



Article

Empirical studies on the performance of banks: A systematic literature review for future research

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Abstract: This paper intends to review research on the performance of banks to identify gaps in the current body of knowledge to justify future research directions. We use a systematic literature review method and review 164 articles from refereed journals. Content analysis reveals that most of the studies are empirical focusing on two aspects i.e. financial performance and efficiency of banks. These studies consider the impact of particular events and contexts on performance and efficiency while testing research hypotheses. However, often there is a lack of a theoretical backing for these studies. We argue that the considered events and contexts affect the risk transformation process under the financial intermediation theory. The efficiency of banks reflects the risk transformation process and causes performance. On the other hand, traditional performance indicators were based on financial measures that do not reflect the components of the risk transformation process. A sound comprehensive risk-based composite measure is required to fill this gap.

Keywords: systematic literature review; financial intermediation; efficiency; performance; banks.

JEL codes: E32, G21, M41.

1. Introduction

A function of a bank differs from other business firms. The main economic functions of the banks are those of consolidating and transforming risks on the one hand by providing credits in the deficit sector and reducing the cost of transaction and information costs on the other hand. The theory of banking firm explains the risk transformation process. In this context, the performance of banks is a very popular research area over the years which focuses on the impact of a selected context or an event on the performance. These studies cover the banking process as well as the management issues of banks. The banking process has been discussed in different theoretical perspectives. However, most performance studies have been empirical studies that lack a sound theoretical foundation on the backing process. Three theories have emerged over time in the banking process i.e. credit creation theory, fractional reserve theory, and financial intermediation theory. Today, financial intermediation theory is dominant in the banking process. Some other theories are related to the management issues of banks i.e. agency theory, stakeholder theory, trade-off theory, resource-based theory, moral hazard theory, and capital buffer theory, among others. We will focus on the performance of banks under the banking process in terms of financial intermediation theory.

Empirical studies show that performance measures depend on the objectives of the researcher. There is no unique measure of performance and therefore, the same study has used several measures to capture the performance. However, unique results among different measures have not been generated. Therefore, this study intends to review the empirical work to identify a suitable method of measuring the performance of banks in different research perspectives or context. Therefore, the purpose of this study is to provide an extensive literature review on the performance of banks. More specifically, the objectives of the study are to:

1. Synthesize the existing literature on the performance of banks.
2. Arrange the publications in an orderly manner to enable easy and quick search.
3. Classify performance research articles according to their approach and methodologies.
4. Explore the issues in performance research and suggest research areas for future work.

This study also focuses on the following research questions in addition to the above objectives. These questions will guide us to have a comprehensive understanding of the research context.

- How articles on bank performance are placed in time?
- What has been studied about performance?
- What research methods have been used?
- What are the most important articles about the topic?

The remainder of the paper is organized as follows. We first introduce the concept of performance of banks and research methodology. Second, we provide an article classification scheme. Thereafter, an overview of the selected publications is provided. Finally, we outline our main findings, discuss implications, and suggest avenues for future research.

2. Concept of Performance of Banks

Cambridge Dictionary defines performance as "how well a person, machine, etc. does a piece of work or activity". According to the Oxford dictionary, performance is the action or process of performing a task or function. We define the performance as how well a bank does the financial intermediation process in sustainably achieving the objectives of stakeholders. The performance of banks is assessed in different perspectives using financial as well as non-financial indicators of banks. Hughes & Mester (2015) identify two broad approaches in measuring the performance of banks i.e. non-structural and structural approaches. Non-structural approaches use different performance measures (e.g. ROE, ROA, net interest margins, Tobin's q-ratio among others). In contrast, structural approaches are based on theoretical models of banking behavior such as efficient and profit frontiers. The efficiency measures how best a bank performs over the other banks in the industry in the process of converting inputs into outputs. Banks are different from the other business entities and they function as an intermediary between depositors and borrowers. Therefore, the performance of banks has to be measured considering the financial intermediation process. The overall long-term financial performance results in the financial stability of banks.

3. The Methodology of the Literature Review

A systematic approach was used to identify and select articles for the review. Fink (2005) suggests that a literature review must use a methodology that is systematic in approach, explicit in describing the procedures by which it was conducted and comprehensive in its scope of including all relevant material related to particular phenomena. Following Singh & Kumar (2014), a four-category process was used as shown in Figure 1.

3.1 Literature Collection and Boundary Identification

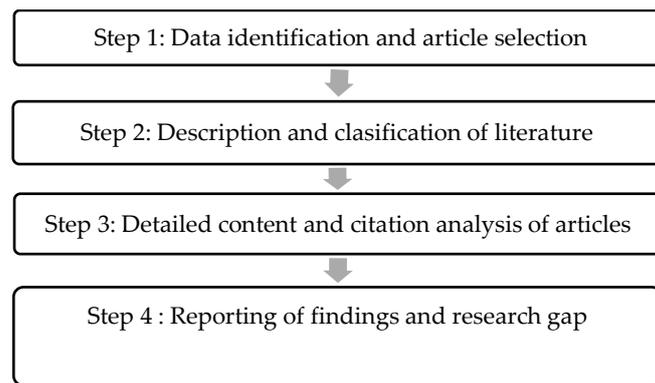
We searched for articles in Elsevier and Emerald databases to capture a comprehensive and diverse range of articles published in Elsevier and Emerald databases for review. We started with a

keyword search and then delimited the literature thereafter. Thus, it is a combination of deductive and inductive approaches (Singh & Kumar, 2014; Shukla & Jharkharia, 2013). The keyword search generated a sizable number of articles. We adopted the methodology used by Singh & Kumar (2014) to filter the most relevant literature. The boundaries for selecting papers were given as follows:

- Papers published only in peer-reviewed indexed academic journals were considered.
- Papers were collected for 13 years (2008-2020).
- Papers with full-text available were considered.

This literature search was carried out considering the keywords within the boundaries to identify a sample for further screening. We used the performance of banks as the keyword and checked in titles, keywords, or abstracts for the identification. The first round search generated 795 articles within delimiting boundaries. Subsequently, we filtered the articles to identify the most relevant articles for our research context. This filtering process was carried out by reading the identified papers considering the relevance and appropriateness. The detailed comprehensive analysis produced 164 articles and was qualified for the final review. The protocol for the database search is illustrated in Table 1. The summary of the systematic process of article selection is presented in Figure 2. We searched Elsevier and Emerald databases from 2008 to 2020 on 19.11.2019.

