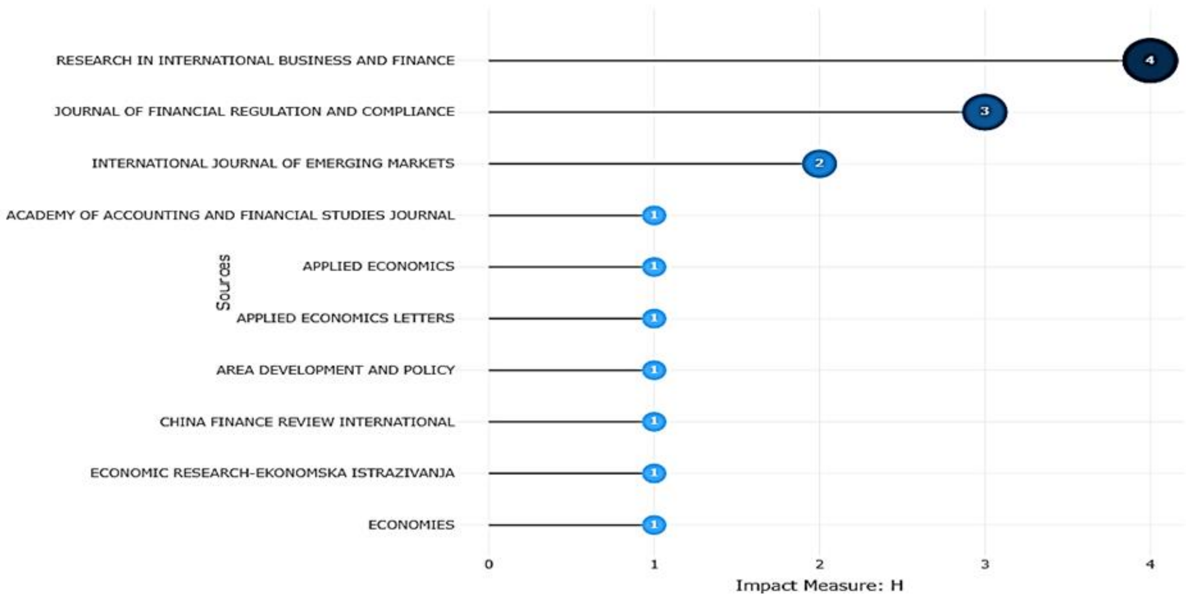

Figure 4.5. Sources with the most Local Impact on the Topics of BRICS and Banking Stability

Figure 4.5 represents the sources with the highest local impact based on Hirsch-index (h-index) values (Hirsch, 2005). The h-index is the indicator of the importance of cumulative research impact and its range over the field. Therefore, the source with the highest impact is the journal "Research in International Business and Finance", followed by "Journal of Financial Regulation and Compliance and "International Journal of Emerging Markets".

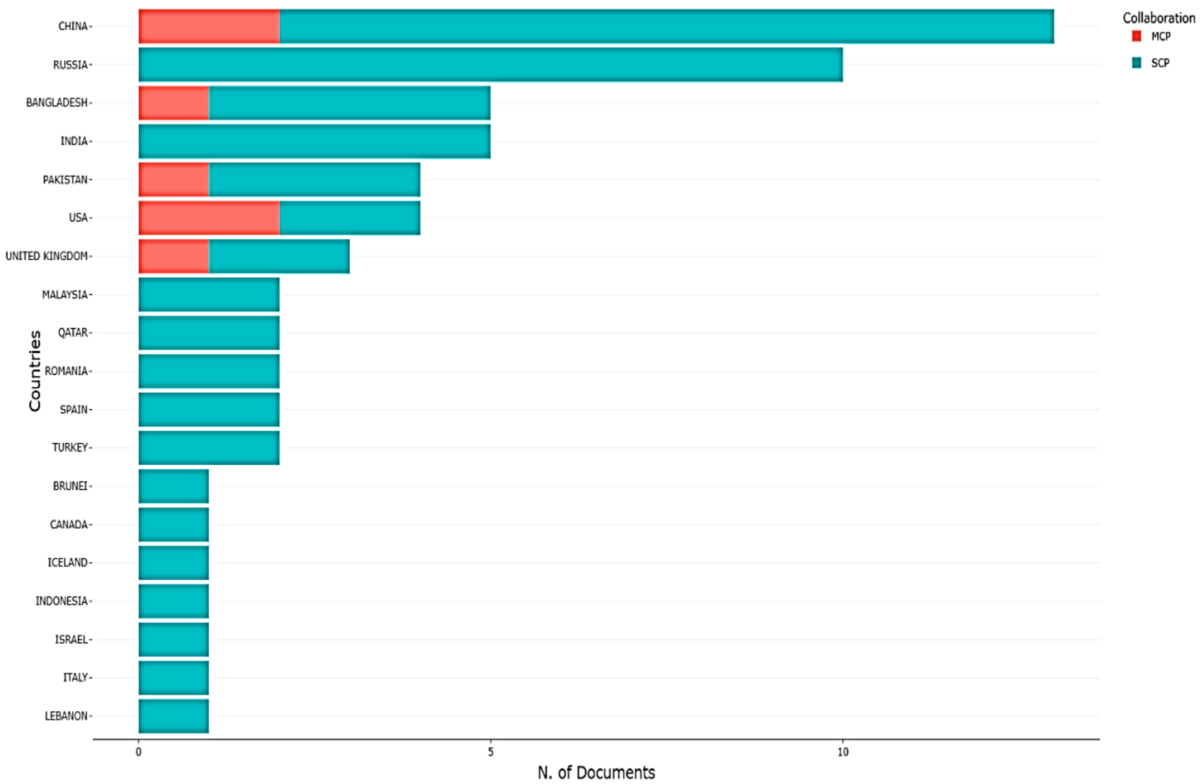

Figure 4.6. Distribution of Corresponding Authors' Countries

Figure 4.6 reveals the numbers of corresponding authors per country. This information is provided in two categories; single country publications (SCP) and multiple country publications (MCP). To begin with, in terms of overall contribution, China ranks first, indicating the prime interest in China towards BRICS and banking stability. Likewise, China has the highest number of MCP, revealing patterns of inter-country collaboration. China is followed by Russia; however, publications of Russia-based authors were all restricted to intra country studies. Third in row, Bangladesh-based authors are among the ones with the highest contribution, followed by India and Pakistan, respectively. On the other hand, some studies were of authors from Western countries, including the United States, the United Kingdom, Canada, and other European countries such as Spain, Romania, and Italy.

