Banking Research in the GCC Region and Agenda for future research – A bibliometric examination

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Abstract

Purpose - This paper provides a comprehensive review of the influential and intellectual aspects of the literature on the Gulf Cooperation Council (GCC) region's banking activities.

Design/methodology/approach – This study undertakes a bibliometric meta-analysis review of the GCC region banking literature, covering 199 articles published between 2004 and 2022, extracted from the Web of Science (WoS) database, followed by a content analysis of highly cited papers.

Findings - This paper identifies the influential aspects of GCC region banking literature in terms of journals, articles, authors, universities, and countries. The paper also identifies and discusses five major research clusters: i) bank efficiency, ii) corporate governance and disclosure, iii) performance and risk-taking, iv) systemic risk, bank stability and risk spillovers, and v) intellectual capital. Finally, it identifies gaps in the literature and highlights some important research issues that provide directions for future research.

Originality - To the authors’ knowledge, this is the first review paper on GCC region banking literature. This study provides the regulators, practitioners and academics with valuable insight and an in-depth understanding of the banking system of the GCC region.

Keywords

GCC region, Banking, Bibliometric analysis, Content analysis

Article classification

Literature review

1 Introduction

Established in 1981, the Gulf Cooperation Council (GCC) is a political and economic union between six Arab countries, all situated in the Middle East and governed based on an Islamic ethical system: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates (Durugbo et al., 2020). GCC region has high economic importance for being the world's largest regional exporter of crude oil, holding approximately 45% of the world's total oil reserves and responsible for one-fifth of the world's oil production (Mirzoev et al., 2020, Maghyereh and Abdoh, 2021). GCC countries have similar government systems, economic policies and financial regulations, including free trade and capital movements with a high level of trade openness (Khan et al., 2021). The banking industry in the GCC countries is relatively young, with the oldest banks dating back to the 1950s (Ben Khediri et al., 2015, Al-Muharrami et al., 2006). Majority of banks in this region are financially strong, well-capitalized, hold an extensive network of branches and have adopted modern banking services (Srairi, 2010). Additionally, the GCC banking sector is one of the largest Islamic banking markets (Alqahtani et al., 2017a).

The GCC banking industry has some unique features that distinguish it from the banking industry in developed countries. Unlike the banking sectors in the developed and some emerging economies, the banking sector of GCC countries is highly concentrated (Miah and Uddin, 2017), with the top ten (10) GCC banks holding around 50% of the total market share (Boulanouar et al., 2021). Another important distinction is the ownership structure. In developed economies, bank ownerships are usually widely held by institutional shareholders. In contrast, even after several legal and regulatory reforms (Al-Hassan et al., 2010), the majority of the commercial banks in the GCC region are family-owned with substantial government shareholding and most of the specialised banks are wholly owned by the government (Boulanouar et al., 2021, Srairi, 2010). All the GCC countries have a bank-based financial system with relatively under-developed financial markets (Maghyereh and Abdoh, 2021, Abuzayed et al., 2018), and rely highly on the banking sector for providing diversified non-traditional banking activities, such as securities market operations, insurance, corporate advisory (AlKhouri and Arouri, 2019). Also, GCC banks fund government activities by holding government securities at a significantly higher level in compare to the global average (Abuzayed et al., 2018, Al-Hassan et al., 2022). These unique features provide the relevance of studying the GCC region's banking sector from different perspectives.

Due to the critical roles banks perform in the society, banks have a broad and sizeable impact on many social challenges. Banks intermediate among diverse parties to facilitate financial transactions. Banks directly impact people by managing their money and wealth. Banks also shape the business through the allocation and distribution of capital to each line of business in the real economy, from retail and small businesses to corporate borrowers. Therefore, research on banking activities in different regions has significant importance to regulators, policymakers, and academics around the globe. There are many review papers on different aspects of banking, such as banking crisis (Laeven, 2011), Islamic banking (Alshater et al., 2021, Ikra et al., 2021), credit risk (Zamore et al., 2018), systemic risk (Silva et al., 2017), corruption on banking (Bahoo, 2020), and political risk on banking (Janbaz et al., 2022). However, we could not find any banking literature review paper that focuses on GCC region or any other specific region. Based on the economic importance of the GCC region as the world’s largest exporter of crude oil, an efficient and sound banking system is very important for these countries. Against this backdrop, this paper systematically reviews all the research articles focused on the GCC region's banking system to analyse the influential and intellectual aspects of the literature. The bibliometric review examines the influential aspects of GCC region banking literature to find out the most impactful journals, articles, authors, universities, and countries. This study also conducts a through content analysis of the highly cited articles to provide an comprehensive overview of the GCC banking system and, more importantly, identifies and discuss the major themes within the corpus of the GCC banking research field. In addition, this paper indicates the main gaps in existing knowledge and provides future research directions. To the best of our knowledge, this is the first paper that reviews the banking literature of the GCC region and provides regulators, industry practitioners and academics with valuable insight, in-depth understanding, and future indications on the banking sector of the GCC region.