Figure 1. Process of Systemic Literature Review



Source: Singh & Kumar (2014),

Table 1. Database Search Protocol

Database	Scope	Number of articles	Number of selected articles
Elsevier	Title/abstract/keywords	704	141
Emerald	Title/abstract/keywords	91	23
Total		795	164

Note: Search Date: 19.11.2019, period: 2008-2020

4. Description and Classification of Literature

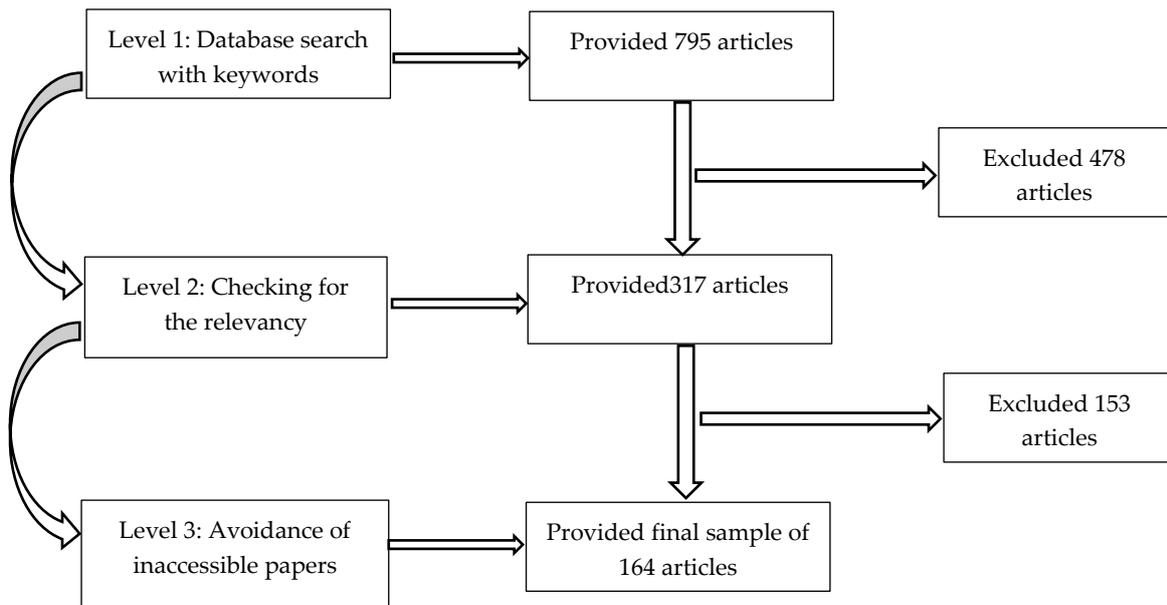
The identified 164 were analyzed through the systemic literature review concerning the publication year, coverage of the study period, the methodology used, journal of publication, types of banking sector studied, country of studies, and source of data to understand the trends and issues in the literature.

4.1 Analysis by Year of Publication

This analysis intends to identify significant contexts and events through the dispersion of articles over the sample period. The analysis shows that the selected articles have been published quite

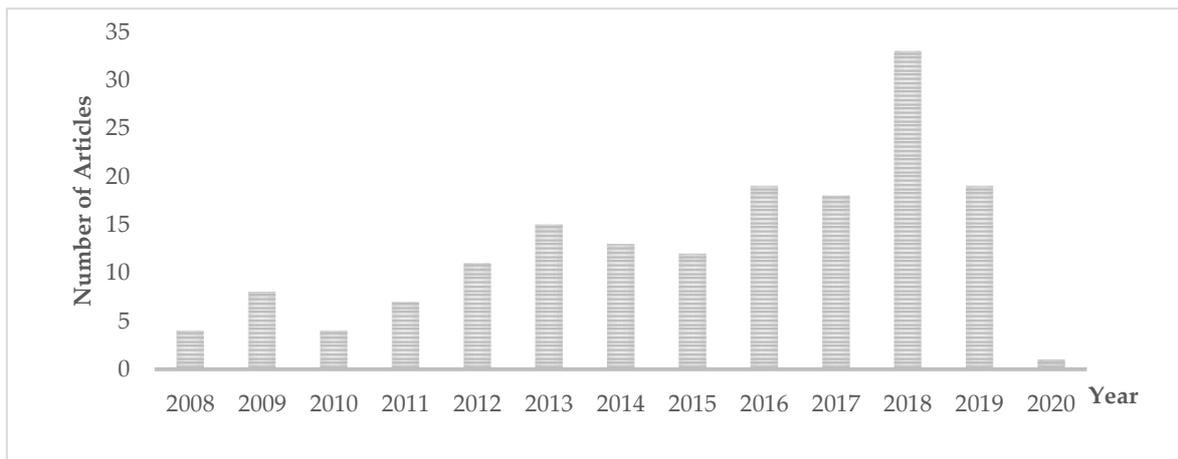
regularly from 2008- 2020 as shown in figure 3. There is a scarce number of publications in the 2008-2010 period. The figure also confirms an upward trend in the number of publications, 2011 onward which could be attributed due to the empirical studies on the global financial crisis and performance. Most published articles are concentrated in 2016 and 2018. A maximum of 33 articles was published in the year 2018.