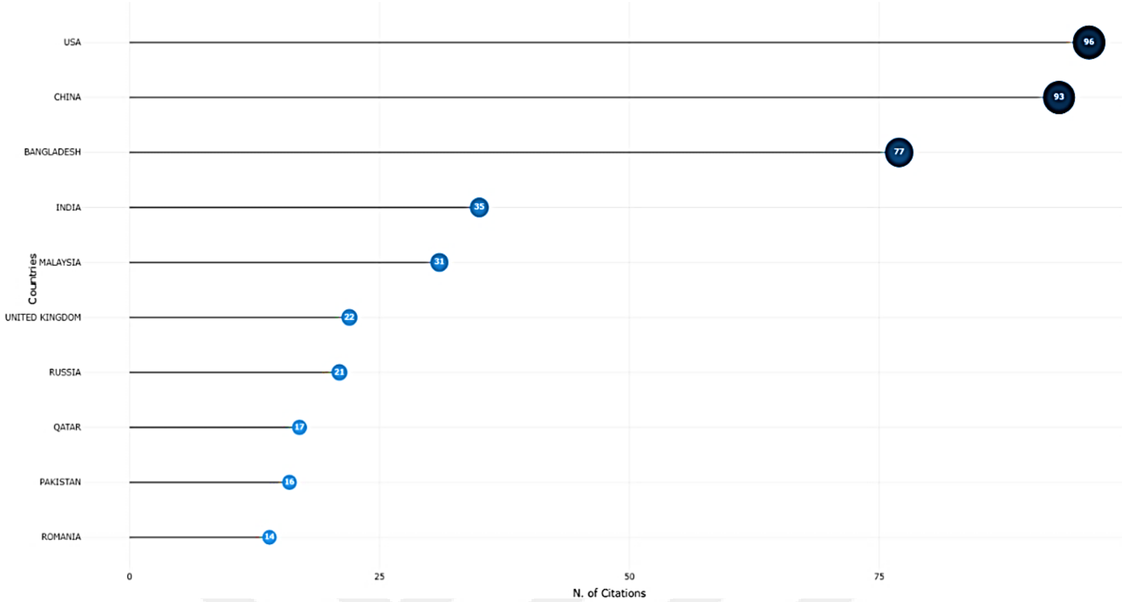

Figure 4.7. Countries with the Highest Number of Citations

Studies of the USA-based authors received the highest number of citations, even outnumbering China, which provided more publications than others. The figure for China closely followed the USA revealing China has the second highest impact. In parallel with Figure 4.6, authors from Bangladesh ranked third in the overall number of citations. One major finding is that, despite a body of research from Russia, their cumulative impact in terms of the number of citations is relatively low, even falling behind India and Malaysia, whose studies are also based on intra-country collaboration. It is worth noting that although there are roughly four authors affiliated with USA-based universities, these studies received the highest number of citations, average 24 citations per document, indicating the influential status of these studies.

So far, it is observed that there has been a growing interest in the topic of BRICS and banking stability since 2014. It is clearly seen that China is the most influential country of all. One interesting fact is that despite a body of research from Russia and Russian authors, as seen in Figure 4.3 and Figure 4.6 they have little added value to the overall impact in terms of citation numbers.

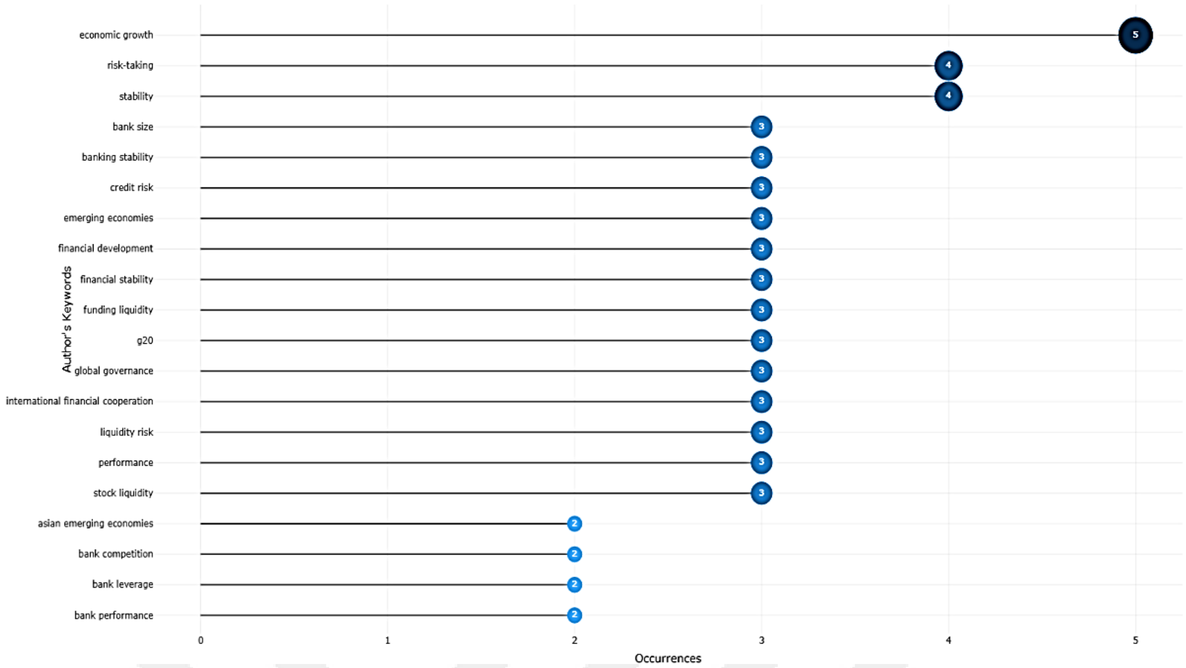

Figure 4.8. The most Frequent Words included in Author's Keywords

Figure 4.8 shows the most frequent words. *Economic growth* ranks first, followed by *risk-taking* and *stability*. The authors also highlighted other concepts in relation to the topic, such as *credit risk*, *emerging economies,* and Asian emerging economies. Additionally, there are groups of clusters focusing on individual concepts such as terms *G20*, *global governance,* and *international financial cooperation* forming one cluster, while *liquidity risk*, *performance* and *stock liquidity* forming another. Finally, the last group of keywords centered around the major theme *bank* included concepts such as *bank competition*, *bank leverage*, and *bank performance*.