The paper is organised as follows. In the next section, we describe the banking sector of GCC countries, highlighting the importance of the region's banking system. Then we describe the methodology and data extraction process followed by initial descriptive statistics, results of performance analysis employing bibliometric techniques, and scientific mapping revealing the major research clusters. After that, we present a detailed content analysis of highly cited articles along with some future research directions based on our content analyses. Finally, we provide our concluding remark.

2 GCC banking sector

The Gulf Cooperation Council (GCC), or the Cooperation Council for the Arab States of the Gulf, is a regional intergovernmental political and economic union of six Arab states of the Persian Gulf: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates (UAE). All these countries are monarchies, have the same social characteristics, and are among the wealthiest nations with a heavy dependence on oil for their wealth. In the year 2022, the GDP per capita of all six GCC countries were much higher than the world average of $12,647.5, with Bahrain US$30,152, Kuwait $43,233.5, Oman US$25,056.8, and Saudi Arabia US$30,436.3[1]. All national currencies in the GCC region are directly pegged to the U.S. dollar to avoid currency fluctuation and eliminate uncertainties in international transactions. Only the Kuwaiti Dinar is pegged to an undisclosed basket of currencies, but the basket is heavily weighted towards the U.S. dollar (Adedeji et al., 2019). The rationale behind this currency peg is that the oil price is fixed in dollars. As oil is the primary source of revenue for all GCC countries, any exchange rate fluctuation could drastically reduce income of those countries if the currencies were not pegged with the U.S. dollar. However, this currency pegging restricts the independence of monetary policy in GCC countries, forcing macroeconomic management to rely mostly on fiscal policy and prudential regulations (Basu et al., 2015).

Unlike the market-based Western economies, the financial systems of GCC countries are highly reliant on banks. At the end of 2020, GCC Banks' total assets reached $2.6 trillion, about 180 per cent of GCC GDP, from $1.6 trillion or 102 per cent of GDP in 2013 (Al-Hassan et al., 2022). In all GCC countries, the banking sector is the second-largest contributor to the country's GDP after the oil and gas sector (Ali et al., 2022). Among the GCC countries, the UAE has the most extensive banking sector, Saudi Arabia is the largest regional economy, and Bahrain ranks first for banking system depth (Khan, 2022). The GCC banking systems are highly concentrated: the top four banks account for more than 40 per cent of assets in the UAE and Bahrain, about 60 per cent of assets in Saudi Arabia, and about 70 per cent of assets in

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[1] Source: World Bank database.

Kuwait, Qatar, and Oman (Ltaifa et al., 2018). The GCC banking sector is one of the world's largest Islamic banking markets, with a dual banking system where Islamic banks operate alongside conventional banks (Mabkhot and Al-Wesabi, 2022).

In the GCC region, central governments and the nonfinancial corporate sector are the two primary net borrowers from banks. On the creditors' side, the household sector and external capital flows remain an essential source of funds to the banking system, followed by the nonfinancial corporation and government sectors (Al-Hassan et al., 2022). Nonbank financial institutions (NBFIs), such as pension funds, asset management and finance companies, and insurance, generally do not engage in credit intermediation (Ltaifa et al., 2018). Additionally, GCC region banks play an essential role in the intermediation of foreign capital, and the foreign capital inflows are matched mainly by the banks' build-up of foreign assets. During the past decade, the financial assets and liabilities denominated in foreign currency almost doubled, from around 90 per cent in 2010 to about 180 per cent of GDP in 2020 (Al-Hassan et al., 2022).