Figure 2. Summary of The Articles Selection Process of The Study



Source: Developed by the authors

Figure 3. Classification of Articles by Year of Publication

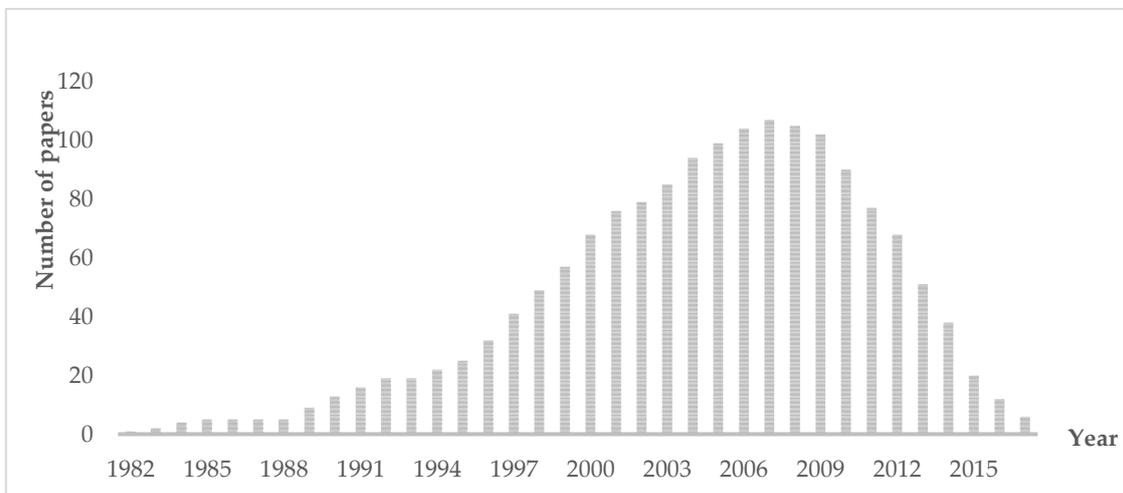


4.2 Analysis by the coverage of the study periods

Most of the reviewed articles had used panel data sets which creates an interest in analyzing the periods covered in the studies. Figure 4 shows the usage of data over the years by the selected papers. Most of the studies cover the period of the global financial crisis. The year 2007 has been included in most of the studies as a frequent data point. A sizable percentage of 65.24 of the selected papers have covered the year 2007 in respective studies. The period from 2005 to 2009 has been covered by more

than 60 percent of studies. This shows the interest of researchers on studying the impact of events or context on the performance of banks.

Figure 4. Coverage of the study periods



4.3. Analysis by Research Methods

The analysis reveals that all the papers were empirical studies. Table 2 shows the frequency of different empirical methodologies of our sample. We can identify three categories of empirical studies which include empirical panel data, OLS regression, and other measures of efficiency including Data Envelopment Analysis (DEA), Stochastic Frontier Approach (SFA), and cost efficiency measures among others. The panel data analysis has been the most popular methodology which represents 59.76 percent of total studies. Under the panel data, the majority has focused on the system generalized method of the moment. On the other hand, only forty-two studies are based on other efficiency-based performance measures.

Table 2. Articles by Research Methods

Research method	Number	Percentage (%)
Panel Data	98	59.76
OLS Regression	24	14.63
Efficiency based methods	42	25.61
Total	164	100.00

4.4. Analysis by the journal of publication

This analysis is used to identify the most influential and involved journals which may be useful for future researchers and also will be useful to continue the conversation on the performance of banks. Our sample was contained in 59 journals as shown in Figure 5. Journal of Banking and Finance provides a maximum of twenty articles, followed by the Journal of Financial Stability with thirteen articles.

4.5 Analysis by Type of Banks

The performance studies cover all the subgroups in the banking industry. However, there are some specific studies on commercial banks, investment banks, savings banks. And also, the different types of characteristics such as government, private, and foreign ownership, or listed in stock exchange are considered. Our review suggests that commercial banks are dominant in performance studies. However, recent articles show a trend of studying the performance of Islamic banks concerning the

performance of conventional banks (Majid, Falahaty, & Jusoh, 2017; Alam, Zainuddin, & Rizvi, 2019; Azad, Azmat, & Hayat, 2019; Berger, Boubakri, Guedhami, & Li, 2019). The majority of articles are cross-country studies which indicates an attempt to compare outcomes and findings across countries. Our analysis reveals that there are differences in performance among different categories of banks. For example, Köhler(2015) shows that listed banks have a significantly higher share of non-interest income and they are also more dependent on non-deposit funding than banks that are not listed. This might reduce the benefit of diversifying into non-interest income and non-deposit funding. Beck, Demirgüç-Kunt, & Merrouche (2013) show the better stock performance of listed Islamic banks due to their higher capitalization and better asset quality over the conventional banks. Zuhroh, Ismail, & Maskie (2015) show that Islamic banks are efficient over the conventional banks. Table 3 shows the frequency of articles for each subgroup of banks.