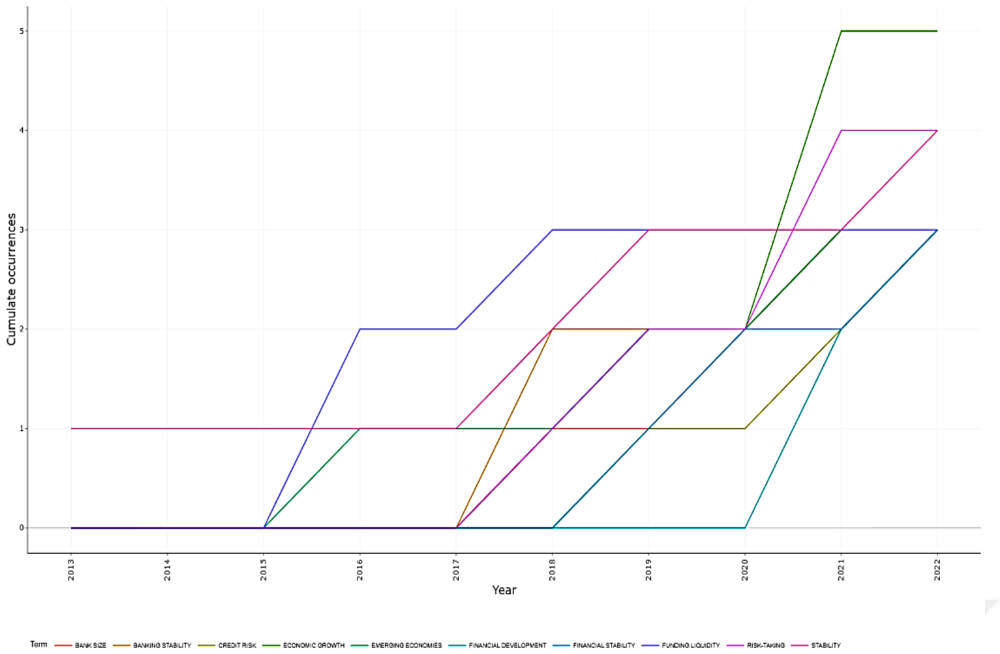

Figure 4.9. Trending Words in the Author's Keywords per Year

Figure 4.9 represents cumulative occurrences of keywords included in the author's keywords between 2013 and 2022. The concept of stability has been a constant focus since 2013. Additionally, the terms *economic growth* and *funding liquidity* have been popularized since 2015 when they reached their peak points in 2022. In 2017, two terms *credit risk* and *risk taking* emerged among the most common words. More recently, particularly in 2018 and in 2020, two corelated concepts *financial development and financial stability* were introduced and have gained much popularity. Now, we observe four major themes with higher cumulative occurrences than others, which are *economic growth*, *risk taking*, *stability (financial stability)* and *financial development.*

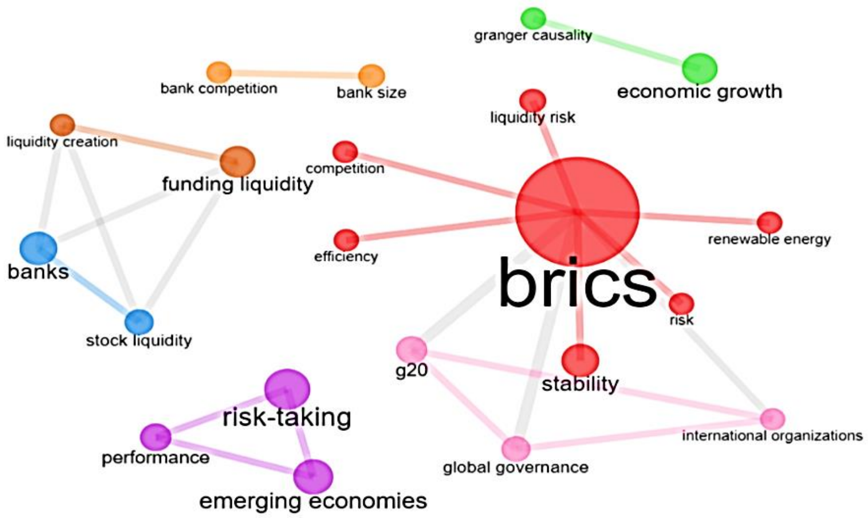

Figure 4.10. Co-occurrence Network of Author's Keywords

Having the term BRICS as the center node, Figure 10 reveals network collocated concepts and clusters, where colors codify individual themes and the size of nodes represents saliency weight. First, the term BRICS was mentioned along with the term *stability*, which carries the highest association score. Other terms were *competition*, *liquidity risk*, *efficiency*, and *renewable energy*. In another cluster, phrases such as *risk-taking*, *performance*, and *emerging economies* were emerged as related to each other. Also, the term *banks* was associated with *stock liquidity*, *liquidity creation*, and *funding liquidity*. Finally, we observed that authors viewed *bank competition* as related to *bank size* within the frame of BRICS and banking stability.