A wave of reforms to the financial stability policy framework and financial safety nets along with improved banking supervision enhanced the banking sector resilience in the GCC region (Qanas and Sawyer, 2022, Ltaifa et al., 2018). However, due to high level of state ownership and lesser presence of foreign banks, the GCC banking system still remained less competitive than many other developed banking markets, such as Singapore and Hong Kong (Alqahtani et al., 2017a). With around 16 per cent of loan portfolios in the trade and services sectors, asset quality in the banking systems is susceptible to any external shock like the COVID-19 pandemic (Al-Hassan et al., 2022). Though the GCC banks are well-capitalised and profitable, there are concerns that weaker economic activity, lower oil prices and higher inflation can lead to a deterioration in asset quality and a decrease in capital buffers.

3 Methodology

Following Linnenluecke (2017) and Bretas and Alon (2021), this paper combines bibliometric analysis and content analysis methods to review the banking literature of the GCC region. This paper follows the bibliometric research protocol suggested by Donthu et al. (2021) and the content analysis protocol suggested by Gaur and Kumar (2018). Bibliometric analysis is a useful method to interpret and map the intellectual structure of a scientific field by employing statistical methods (Hota et al., 2020, Baker et al., 2021b). A key strength of the bibliometric analysis is that being a quantitative technique, it is more powerful and efficient than the human mind in reviewing voluminous literature (Wolf, 1986). The bibliometric approach increases reliability and reduces the subjective bias of literature reviews by analysing a large number of data and employing a transparent, reproducible search and review process (Bretas and Alon, 2021, Vogel and Güttel, 2013). Combining bibliometric techniques with content analysis, a research technique used to identify and summarize the trends in the extant literature and measure latent constructions of a research field (Duriau et al., 2007, Short and Palmer, 2008, Gaur and Kumar, 2018), allows scholars to develop a comprehensive understanding of the intellectual structure of a research field and guide them to develop a set of future research directions (Hota et al., 2020).

According to Donthu et al. (2021), the techniques for bibliometric analysis can be divided into two categories:(1) performance analysis and (2) science mapping. Descriptive performance analysis examines the contributions of research constituents (e.g., authors, articles, universities, countries, and journals) to a given field. On the other hand, science mapping displays the relationships between research constituents (Baker et al., 2021b). Different science mapping techniques, such as citation analysis, co-citation analysis, and bibliographic coupling, are instrumental in presenting the intellectual structure of a research field (Baker et al., 2021a).

This paper uses the Bibliographic coupling technique to identify the major research clusters in the GCC banking literature. Bibliographic coupling operates with the assumption that if two publications share common references, then they are similar in their content (Munim et al., 2020) and among all the citation-based bibliometric science mapping techniques, bibliographic coupling captures a research field most accurately (Boyack and Klavans, 2010). This paper employs the Biblioshiny package within the R studio software for performance analysis and VOSviewer software for bibliographic coupling.

3.1 Sample selection and data collection

This study used a two-stage data extraction approach (Bretas and Alon, 2021), first, we performed a topic search, a combination of title, abstract, author keyword and keywords plus, within the ISI Web of Science (WoS) academic journal database using a combination of the following keywords: ("Bank*" OR "Financial institution*" OR "financial intermedia*") AND ("GCC" OR "Gulf Countries"). WoS is a prominent academic database that includes five databases, recognizing many high-quality journals starting from 1900, covers more than 21,000 journals with over 174 million records and has been used by many previous influential bibliometric literature review articles (Bahoo et al., 2020, Maditati et al., 2018, Zamore et al., 2018). The initial search provided us with 351 articles. After filtering the resulting articles by WOS research categories (business finance or economics or business or management or international relationship), document type (articles only) and language (English only), we were left with 270 articles at the end of the first stage.

In the second step, we examined the 270 articles (through a review by two authors) to ensure their appropriateness for inclusion in further analysis. We only included the articles that explored the GCC banking sector as a whole or compared GCC banks with banks of other countries or regions. The articles that failed to qualify for the final dataset primarily focused on the stock market, insurance sector, or macroeconomic growth. Finally, 199 articles were selected for bibliometric analysis and their title, author name(s) and affiliation, journal name, number, volume, pages, date of publication, abstract and cited references were extracted for bibliometric analysis. Table 1 illustrates the detailed data searching and extraction process.