Figure 5. Articles by the Journal of Publications

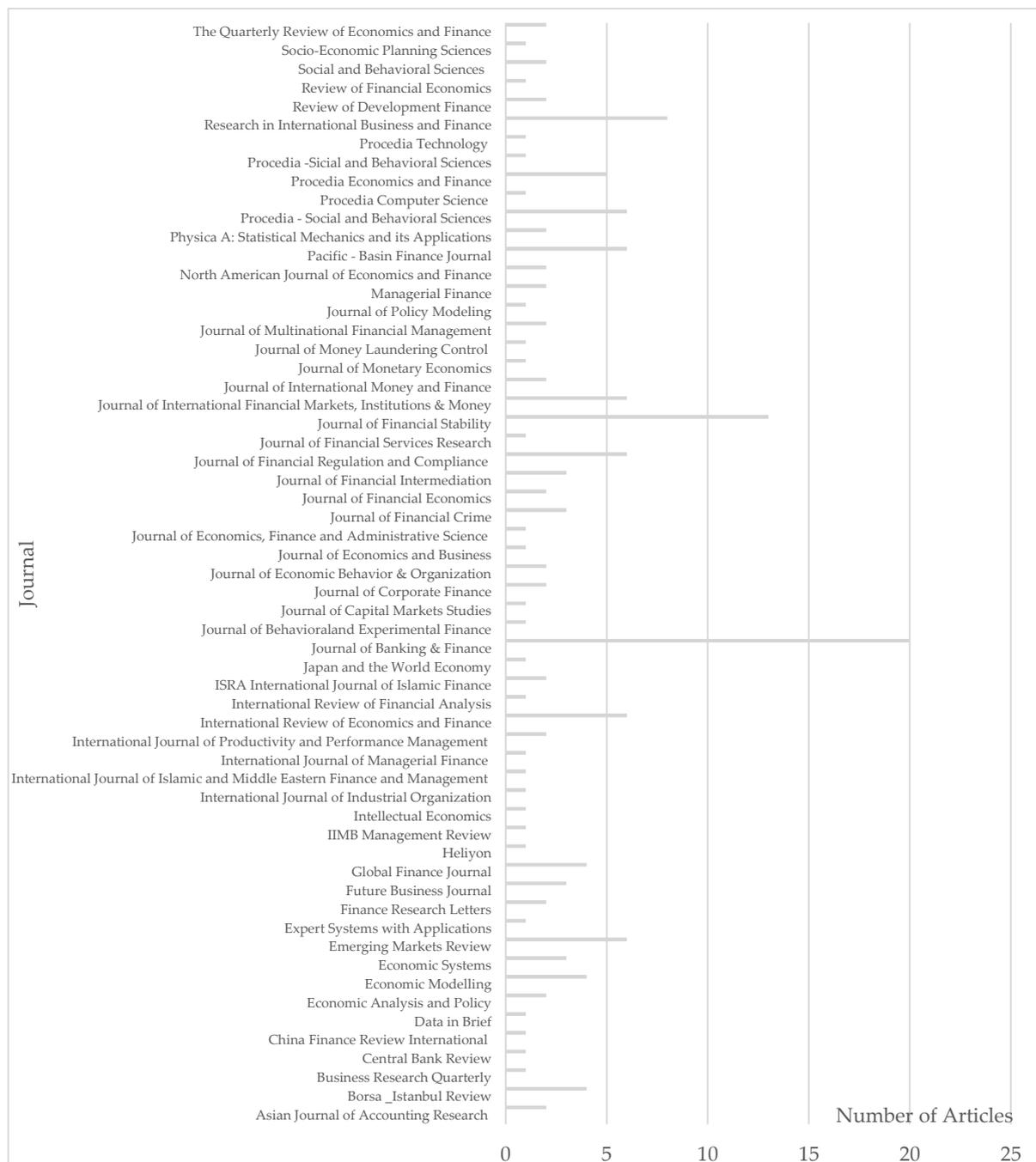
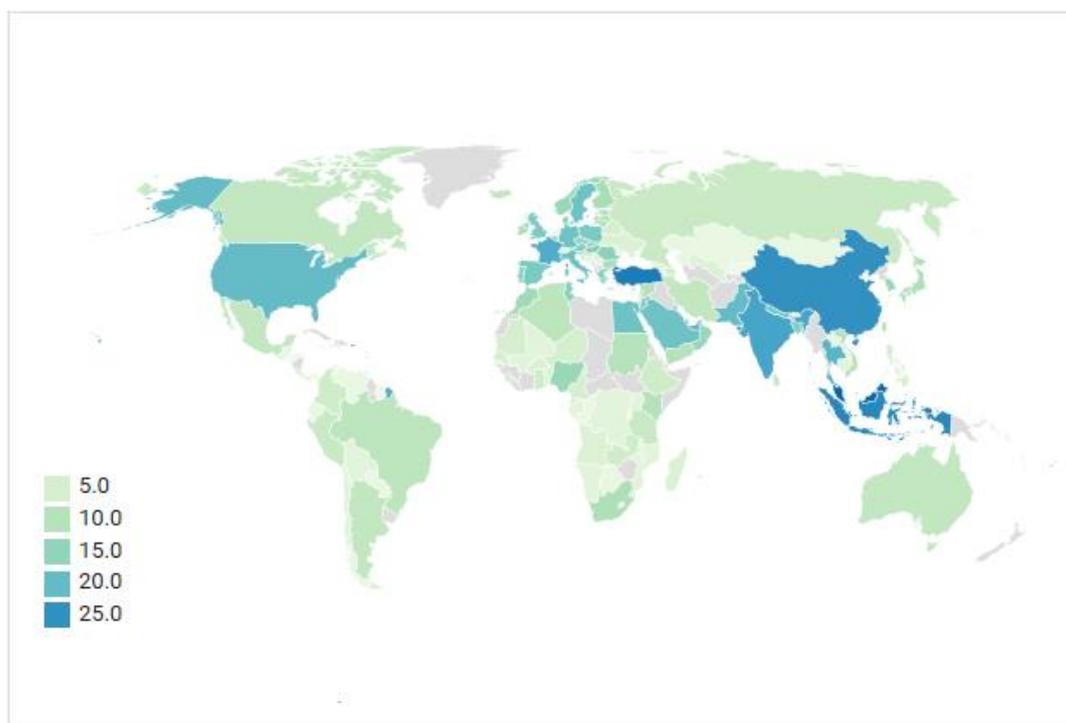


Table 3. Articles by Types of Banks

Type of banks	Number of Articles	Percentage (%)
Banks (Including Commercial, Investments, and Savings banks)	89	54.27
Commercial Banks	31	18.90
Corporative Banks	4	2.44
Islamic Banks	14	8.54
Listed Banks	12	7.32
Others (Government, Private, Deposit Money banks)	14	8.54
Total	164	100.00

4.6 Analysis by Country of Studies

The analysis by country of studies provides some peculiar insights from the literature. Figure 6 provides the mapping of countries based on the coverage of the number of studies. This shows that performance studies are concentrated in East Asian countries and Eastern European countries over the other regions. We assume that the East Asian financial crises and the membership of the European Union by Eastern European countries have fueled the interest. Apart from these two regions, China, India, and the USA have been dominant in performance studies which may be due to the size and growth of economies where banks play a major role. It is a common observation that there is a trend of focusing on a group of countries or regions for the studies rather than concentrating on a single country. There is more concentration on Asia over other regions. Malaysia, Turkey, Indonesia, China, and India are the frequently studied countries during the period of the survey. A list of countries with ten or more research articles is presented in Figure 7.

Figure 6: Analysis by country of studies

4.7 Analysis by Source of Data

The performance studies considered in this review had used secondary data to gather bank-level as well as country-level data. The bank Scope database was popular in obtaining bank-level data while

the world development indicators compiled by the World Bank and International Financial Statistics database compiled by the International Monetary Fund were popular for the macroeconomic data. The frequently used sources for bank-level data are shown in Table 4.