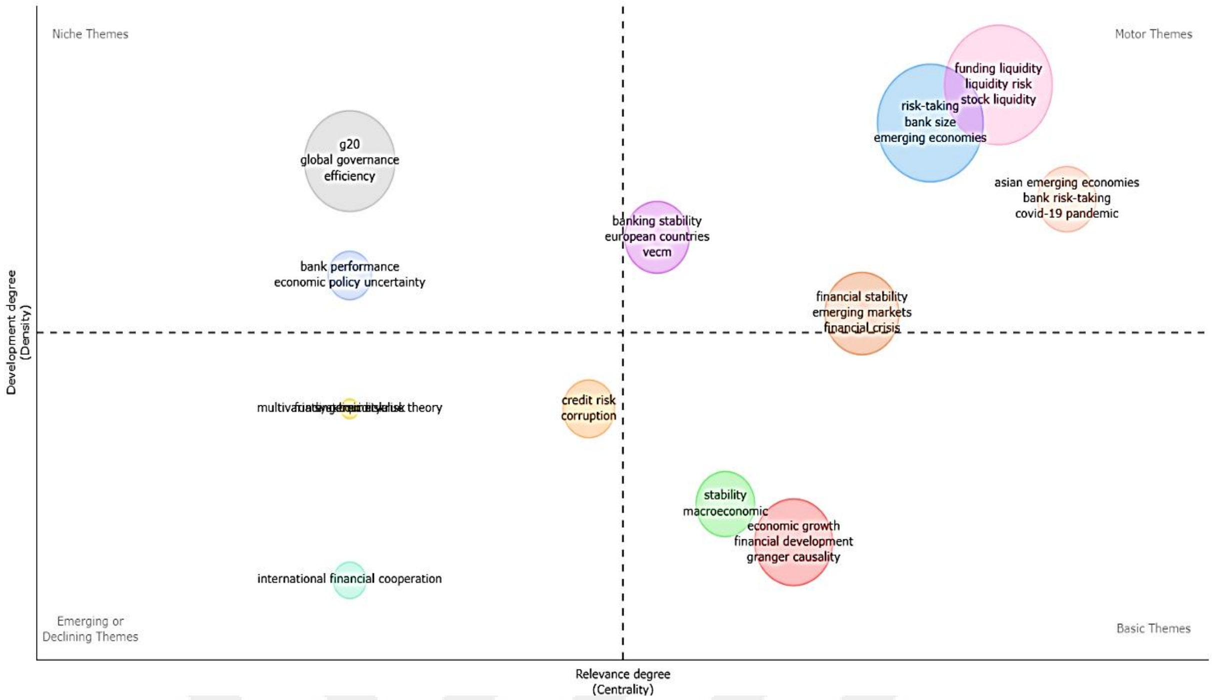

Figure 4.11. Thematic Map Analysis of Author's Keywords

Finally, based on co-occurring words, a thematic map consists of four themes: *Niche Themes, Motor Themes, Emerging or Declining Themes,* and *Basic Themes.* The upper-left quadrant shows the Niche Themes i.e., Specialized Themes as follows *G20, Global Governance* and *Efficiency* in one cluster, and *bank performance and economic policy uncertainty* in the other. However, despite being well developed, these themes have internal ties with the topic in question yet have little significance regarding external relations. In the upper right quadrant, Motor Themes with strong centrality and high density present the emerging status of research and are of paramount importance for the focus field's structure. To begin with, five clusters emerged in this section. The first cluster with the least density consists of themes *funding liquidity, liquidity risk, stock liquidity,* and it slightly overlapped with the second cluster of themes, including *risk-taking, bank size,* and *emerging economies.* The third cluster also presented a similar theme to that of the second one, however a more specialized one which is *Asian emerging economies.* In addition, other themes; for instance, *bank risk taking,* and *covid-19 pandemic* were also occurred in this cluster. Next one is with higher density and centrality, the fourth cluster consisted of themes *banking stability, European countries* and *VECM* with a focus on the quantitative analysis. The final cluster listed in the Motor Themes included the themes of *financial stability, emerging markets,* and *financial crisis.* Themes in the lower-right quadrant are referred to as important for the field yet not very well-developed. Themes in this part are *stability* and *macroeconomic*s in the first cluster with higher density, while economic growth, financial development, and granger causality in the other cluster with a relatively higher relevance score with the research field. Lastly, themes in the lower-left quadrant are interpreted as poorly developed and mostly marginal with low development degree and relevance. In other words, these themes are either recently emerging or disappearing and have the least significance for the field. Among these, in the first cluster, overlapped themes were *multivariate extreme value theory, renewable energy, systemic risk*, and *covid-19*; in the second cluster, it is *international financial cooperation* with similar values for density and centrality. At last, the final cluster in this quadrant consisted of credit risk and corruption themes.

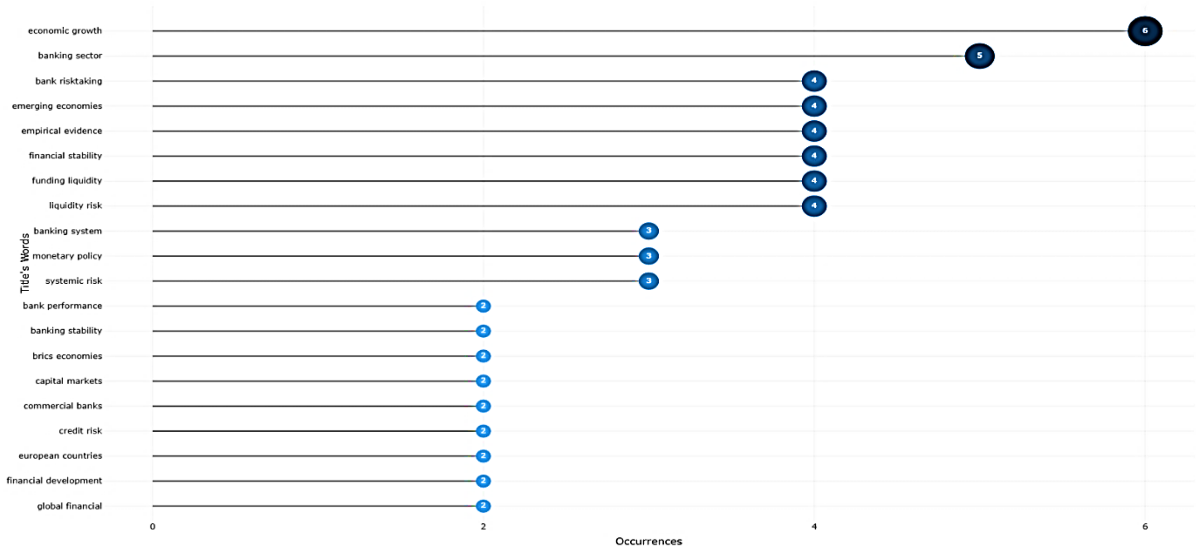

Figure 4.12. The most Frequent Words included in Titles of the Documents

In Figure 4.12, it is seen that highlighted terms are in parallel with author keywords. For instance, in both sections, *economic growth*, *banking sector* were among the highly emphasized terms. Furthermore, six terms had similar weights, including *bank risk-taking*, *emerging economies*, *empirical evidence*, *financial stability*, *funding liquidity*, and *liquidity risk.* The next group of words was *banking system, monetary policy*, and *systemic risk*. Finally, the last group of words was centered around the topic of banking, such as *bank performance*, *banking stability*, and *commercial banks*, as well as others.

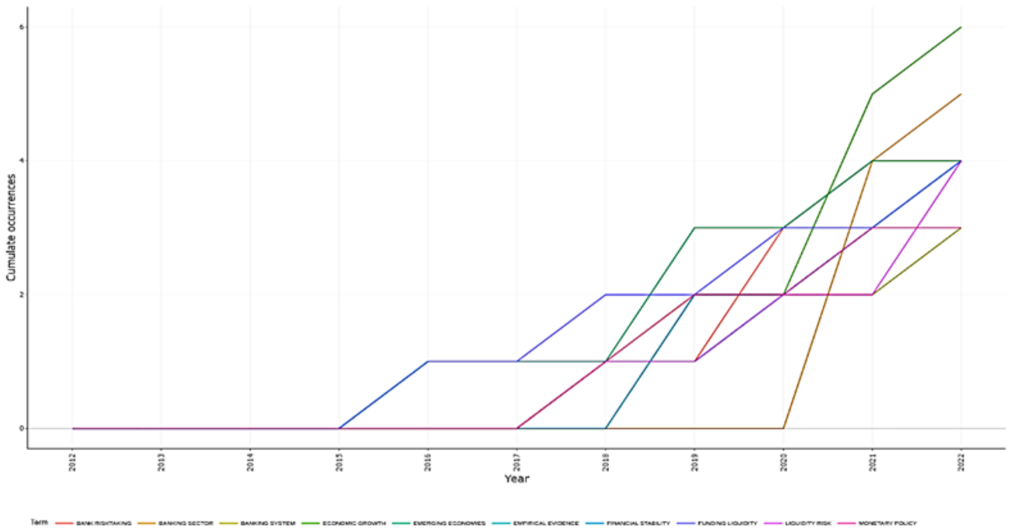

Figure 4.13. Trending Words in the Titles of Documents per Year

Considering word dynamics, the term with the highest cumulative number of occurrences was *economic growth*, followed by *banking sector* and *emerging economies*. In 2015, two terms, *funding liquidity,* and *emerging economies* were introduced and have gained much popularity in the following years. In 2017, *monetary policy* and 2018 *financial stability* were included in the titles. Since 2019, two major related themes, bank risk-taking, and liquidity risk, have received much attention, and in recent years, the focus of attention has shifted towards the concept of *banking sector*, a term not mentioned in the previous years.