Table 1. Sample section process

	Criteria	Articles
1	("Bank*" OR "Financial institution*" OR "financial intermedia*") AND ("GCC" OR "Gulf Countries")	351
2	Refined by: Web of science categories: (business finance or economics or business or management or international relationship)	285
3	Refined by: Document types: article only	272
4	Refined by: Languages: English only	270
5	After manual exclusion by reading all the article abstract	199

After extracting the data for bibliometric analysis, we further select key articles for the content analysis. First, we selected 51 highly cited articles with ten or more total citations. We then conducted a detailed assessment of the articles and developed a content analysis matrix using MS Excel. Following the content analysis coding protocol suggested by Gaur and Kumar (2018), we have included the following information in our matrix: title, authors, year of publication, research themes, purpose and research questions, data type, data source, methodology, theories, key findings, and suggested future research directions.

4 Bibliometric analysis

4.1 Initial data statistics

The 199 articles in our sample were written by 367 authors and published in 89 journals. All these articles are collectively cited 2309 times, with an average citation per document of 11.60. The first paper in our dataset was published in 2004 in Service Industries Journal. The summary statistics of our final dataset are shown in Table 2.

Table 2. Summary statistics of the sample dataset

Timespan	2004:2022
Journals	89
Articles	199
Annual growth rate (%)	9.89
Total Citations	2309
Average citations per doc	11.60
References	8413
Author's Keywords	547
Authors	367
Authors of single-authored documents	36
Single-authored documents	49
Documents per Author	0.542

Figure. 1 illustrates the annual production of banking literature focused on the GCC region and yearly total citations. Though the first article was published in 2004, the GCC banking literature started rising in 2015 right after the historical oil price crash of 2014 (Siddiqui et al., 2020). The figures show a continuous growth in the GCC banking literature from 2015, especially there has been a big spike in recent years which depicts the growing importance of GCC region in the banking literature.

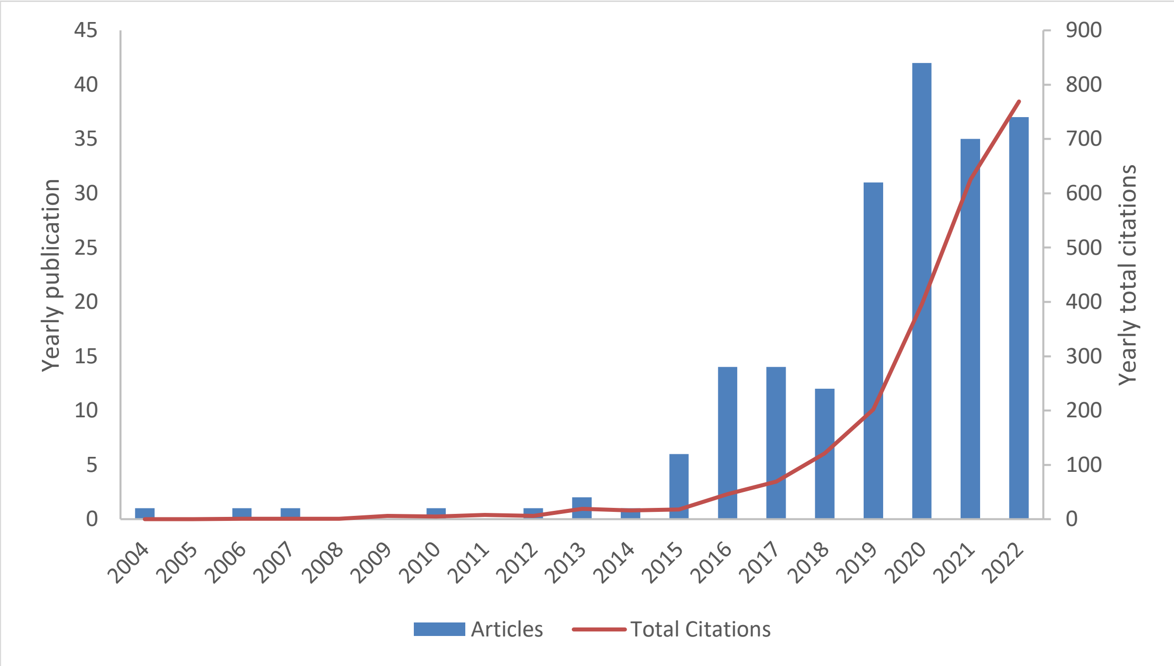

Figure 1. Yearly production of banking research in GCC region and total citations