Figure 7. Frequently Researched Countries

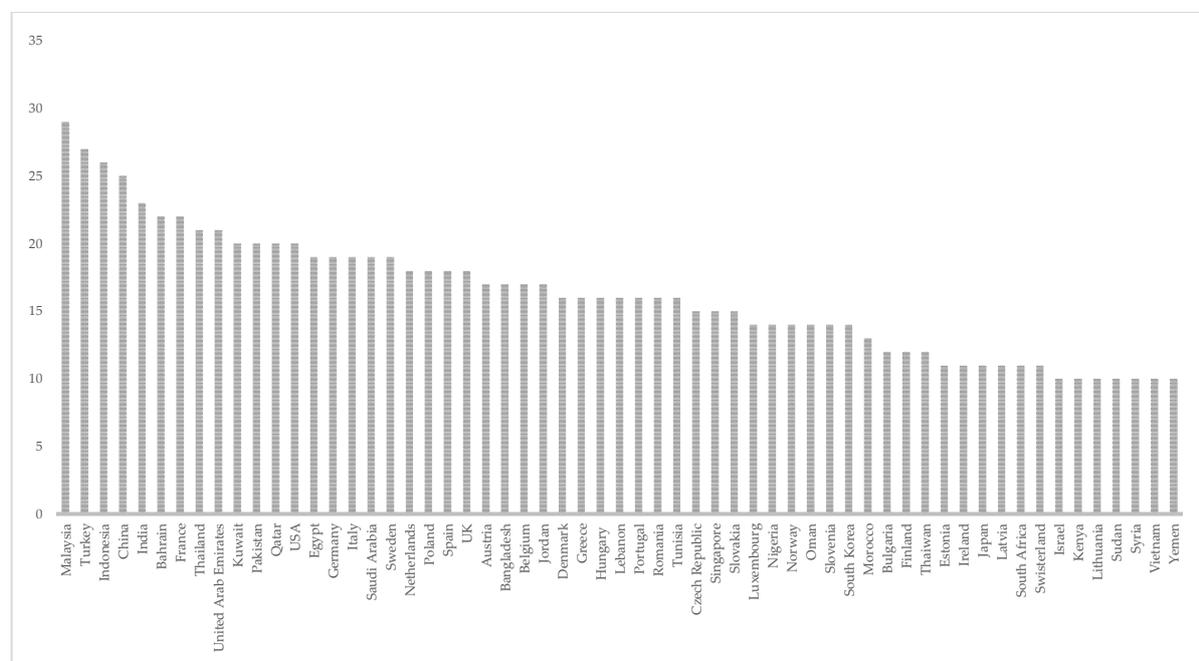


Table 4. Popular Databases for Bank-Level Data

Database	Number of articles	Percentage (%)
Annual reports from bank websites	19	11.59
Bank Scope database	104	63.41
Central banks	24	14.63
Other sources	17	10.37
Total	164	100.00

5. Citation Analysis

A citation is a reference to the work of another author/s in someone's academic work. Citation analysis is the study of cited references for a population of articles to find the most influential works in the field (Singh & Kumar, 2014). Google Scholar is used to capturing citation information of the sample. Our analysis found that only 141 of the 164 articles had been cited. Most of the uncited articles have been published recently during 2018-2020. The cited 141 articles count 12,758 cited references at an average of 80 per article. The most-cited articles with at least 100 citations are shown in Table 5. (Athanasoglou, Brissimis, & Delis (2008) is the most-cited article with 1474 citations. Andres & Vallelado (2008), Beck, Demirgüç-Kunt, & Merrouche (2013), Berger & Bouwman (2013), and Demirgüç-Kunt & Huizinga (2010) were also among the top five most-cited publications.

Table 6 presents the most referenced journals that published work on the performance of banks. In social sciences, academic accreditation is recognized as the publications in ranked journal databases i.e. ABDC, ABS, Scopus, and ISI. The social science academic community requires the ranked journal in ABDC & ABS to be included in the Scopus index

6. Content Analysis

Content analysis is a class of methods within social science that can be applied both in quantitative and qualitative ways (Singh & Kumar, 2014). The content analysis is used to see what the other authors have done in their studies. Detailed content analysis of our sample reveals that most of the studies on the performance of banks have been focused on the financial performance and efficiency of banks considering determinant factors. These studies have not considered the financial intermediation process in performance measurements. Most of the studies focus on the impact of a given event, scenario, or context on the performance and efficiency of banks. For example, the impact of capital on bank performance during financial crises; bank bailouts and bank performance; non-performing loans and bank efficiency; bank political connections and performance; bank reforms, foreign ownership, and financial stability; bank regulation and efficiency; bank regulations, competition, and financial reforms on banks' performance; bank supervision, regulation, and efficiency; banking sector reform and performance; board diversity and its effects on bank performance; board structure and performance; CEO education and bank performance; corporate governance and bank performance; corporate social responsibility and financial performance; determinants of bank performance and bank efficiency; were popular among other areas. We propose that the above events and contexts affect the intermediation process that can be measured in terms of efficiency. This efficiency causes the short-term performance of banks which is measured by using accounting ratios and long-term performance in terms of stability.

Table 5. List of Articles with More Than 100 Citations

Number	Author/s	Year	Number of citations
1	Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D.	2008	1474
2	Andres, P. d., & Vallelado, E.	2008	769
3	Beck, T., Demirgüç-Kunt, A., & Merrouche, O.	2013	756
4	Berger, A. N., & Bouwman, C. H.	2013	753
5	Demirguc-Kunt, A., & Huizinga, H.	2010	727
6	Kosmidou, K.	2008	593
7	Berger, A. N., Hasan, I., & Zhou, M.	2010	379
8	Berger, A. N., Klapper, L. F., & Turk-Ariss, R.	2009	374
9	García-Herrero, A., Gavilá, S., & Santabábara, D.	2009	372
10	Uhde, A., & Heimeshoff, U.	2009	353
11	Naceur, S. B., & Omran, M.	2010	347
12	Seçme, N. Y., Bayrakdaroğlu, A., & Kahraman, C.	2009	342
13	Brissimis, S. N., Delis, M. D., & Papanikolaou, N. I.	2008	329
14	Bertay, A. C., Demirgüç-Kunt, A., Huizinga, H.	2013	315
15	Chortareas, G. E., Girardone, C., & Ventouri, A.	2012	290
16	Cornett, M. M., Guo, L., Khaksari, S., Tehranian, H.	2010	285
17	Berger, A. N., Kick, T., & Schaeck, K.	2014	254
18	Pathan, S., & Faff, R.	2013	225
19	Fu, X., Lin, Y., & Molyneux, P.	2014	218
20	Naceur, S. B., & Kandil, M.	2009	215
21	Distinguin, I., Roulet, C., & Tarazi, A.	2013	213
22	Shim, J.	2013	176
23	Rossi, S. P., Schwaiger, M. S., & Winkler, G.	2009	156
24	Meca, E. G., Sánchez, I.-M. G., & Ferrero, J. M.	2015	156
25	Mirzaei, A., Moore, T., & Liu, G.	2013	140
26	Manthos, D., & Nikolaos, I. I.	2009	132
27	Ashraf, Q., Gershman, B., Howitt, P.	2017	128
28	Köhler, M.	2015	122
29	Hong, H., Huangb, J.-Z., & Wu, D.	2014	107
30	Cubillas, E., Fonseca, A. R., & González, F.	2012	103
31	Fukuyama, H., & Matousek, R.	2011	100