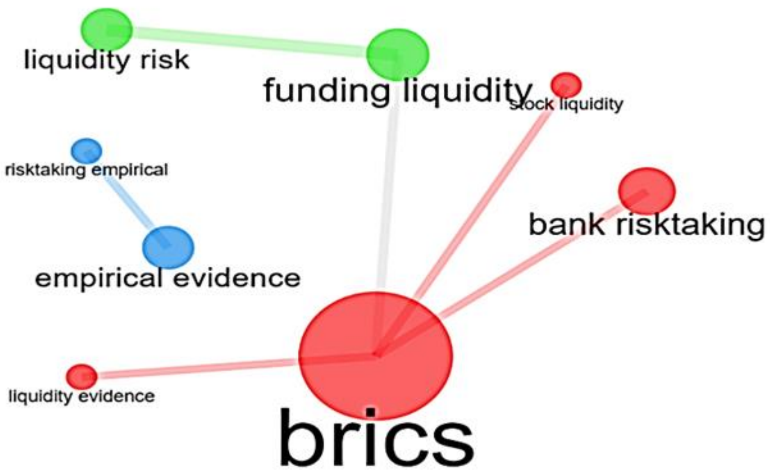

Figure 4.14. Co-occurrence Network of Words in the Titles of Documents

Figure 4.14 displays the co-occurrence network of words in the titles of documents, taking *BRICS* as the central node, the first group of collocated words is *bank risk-taking*, *stock liquidity*, and *liquidity evidence*. Next, it is observed that two terms *liquidity risk* and *funding liquidity* are associated. Finally, the terms risk taking and empirical evidence are associated in the third group.

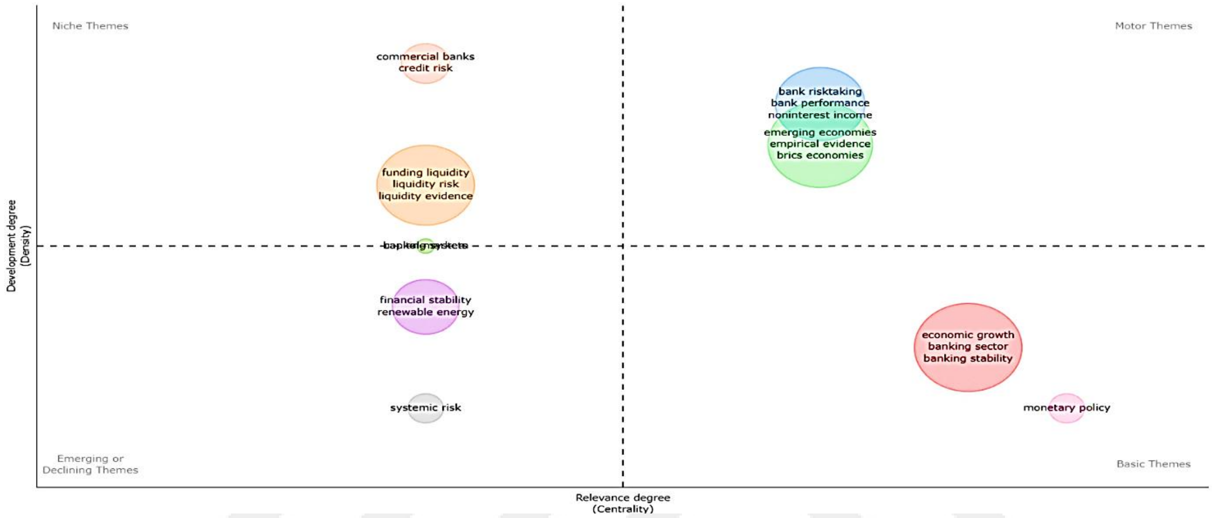

Figure 4.15. Thematic Map Analysis of Words in the Titles of Documents

Figure 4.15 presents thematic map analysis of words in the titles of documents with the highest density and relevance in the topic of BRICS and banking stability. In the upper-left quadrant, *commercial banks* and *credit risk* are in the first cluster of specialized themes. Next, *funding liquidity, liquidity risk,* and *liquidity evidence* have a higher degree of relevance. Between Niche Themes and Emerging/Declining Themes, two terms, *banking system* and *capital markets*, overlap. Also, in the lower-left quadrant, the last theme was *systemic risk*. Furthermore, in Motor Themes, three terms are grouped with higher density in the right upper quadrant: *bank risk-taking*, *bank performance,* and *noninterest income.* In the second group, these terms are *emerging economies*, *empirical evidence*, and *BRICS economies* with higher centrality values. Therefore, the most significant themes were the emerging status of BRICS and their banks. Lastly, in the final group, in the right lower quadrant, themes that are mostly relevant to the research field yet not well-developed consisted of *economic growth*, *banking sector*, and *banking stability* in the first cluster with a higher development degree. In contrast, *monetary policy* in the second cluster that is more relevant to the frame of BRICS and banking stability.

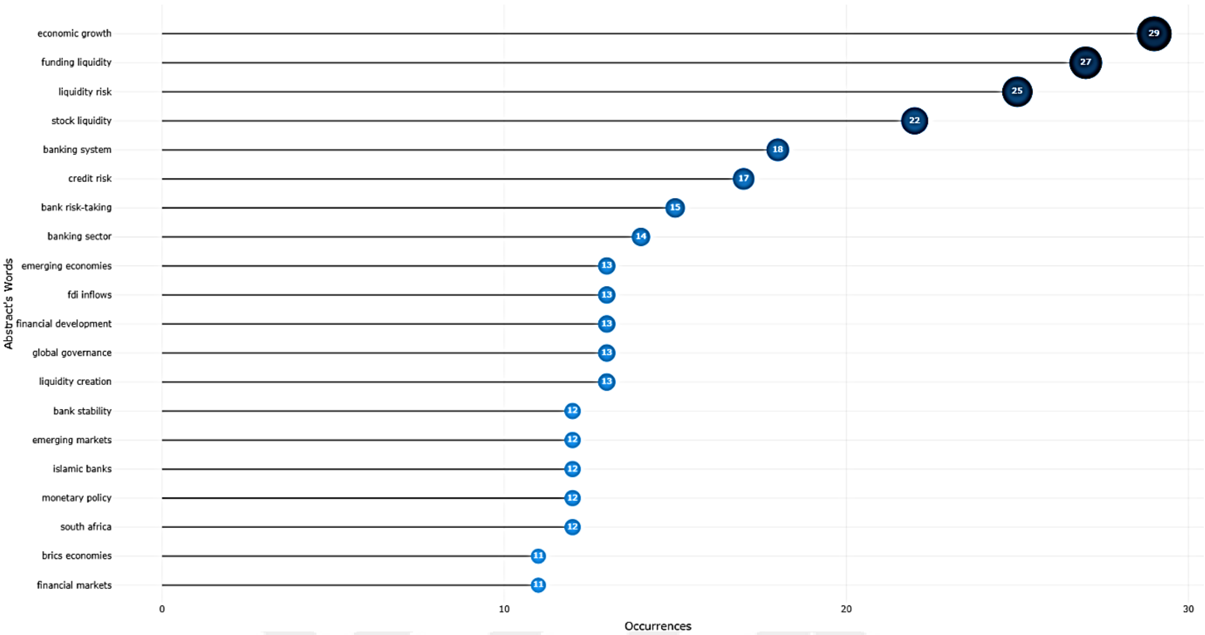

Figure 4.16. The most Frequent Words included in Abstract of the Documents

In Figure 4.16, it is observed that there is a strong emphasis on *economic growth*, *funding liquidity*, and *liquidity risk*, followed by the concept of *stock liquidity* in the abstract sections, which is the summary of the studies on focus. Regarding the theme of *risk*, terms such as *credit risk* and *bank risk-taking* were recurrent words parallel with the previous figures. On the other hand, under the theme *bank*, the terms *banking system*, *banking sector*, and *bank stability* are fore fronted. Additionally, one distinctive term, *Islamic Banks* is also emerged for the first time. Subsequently, the highly emphasized words with positive connotations consisted of *emerging economies*, *emerging markets*, *financial markets*, and *financial development*. Similar to keywords observed in titles, the term *monetary policy* is recurrently asserted related to the topic of BRICS and banking stability.