4.2 Most relevant journals, articles, universities, and authors

Table 3 reports the top 20 journals that publish banking articles focused on the GCC region. These 20 journals have published at least three (3) or more articles and accounted for around 60% of the total citations (1386 total citations). Among the rest 69 journals, 21 journals published two (2) articles and 48 journals published one (1) article; however, those journals are not reported in this paper due to space limitations. The result shows that the Journal of Islamic Accounting and Business Research topped the list with 24 articles, followed by the International Journal of Islamic and Middle Eastern Finance and Management (18 articles), and the Pacific-Basin Finance Journal (six articles). However, articles from the International Journal of Islamic and Middle Eastern Finance and Management received the highest number of citations (243 total citations), followed by Research in International Business and Finance (207 total citations).

Table 3. Most productive journals

Rank	Journals	NP	h_index	TC
1	Journal of Islamic Accounting and Business Research	24	6	133
2	International Journal of Islamic and Middle Eastern Finance and Management	18	7	243
3	Pacific-Basin Finance Journal	6	6	146
4	Research in International Business and Finance	5	5	207
5	Journal of International Financial Markets Institutions & Money	5	4	161
6	Managerial Finance	5	4	81
7	International Journal of Emerging Markets	5	3	21
8	Applied Economics	5	3	16
9	Economic Systems	4	3	80
10	Journal of Islamic Marketing	4	2	24
11	International Journal of Accounting and Information Management	3	3	60
12	International Journal of Financial Studies	3	3	51
13	Global Finance Journal	3	3	48
14	International Journal of Managerial Finance	3	2	28
15	Borsa Istanbul Review	3	2	23
16	Journal of Risk and Financial Management	3	1	17
17	Journal of Economic and Administrative Sciences	3	3	15
18	International Journal of Finance & Economics	3	3	15
19	Cogent Economics & Finance	3	1	12
20	Asian Journal of Business and Accounting	3	2	5

NP = Number of publications, TC = Total citations

Table 4 lists the top ten (10) most cited banking articles from the GCC region, along with the names of their authors, journals, year of publication, total citations, and average total citations per year. Platonova et al. (2018) is the most cited article, with 173 total citations, followed by Srairi (2010) and Al-Muharrami et al. (2006) with 120 and 88 total citations respectively.

Table 4. Top ten (10) most cited articles

	Title	Authors (year)	Journal	TC	TC/t
1	The Impact of Corporate Social Responsibility Disclosure on Financial Performance: Evidence from the GCC Islamic Banking Sector	Platonova et al. (2018)	Journal of Business Ethics	173	28.83
2	Cost and profit efficiency of conventional and Islamic banks in GCC countries	Srairi (2010)	Journal of Productivity Analysis	120	8.57
3	Market structure and competitive conditions in the Arab GCC banking system	Al-Muharrami et al. (2006)	Journal of Banking & Finance	88	4.89
4	Islamic versus conventional banks in the GCC countries: A comparative study using classification techniques	Ben Khediri et al. (2015)	Research in International Business and Finance	75	8.33
5	A new inverse DEA method for merging banks	Gattoufi et al. (2014)	IMA Journal of Management Mathematics	70	7
6	Competition, concentration and risk taking in Banking sector of MENA countries	Gonzalez et al. (2017)	Research in International Business and Finance	61	8.71
7	Financial stability of Islamic banking and the global financial crisis: Evidence from the Gulf Cooperation Council	Alqahtani and Mayes (2018)	Economic Systems	55	9.17
8	Islamic bank efficiency compared to conventional banks during the global crisis in the GCC region	Alqahtani et al. (2017)	Journal of International Financial Markets Institutions & Money	51	7.29
9	What can we learn about Islamic banks efficiency under the subprime crisis? Evidence from GCC Region	Belanes et al. (2015)	Pacific-Basin Finance Journal	48	5.33
10	Efficiency and stability: A comparative study between Islamic and conventional banks in GCC countries	Miah and Uddin (2017)	Future Business Journal	47	6.71

TC = Total citations, TC/t = Average citations per year

Table 5 reports the top 20 most impactful authors within our sample dataset along with their current affiliation. The table reveals that Saif-Alyousfi from Taiz University is the top author with the highest number of articles (seven articles), followed by Alqahtani and Buallay (six articles each). However, Mehmet Asutay from Durham University is our sample's most cited author (203 total citations from four articles).