Table 6. List of Most-cited Journals and the Ranking

Number	Journal	ABDC	ABS	Number of Papers	Number of Citations
1	Journal of Banking & Finance	A*	3	20	4508
2	Journal of Int. Financial Markets, Institutions & Money	A	3	7	1675
3	Journal of Financial Economics	A*	4*	2	1485
4	Journal of Financial Stability	A	3	13	725
5	Managerial Finance	B	1	2	725
6	Journal of Financial Intermediation	A*	4	3	683
7	Emerging Markets Review	A	2	6	404
8	Journal of Financial Services Research	A	3	1	374
9	Expert Systems with Applications	C	2	1	342
10	Journal of Corporate Finance	A*	4	2	285
11	Journal of Economics and Business	B	1	1	215
12	Procedia - Social and Behavioral Sciences	-	-	6	136
13	Journal of Economic Behavior & Organization	A*	3	2	128
14	Procedia Economics and Finance	-	-	5	107
15	International Review of Economics and Finance	A	2	6	91
16	Journal of Monetary Economics	A*	4	1	91
17	Journal of International Money and Finance	A	3	2	85
18	Socio-Economic Planning Sciences	C	2	1	84
19	Journal of Financial Regulation and Compliance	C	-	6	81
20	Research in International Business and Finance	B	-	8	60
21	Economic Modelling	A	2	4	48
22	Borsa _Istanbul Review	-	-	4	47
23	Economic Systems	B	2	3	42
24	Pacific-Basin Finance Journal	A	-	6	41
25	Review of Development Finance	-	2	2	39
26	Journal of Multinational Financial Management	B	2	2	36
27	International Journal of Industrial Organization	A	3	1	33
28	Physica A: Statistical Mechanics and its Applications	-	-	2	23
29	Future Business Journal	-	-	3	21
30	Journal of Money Laundering Control	C	-	1	17
31	Social and Behavioral Sciences	-	-	2	17
32	International Review of Financial Analysis	A	3	1	15
33	Japan and the World Economy	B	1	1	15
34	The Quarterly Review of Economics and Finance	-	-	2	12
35	Global Finance Journal	A	2	4	8
36	Economic Analysis and Policy	B	2	2	7
37	Intellectual Economics	A*	-	1	7
38	Finance Research Letters	A	2	2	6
39	Heliyon	-	-	1	6
40	International Journal of Managerial Finance	A	-	1	6
41	China Finance Review International	C	-	1	5
42	Journal of Financial Crime	B	-	3	5
43	Journal of Policy Modeling	A	-	1	4
44	Review of Financial Economics	B	1	1	3
45	Benchmarking: An International Journal	B	-	1	2
46	Central Bank Review	C	-	1	2
47	Int. Journal of Productivity and Performance Management	B	-	2	2
48	North American Journal of Economics and Finance	-	2	2	2
49	Procedia Technology	-	-	1	2
50	Journal of Capital Markets Studies	-	-	1	1
Total				154	12,758

*ABDC, Ranking as per the 2019 Australian Business Deans Council (ABDC) Journal Quality List. CABS (AJG), Ranking of Chartered Association of Business Schools. Scopus index list. ISI, International Scientific Indexing

6.1 Financial Performance of Banks

Various financial ratios or indicators, dependent variables, have been used to measure the performance of banks in respect of identified issues. Frequently, some studies have used several financial indicators as dependent variables to maintain the robustness of the studies. Commonly used performance indicators are shown in table 7.

Table 7. Frequently Used Performance Measures of Banks

Author/s	Performance Indicator/ Dependent variable/s
Hughes, Jagtiani, Mester, & Moon (2019)	ROA, Tobin's Q
Robin, Salim, & Bloch (2018)	ROA, ROE, NIM
Dedu & Chitan (2013)	ROA, ROE, Z-score
Fang, Lau, Lu, Tan, & Zhang (2019)	ROA, NIM
James & Joseph (2015)	ROA
Meca, Sánchez, & Ferrero (2015)	ROA, Tobin's Q
Pathan & Faff (2013)	ROAA, ROAE, Tobin's Q, NIM, Stock returns
Mahbub, Matthew, & Barker (2019)	ROA
Alam, Zainuddin, & Rizvi (2019)	ROA, non-interest net revenue
Kutubi, Ahmed, & Khan (2018)	ROA, Tobin's Q
Oyewumi, Ogunmeru, & Oboh (2018)	ROA
Khan, Ahmad, & Chan (2018)	ROAA, ROAE
Köster & Pelster (2017)	Profit before tax, profit after tax
Onakoya, Moses, Olokundun, Okorie, & Lawal (2018)	ROA, ROE, NIM, and Tobin's Q
Chen, Liang, & Yu (2018)	NPL, ROA, ROE, NIM, and Cost to income ratio
Huang, Chiang, & Lin (2017)	ROA, Z-score, Loan loss provision ratio
Azad, Azmat, & Hayat(2019)	NIM
Bandt, Camara, Maitre, & Pessarossi (2018)	ROA, Capital ratio
Bian & Dend (2017)	ROA, ROE, NPL
King, Srivastav, & Williams (2016)	Industry adjusted ROA
Musali & Ismail (2014)	ROA, ROE
Maqbool & Zameer (2018)	A composite index of performance (ROE, ROA, NP, SR, and PE)
Rashid & Jabeen (2016)	A financial performance index using CAMELS variables.

The studies have considered two determinant factors on the performance of banks .i.e. internal and external factors. According to Robin, Salim, & Bloch (2018), the internal determinants are related to bank-specific variables. Commonly used internal factors in determining the financial performance of banks are shown in the following table.

The external determinants are industry-specific and macro-economic variables. Therefore, they are recognized to be external or market variables in determining performance. Commonly used external factors in determining financial performance are; GDP growth rate(Robin, Salim, & Bloch, 2018; Fang, Lau, Lu, Tan, & Zhang, 2019; Alam, Zainuddin, & Rizvi,2019; Kutubi, Ahmed, & Khan, 2018 ;Köster & Pelster,2017; Chen, Liang, & Yu, 2018), inflation(Robin, Salim, & Bloch, 2018; Fang, Lau, Lu, Tan, & Zhang, 2019; Alam, Zainuddin, & Rizvi, 2019; Kutubi, Ahmed, & Khan, 2018; Chen, Liang, & Yu, 2018), interest rate (Köster & Pelster,2017), budget surplus(Chen, Liang, & Yu, 2018), exchange rate (Chen, Liang, & Yu, 2018), government debt (Gerhardt & Vennet,2017) , housing prices (Gerhardt & Vennet,2017), among other variables.