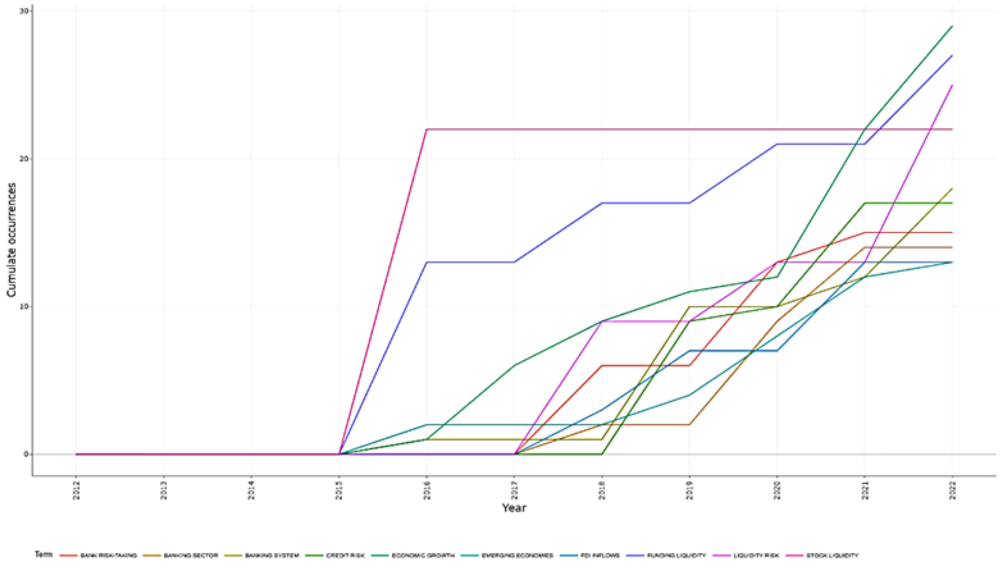

Figure 4.17. Trending Words included in Abstract of the Documents

In terms of trending words in the abstract, as figure 17 exhibits, the term *economic growth* has the highest number of cumulative occurrences. Indeed, the term was introduced in 2016 first and then became the major point of interest. Likewise, in 2015, three terms, namely, *stock liquidity*, *funding liquidity*, and *emerging economies*, were first mentioned; however, the initial concept of *stock liquidity* peaked in 2016 and remained dominant until recently. Secondly, the popularity of the *funding liquidity* has minor fluctuations through the years, yet it is still among the most popular ones. Final term, *emerging economies* made its first major breakdown in 2019 and sharply raised its popularity in the following years. Meanwhile, in 2017 five major interrelated terms were observed in the abstracts, which were *liquidity risk*, *bank risk-taking*, *FDI inflows*, *banking sector*, and *credit risk*. However, in 2021 only the first term, *liquidity risk* gained much space and reached the highest rank in 2022, and in the same year, the final term, *credit risk* outnumbered the remaining three.

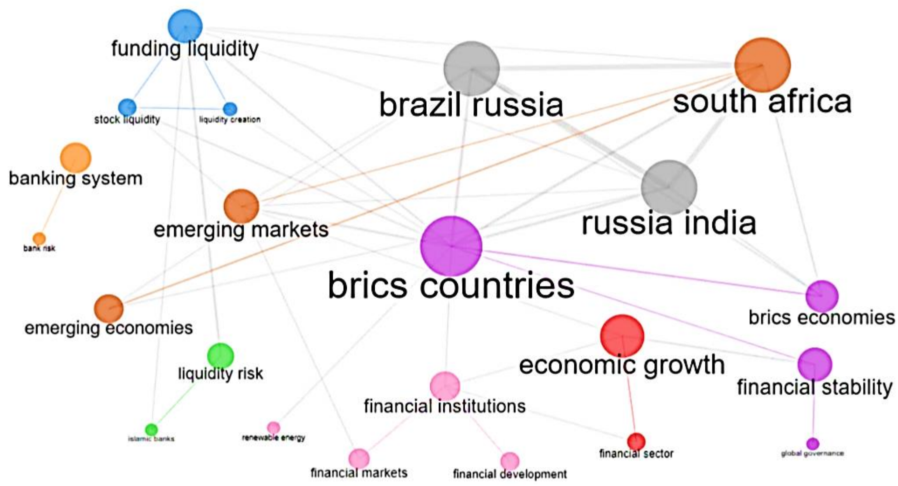

Figure 4.18. Co-occurrence Network Analysis of Keywords in Abstracts

Figure 4.18 shows how influential terms stated in the abstract are interrelated, taking *BRICS countries* in the center. The central node is first associated with two other nodes which are *BRICS economics* and *financial stability,* the latter of which then is associated with *global governance.* Furthermore, the major node was interrelated to other minor nodes such *financial institutions, emerging markets, funding liquidity.* Lastly, in the same section, three countries, *Brazil, Russia,* and *India* are emphasized. One significant observation is the pairings of Brazil – Russia and Russia – India. The latter pair is then also connected to the *South Africa,* which is not observed in the previous analyses. The minor node with *funding liquidity* is connected to *stock liquidity* and *liquidity creation,* while *financial institutions* is associated with *financial markets* and *financial development*. Distinctly, two terms *emerging markets* and *emerging economies* are also clustered together with *South Africa.* Followingly, the minor node of *liquidity risk* is connected to the bigger node of *funding liquidity* and to a smaller node of *Islamic Banks.* Next, *Economic growth* is related to *financial sector* and *financial stability*. Finally, there is one isolated cluster included *banking system* and *bank risk.*