Table 8. Commonly Used Internal Determinants of Financial Performance Of Banks

Variable	Author/s
Capital	Robin, Salim, & Bloch, 2018; Fang, Lau, Lu, Tan, & Zhang, 2019; Pathan & Faff, 2013; Mahbub, Matthew, & Barker, 2019; Alam, Zainuddin, & Rizvi, 2019; Kutubi, Ahmed, & Khan, 2018; Köster & Pelster, 2017; Bandt, Camara, Maitre, & Pessarossi, 2018.
Credit risk	Robin, Salim, & Bloch, 2018; Fang, Lau, Lu, Tan, & Zhang, 2019; Mahbub, Matthew, & Barker, 2019; Chen, Liang, & Yu, 2018; Gerhardt & Vennet, 2017; Ghosh, 2018; Bandt, Camara, Maitre, & Pessarossi, 2018; Boubakri, Mirzaei, & Samet, 2017.
Loans to total assets	Ghosh, 2018; Hung, Jiang, Liu, Tu, & Wang, 2017; Bandt, Camara, Maitre, & Pessarossi, 2018.
Bank size	Fang, Lau, Lu, Tan, & Zhang, 2019; Pathan & Faff, 2013; Alam, Zainuddin, & Rizvi, 2019; Kutubi, Ahmed, & Khan, 2018, 2018; Oyewumi, Ogunmeru, & Oboh, 2018; Khan, Ahmad, & Chan, 2018; Köster & Pelster, 2017; Gerhardt & Vennet, 2017; Chen, Liang, & Yu, 2018; Bandt, Camara, Maitre, & Pessarossi, 2018; Boubakri, Mirzaei, & Samet, 2017.
Deposits to liabilities	Chen, Liang, & Yu, 2018
Liquidity	Fang, Lau, Lu, Tan, & Zhang, 2019; Köster & Pelster, 2017; Chen, Liang, & Yu, 2018; Boubakri, Mirzaei, & Samet, 2017.
Capital	Gerhardt & Vennet, 2017; Ghosh, 2018; Hung, Jiang, Liu, Tu, & Wang, 2017; Chen, Liang, & Yu, 2018; King, Srivastav, & Williams, 2016.
Debts to equity	Chen, Liang, & Yu, 2018; Bian & Deng, 2017
Ownership	Robin, Salim, & Bloch, 2018; Mahbub, Matthew, & Barker, 2019; Kutubi, Ahmed, & Khan, 2018
Market share	Mahbub, Matthew, & Barker, 2019; Khan, Ahmad, & Chan, 2018.
Diversification	Fang, Lau, Lu, Tan, & Zhang, 2019; Mahbub, Matthew, & Barker, 2019; Bandt, Camara, Maitre, & Pessarossi, 2018.

Source: Compiled by the author

6.2 Efficiency of Banks

The efficiency is another approach that is used to measure the performance. The efficiency measures how best a bank performs over the other banks in the industry in the process of converting inputs into outputs. There are various approaches to measure the efficiency of banks (see Table 9).

Studies on the efficiency of banks also have considered two types of determinants i.e.: internal and external (Manthos & Nikolaos, 2009; Mansour & Moussawi, 2019). The internal factors are bank-specific and external factors are related to the external environment or the macroeconomy.

Most commonly identified internal factors in the literature were bank size (Mansour & Moussawi, 2019; Partovi & Matousek, 2019; Manthos & Nikolaos, 2009; Miller & Noulas, 1996; Sufian, Kamarudin, & Nassir, 2016), ownership type (Tecles & Tabak, 2010), regulatory variables (Sufian et al, 2016; Das & Ghosh, 2006) and level of problem loans, non-performing assets, (Partovi & Matousek, 2019; Berger & Young, 1997), profitability (Mansour & Moussawi, 2019), equity ratio (Mansour & Moussawi, 2019). The most commonly identified macroeconomic variables are economic growth (Mansour & Moussawi, 2019; Bencivenga & Smith, 1991) and inflation factors (Mansour & Moussawi, 2019). Some studies have considered the structure of the industry as a determinant of bank efficiency (Manthos and Nikolaos, 2009).

7. Findings from Literature Review

Our review of retrieved articles identifies some research gaps and limitations in research methods, study settings, and theoretical frameworks. We believe that the following issues are most relevant to the literature on the performance of banks.

Table 9. Shows Various Approaches Of Measuring Efficiency Of Banks

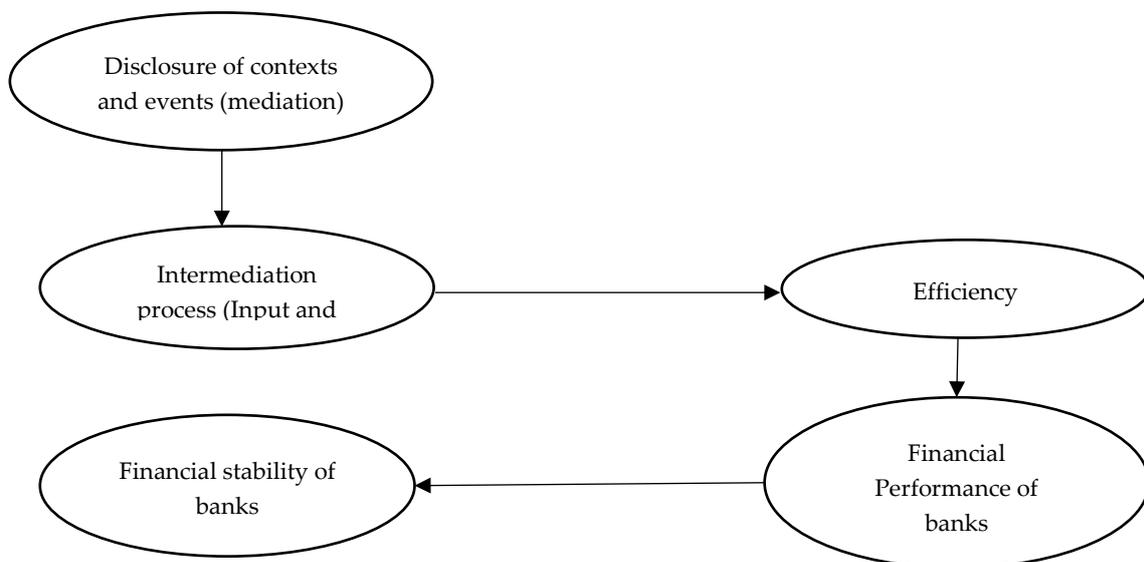
Efficiency measure	Author/s
Censored stochastic frontier model	Huang, Chiang, & Lin, 2017; Tsai, Lin, & Chen, 2015.
Stochastic frontier analysis	Ding & Sickles, 2018; Shamshur & Weill ,2019; Majid, Falahaty, & Jusoh, 2017; Psillaki & Mamatzakis, 2017; Gunes & Yildirim, 2016; Barros & Williams, 2013; Silva T. C., Tabak, Cajueiro, & Dias, 2018.
Profit frontier approach	Alcober, Prior, Ausina, & Illueca, 2019.
Data Envelopment Analysis	Berger & Mester,1997; Sathye ,2001;Barros, Chen, Liang, & Peypoch, 2011; Batir, Volkman, & Gungor, 2017;Henriques, Sobreiro, & Kimura, 2018;Colesnic, Kounetas, & Michael, 2019; Adesina ,2019; Mansour & Moussawi,2019; Djalilov & Piesse,2019;Toloo & Mensah,2019; Silva T. C., Tabak, Cajueiro, & Dias, 2018.