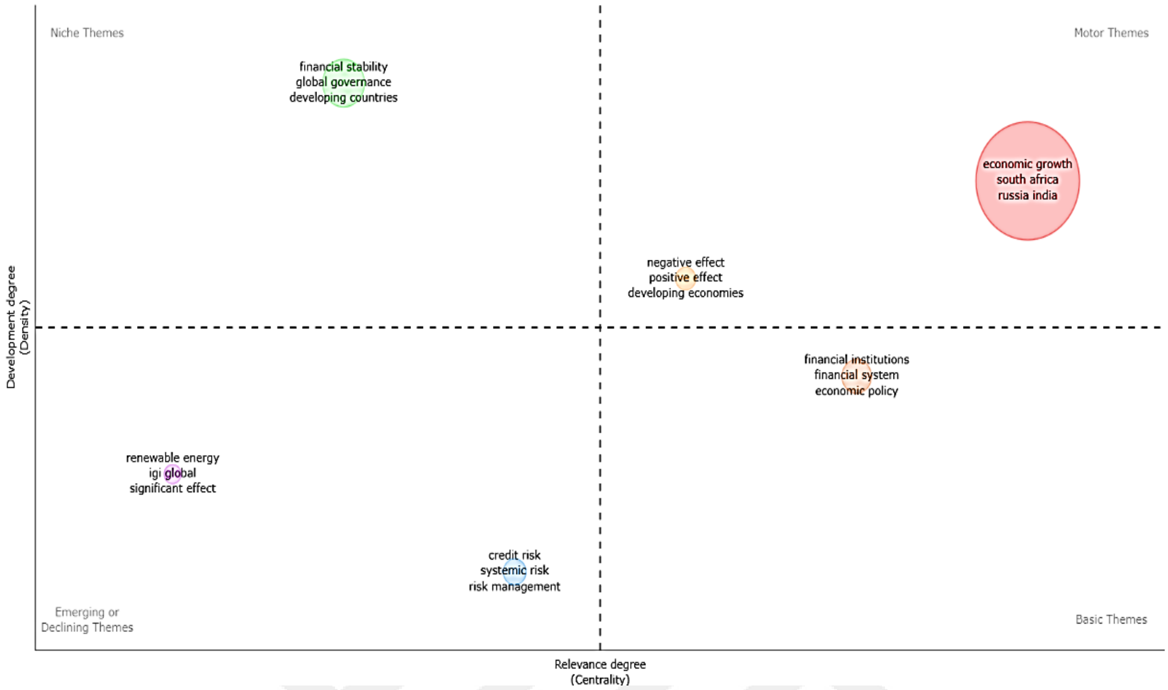

Figure 4.19. **Thematic Map Analysis of Words in the Abstracts of Documents**

Thematic map analysis in Figure 4.19 indicates how co-occurring keywords, as observed in Figure 4.18, also form themes treated in the abstracts. First, in the upper-left quadrant of Niche Themes, one cluster included three themes: *financial stability*, *global governance*, and *developing countries*. Niche Themes are the ones with the least impact and influence on the research field and the lowest figures of density and centrality. In the upper-right quadrant of Motor Themes, three themes, *economic growth*, *South Africa*, and *Russia-India* formed one big cluster with the highest figure of density, indicating the major significant themes. In the same section, another cluster is formed with the prominent themes of *negative effect*, *positive effect*, and *developing countries*. In the lower-right part of Basic Themes, recurrent themes, one cluster was formed with the terms such as *financial institutions*, *financial system*, and *economic policy*. Lastly, regarding emerging/disappearing themes, two individual clusters revealed interconnections of renewable energy, IGI global, and significant effect with a higher density on the left cluster. At the same time, the other consisted of *credit risk*, *systemic risk*, and *risk management* with a higher value of relevance to the research field.

5. DISCUSSION

This study investigated banking stability with the framework of BRICS countries and answered the following research questions.

RQ 1: What are the most commonly investigated topics in the literature regarding BRICS and their banking stability?

The study investigated three subsections of the research papers included in the combined bibliographic data of WOS and Scopus: author keywords, titles, and abstract. Initially, it is observed that the most common topics in the titles were *economic growth, bank performance, growth, emerge* and *create* as well as *efficiency, stability, risk,* and *competition*. Next, regarding the titles, the most prevalent ones included *economic growth, banking sector, bank risk taking,* and *liquidity risk*. Finally, in the abstracts, these topics consisted of words such *as economic growth, funding liquidity, liquidity risk,* and *stock liquidity*.

RQ 2: What are the most influential studies in the framework of BRICS and their banking stability?

Ban's (2012) paper titled "Brazil's liberal neo-developmentalism: New paradigm or edited orthodoxy?" received the highest number of global citations (n = 74). Then, Moudud-Ul-Huq's (2019) paper "Banks' capital buffers, risk, and efficiency in emerging economies: Are they counter-cyclical?" was the second study with a total number of 32 citations. Other studies with a higher number of citations included Economou's (2019) "Economic freedom and asymmetric crisis effects on FDI inflows: The case of four South European economies" and Jayakumar's (2018) "Banking competition, banking stability, and economic growth: Are feedback effects at work?" with a total of 29 citations each. Finally, among the top five most influential studies, Moudud-Ul-Huq's (2020) "Does bank competition matter for performance and risk-taking? Empirical evidence from BRICS countries" totaled 25 citations.

RQ 3: Who are the most influential authors and their foci of interest regarding BRICS and their banking stability?

Considering the most influential authors on BRICS, of the top ten, Moudud-Ul-Huq has the highest number of articles (n = 4), followed by Larionova, "Sun" and "Umar", each with three articles. Next, the remaining six authors, namely, Ashraf, Begüm, Bouri, Dinçer, Qin and

Rahman, publish only two articles. Furthermore, Moudud-Ul-Huq is the most influential author with the highest H-Index (3), and the total number of citations (73). On the other hand, despite fewer articles, both Ashraf and Begum, co-authors, ranked second with the same H-Index score (2) and a total number of citations (22). Studies of Moudud-Ul-Huq consist of keywords *bank competition, performance, risk-taking, bank diversification, and emerging economies* which are also among the most common words observed in the analyses in the study. Similarly, the keywords in Begum and Ashraf's articles also include identical keywords, such as *risk-taking* and *cost efficiency*. Nonetheless, studies of other authors with the highest number of articles consisting of the keyword are centered around the major theme of *liquidity*. Although there are more studies on other keywords, the most influential ones are focused on the major of theme *risk* and *risk-taking*.

There is a limited number of studies on the research field in question. However, it is expected since the concept of BRICS itself is relatively new. The study looked into two main databases, Web of Science and Scopus, and found 77 documents matching the defined keywords, 33 of all were from WOS, and 46 were from Scopus. Two duplicate studies were excluded from the bibliometrics analysis. The total documents consisted of 71 were journal articles, three books, two book chapters, and one proceeding paper. Also, there were a total of 169 authors, including co-authors. The number of single-authored documents was 20. International collaboration among those articles was merely 11%. As Table 4.2 displays clearly the ratio of studies was increased to one-third of the total studies indicating a growing interest on BRICS and banking stability in the recent years. These studies reached their peak points in 2021, which dipped in 2014. Similarly, the figure for cumulative citations supported this claim of interest in the topic in recent years. Regarding the citations, the highest number of citations were received between the years 2012 and 2014. This is likely due to the declaration stated in 4th BRICS summit held in India, where BRICS countries addressed the challenges in recovering from the global economic crisis, which is, as they stated, due to problems in the Euro zone. In the same declaration, IMF was mentioned for the first time, and BRICS called for a need of reform in the structure of IMF. In relation, the likelihood of founding a rival constitution, New Development Bank, was also proposed to support primarily BRICS countries development. Finally, the need for an expansion in the capital base of the World Bank and other multinational economic institutions was declared.