Source: Compiled by the author

7.1 Lack of Theoretical Backing For The Studies

Most empirical studies are not backed by theories. Some papers link the results with resource-based theories considering capital and other resources. Banks functions as intermediaries between depositors and borrowers which involve a risk transformation under the financial intermediation theory. Therefore, the performance of banks has to be studied in terms of the financial intermediation process. The previous studies lack a systematic combination of the empirical results of the performance of banks with the financial intermediation theory. We can identify two reasons for this limitation. First, the researchers have tried to link the impact of events or context with the performance. Secondly, researchers have focused on testing the hypotheses related to the performance and profitability of banks. This background provides an opportunity for extending the financial intermediation theory. We argue that the events and contexts affect the risk transformation process which can be measured in terms of efficiency under the financial intermediation theory. This improvement or efficiency of the process affects the short-term performance of the banks. Sustainable continuous short-term performance affects the financial stability of banks. Therefore, modified financial intermediation theory considering the risk transformation process will take the following form.

Figure 8. Performance and Risk Transformation Process of Banks Under Financial Intermediation Theory



7.2 Limitations Of Risk Components in Performance Measures

The most of considered papers had considered accounting ratios to measure the performance of banks i.e. return on assets, return on equity, net interest margin, among other measures. The Z-score also has been considered as a measure of performance. We believe accounting ratios measure the short-term financial performance of banks and Z-score measures the long-term performance of banks. Therefore, we are of the view that the performance of banks has to be measured considering the risk transformation process of banks using a composite index to capture all the risks. The weights for the variables have to be decided on the respective weights of the components represent in the balance sheet of banks. There were some initiatives of developing such indices. Maqbool & Zameer (2018) develop a composite performance index but it does not consider the risk components. Rashid & Jabeen (2016) develop a financial performance index using CAMELS variables. However, they give equal weights for the selected variables which do not reflect the actual risk levels of banks. Our analysis focuses on studies of performance measurement. However, measurement error is not the only major challenge to the empirical studies of bank performance. For example, the study of performance is subject to endogeneity problems, which include not only measurement errors but also other issues such as omitted confounding factors, unobserved heterogeneities, and simultaneity, among others.

7.3 Dominance of Empirical Research

The review shows that all the research articles were based on secondary data. There is a dearth of empirical studies in African and some other emerging countries. This may be due to the cost involved in accessing bank-level data from databases as well as limitations of disclosure requirements in underdeveloped capital markets.

7.4 Limited Studies in Emerging Countries

There were only 85 single-country studies of which 25 were in emerging countries. The remaining 79 articles were inter country or international studies.

Table 10. Details of Single Country Studies

Country	Number of articles	Country	Number of articles
Australia	1	Kenya	1
Austria	2	South Korea	1
Bangladesh	3	Malaysia	3
Brazil	2	Nigeria	6
Canada	1	Pakistan	3
China	10	Romania	3
Czech Republic	2	Saudi Arabia	1
Egypt	1	Spain	1
France	1	Taiwan	2
Germany	1	Tunisia	1
Greece	2	Turkey	9
India	7	United Arab Emirates	2
Indonesia	2	The USA	12
Iran	1	Yemen	2
Italy	1		
Japan	1	Total	85

Table 11. Details of Inter-Country Studies

Group	Number of articles
Developed Countries	9
Middle Eastern and North African countries	11
European Countries	13
Asian Countries	18
Developed Vs Developing countries	2
International without considering specific regions	19
Developing countries	2
African Countries	4
Latin American Countries	1
Total	79

8. Conclusion

The main objective of this literature review was to identify and analyze the literature on the performance of banks to understand the research context in-depth to contribute theoretical development in bank risk transformation process. We identified and analyzed 164 research articles published during 2008-2020 on the performance of banks by adopting a systemic literature review methodology. There is a trend of increasing the number of research articles over time. However, there is a limitation of linking performance with the financial intermediation process. The major focus of performance studies was to determine the financial performance and efficiency of banks based on a given event or context. However, researchers were reluctant to adopting risk-based performance measures to capture the risk transformation process in financial intermediation. Therefore, in summary from the complete discussion, it is concluded that future research should focus on extending financial intermediation theory considering the effect of context and events on the intermediation process and performance of banks.

This literature review on performance measures of banks has highlighted conceptual and methodological issues which may serve as guidance for future research

Table 12. Conclusions on Research Questions

Research question	Main conclusion
How articles are placed in time?	Publication of articles shows an increasing trend over time which may be due to the continuous development in the banking industry in different dimensions giving events and context for researchers to study the performance. Further, the financial crisis and recent economical slow down have fuelled the performance studies.
What has been studied about the performance of banks?	Most of the studies were focused on studying determinants of financial performance or efficiency of banks based on internal and external factors in a given event or a context.
What research methods and data have been used?	Most often panel data have been used for the studies and data have been collected from databases as well as published annual reports of the banks.
What are the most important articles about the topic?	The most popular articles in this area are (Athanasoglou, Brissimis, & Delis(2008), Andres & Vallelado(2008), Beck, Demirgüç-Kunt, & Merrouche (2013), Berger & Bouwman (2013), Demirgüç-Kunt & Huizinga(2010), and Kosmidou (2008). However, their popularity is largely caused by the fact that they are early articles that studied the performance of banks after a major context or an event such as a financial crisis.

We considered only the banking process. However, management related theories are also important in this kind of analysis. It is suggested to consider the following areas for future research:

- One such avenue warranting research attention is the impact of the behavior of the management of banks as we proposed in figure 8. Existing research literature focuses on the impact of management and various determinants on the performance of banks but left the risk transformation process in the banking aspect.
- Future research can also be directed toward the establishment of banking sector-specific measures for measuring performance in different segments i.e. conventional vs. Islamic, commercial vs. investment, savings vs. development, among other classifications, adopts different banking practices in the intermediation process, hence there may be an impact on performance. Further, future studies may focus on interdisciplinary perspectives in performance studies. Besides, to focus on more important external factors such as market risk, competition and market power, and concentration. Therefore, the formulation of the conceptual framework required.

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