The most productive country on the topic is China, followed by Russia. However, there was only one Western country in the top 20 publications. In Figure 3, it was also seen that among the productive countries, Malaysia and Bangladesh ranked third and fourth, following Russia. It can be hypothesized that this was due to the interest of these countries in joining the union. A similar case was also revealed for other countries such as Turkey, Qatar, and Pakistan. However, these figures reflect only the productivity of authors from these countries. Nevertheless, given the threshold of the top 20, no studies from the USA occurred in the list. The low number of studies on BRICS and banking system in the Western countries may be due to western media's neglecting and rejecting of BRICS achievements (Stuenkel, 2014) or due to the common belief in the West that BRICS are no match in terms of economy and global dominance (Cox, 2012; Brutsch and Papa, 2013; Thakur, 2014; Nuruzzaman, 2020).

On the other hand, the most common journals in which related studies were published are primarily based on international finance and financial regulation, which are "Journal of Financial Regulation and Compliance" and "Research in International Business and Finance". Similarly, these journals are the most influential publications on the topic. Therefore, the priming of these journals indicates that the topic receives much attention from finance researchers. Followingly, as stated before, the most productive country is China, as seen in Figure 6. However, considering Figure 7, the USA is the most influential country based on the total number of citations and the average number of citations per document. This is interesting since there are only four documents included in the databases in question from the USA. In contrast, the total number of documents from China was four times more than the ones from the USA, which received the highest number of citations. On the other hand, the least interest was in studies from Russia, which ranked second in the total number of documents yet were not included in the list of the most influential ones.

Keyword analysis included investigating three subsections namely, Author's Keywords, Title and Abstract. First of all, the term *economic growth* was the most popular word in Author's Keywords, while the least popular one was *bank performance*. It was demonstrated that authors commonly primed keywords with positive connotations such as *growth*, *emerge* and *create*. They included relevant topics of *economies*, *liquidity,* and *stability*. Likewise, they mention other terms in cluster centered around the main frame of risk, creating a balanced view of BRICS and banking stability. Parallel findings were also found in the co-occurrence network analysis. The major node of BRICS is associated with terms *like efficiency, stability,* *risk,* and *competition,* while the node of risk-taking is related to *performance* and *emerging economies*. Similarly, the thematic map presented the major themes that emerged from the Author's Keywords and formed five major clusters of *liquidity, risk-taking, banking stability, emerging economies,* and *financial stability*. Additionally, similar themes had more interest in recent years compared to the terms of previous years, such as *bank size* and *risk-taking*.

Secondly, on the titles of the documents, the most frequent word was *economic growth*, similar to Author's keywords. However, the banking sector was the second most frequent one while financial development and global finance were the least frequent. Therefore, there was a common emphasis in keywords and titles on economic growth, while the balance view provided in the keywords remained in the titles. Likewise, *economic growth* and *banking sector* were the trending topics over the years with the inclusion of other themes of *bank risk taking* and *liquidity risk*. Also, the co-occurrence network demonstrated terms questioning the integrity of liquidity stated with *liquidity risk*, *empirical data for risk taking*, and *liquidity evidence*. The positive frame sustained with frequent words was therefore challenged with the inclusion of negative framed words. This is also evident in the trend per year, which is possibly due to a liquidity crisis as a result of the reduction in the overall trading volume started with the Covid-19 pandemic. Similar findings were also ensured in the thematic map as the two major clusters in the Motor Themes included words focusing on *bank risk-taking, bank performance,* and *emerging economic, empirical evidence*.

Finally, in the abstract of the documents, as it was the case in the two previous analyses, the term *economic growth* was the most frequent one. Other frequent terms included words related to liquidity, such as *funding liquidity, liquidity risk, stock liquidity*. These observations are in support of the previous claim that the emergence of liquidity crisis due to Covid-19 pandemic impacted studies changing their directions towards a more critical point. On the other hand, the least emphasized words were financial markets and BRICS economies. In the abstracts, two previously not mentioned terms, *South Africa* and *Islamic Banks*, emerged. Meanwhile, *economic growth* had the highest cumulative frequency over the years, followed by *funding liquidity*. Starting in 2015, stock liquidity has been the constant term recurrently frequent in the following years.

Co-occurrence analysis of abstracts also revealed new frames as associated in an interrelated network of nodes with similar importance. For instance, there were almost no isolated terms in the BRICS countries at the center. On the one hand, we observed the pairing of countries such Brazil – Russia and Russia – India, in return those two different clusters were associated with the major node of South Africa. This is interesting considering the majority of studies from China, yet it has rarely been mentioned. In a way, China was repulsed from the topic of interest. Likewise, the term BRICS economies were connected to above mentioned three clusters. Other significant observations include interconnectedness of *financial stability*, *economic growth*, *financial institutions*, which then was connected to node of *emerging markets* through *financial markets.* The nodes *emerging markets* and *economics were associated to major nodes of South Africa, indicating that* these frames primarily were intended for *South Africa*. A similar node, emerging markets, was associated with the main node of funding liquidity through stock liquidity, which in return also was connected to the biggest node of BRICS countries. Overall findings revealed a strong indication of South Africa as the major emerging market. In contrast, terms with negative connotations were mostly repulsed from countries, and other nodes yet were only related to the node of *funding liquidity*.

Finally, similar findings were observed in the thematic maps of abstracts as the Motor Themes covers two clusters, one of which comprised of three previously emerged terms, namely, *economic growth*, *South Africa*, *Russia-India* pairings. On the other, a similar node of terms consists of *negative-positive effect* and *developing economies*.

So far, it has been observed that, considering three subsections, the most widely primed term is *economic growth*. In the frame of BRICS and banking stability, various authors repeatedly fore fronted this theme regardless of affiliation and country. Therefore, the prominent theme of *economic growth* is of paramount importance not just from the perspective of BRICS but also as stated in Siddiqui (2016), such an economic growth is projected to impact global economies while also “reduce the dependence on the IMF and World Bank”. BRICS economy is also expected to reach a level of G7 in the near future (Hawksworth and Cookson, 2006) and continuous growth of emerging economies is more likely to alter the global economy on the long term (Radulescu et al., 2013) and the significance of these economies will be much more evident up to 2050 (Goldman Sachs, 2003).

On the other hand, the emerging terms present the opportunities and challenges BRICS are expected to face in the future. For instance, we observed emergence of the term *renewable energy* and *corruption/regulation* in the thematic maps analysis. Regarding the current status of Russian economy’s dependence on the oil, one possible prospect would be Russia’s looking for alternatives for reducing oil dependence. Similarly, *financial policy, stability* and *financial system* may be the reflections of China’s ongoing reforms of state-owned institutions and banks. Finally, the emphasis on the terms *emerging economies* and *emerging Asia* are the echoes of BRICS countries' ongoing development and their case of being newly industrialized.

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