Table 5. Most impactful authors (sort by number of publications)

	Author	Current affiliation	NP	h_index	TC
1	Saif-Alyousfi Ayh	Taiz University	7	5	86
2	Alqahtani F	National Development Fund	6	6	176
3	Buallay A	Brunel University	6	5	117
4	Mayes Dg	University of Auckland	4	4	159
5	Grassa R	Higher Colleges of Technology	4	4	89
6	Kamarudin F	University of Putra Malaysia	4	4	82
7	Hammoudeh S	Drexel University	4	3	37
8	Asutay M	Durham University	4	3	203
9	Brown K	Monash University	3	3	104
10	Miah Md	University of Nizwa	3	2	70
11	Saha A	Flame University	3	3	60
12	Al-Yahyaee Kh	Sultan Qaboos University	3	2	38
13	Al-Muharrami S	Sultan Qaboos University	2	2	89
14	Ben Khediri K	University Of Carthage	2	2	63
15	Ismail Knik	University Utara Malaysia	2	2	49
16	Molyneux P	Bangor University	2	2	48
17	Alandejani M	King Abdulaziz University	2	2	40
18	Nassir Am	Xiamen University of Malaysia	2	2	32
19	Al-Gasaymeh A	Applied Science Private University	2	2	31
20	Ousama Aa	Qatar University	2	2	30

Among the 20 most productive universities (Table 6) that publish articles on the GCC region banking sector, Qatar University topped the list with 16 articles, followed by Ahlia University (14 articles) and Manouba University (11 articles). Among these 20 universities, eight universities (40%) are from the GCC region, 15 universities (75%) are from developing and emerging countries, and five universities (25%) are from developed countries.

Table 6. Most productive universities based on number of publications

Rank	University	Articles	Country
1	Qatar University	16	Qatar
2	Ahlia University	14	Bahrain
3	Manouba University	11	Tunisia
4	King Abdulaziz University	10	Saudi Arabia
5	Sultan Qaboos University	9	Oman
6	Brunel University	8	United Kingdom
7	Taibah University	8	Saudi Arabia
8	University Utara Malaysia	8	Malaysia
9	Taiz University	7	Yemen
10	University of Portsmouth	7	United Kingdom
11	Durham University	6	United Kingdom
12	University of Tunis	6	Tunisia
13	International Islamic University	5	Malaysia
14	Saudi Electronic University	5	Saudi Arabia
15	University of Hafr Al Batin	5	Saudi Arabia
16	Universiti Malaysia Terengganu	5	Malaysia
17	University of Sharjah	5	United Arab Emirates
18	University of Putra Malaysia	4	Malaysia
19	Drexel University	4	USA
20	University of Auckland	4	New Zealand

Table 7 lists the 22 countries that contributed to the GCC region banking literature with a minimum of two (2) articles. Saudi Arabia is the country with the highest number of publications (29 articles), followed by the United Arab Emirates (23 articles) and the United Kingdom (21 articles).

Table 7. Most productive countries based on number of publications (Table created by authors)

Ranks	Country	NP	Ranks	Country	NP
1	Saudi Arabia	29	12	India	4
2	UEA	23	13	Kuwait	4
3	United Kingdom	21	14	Pakistan	4
4	Tunisia	20	15	Yemen	4
5	Qatar	16	16	France	4
6	Bahrain	15	17	Italy	2
7	Malaysia	15	18	Cyprus	2
8	Oman	7	19	Turkey	2
9	USA	7	20	China	2
10	Australia	6	21	Indonesia	2
11	Jordan	4	22	Spain	2

Table 8 reports the top 20 journals referred by the articles within our sample dataset. The table shows 706 articles from the Journal of Banking and Finance, followed by the Journal of Financial Economics (254) and the Journal of Finance (192).

Table 8. Most referred journals (Table created by authors)

Rank	Sources	Articles
1	Journal of Banking and Finance	706
2	Journal of Financial Economics	254
3	Journal of Finance	192
4	International Journal of Islamic and Middle Eastern Finance and Management	178
5	Journal of International Financial Markets Institutions & Money	144
6	Journal of Intellectual Capital	143
7	Journal of Econometrics	141
8	Pacific-Basin Finance Journal	141
9	Research in International Business and Finance	128
10	Journal of Money, Credit and Banking	114
11	Journal of Business Ethics	100
12	Journal of Financial Services Research	99
13	American Economic Review	90
14	Journal of Islamic Accounting and Business Research	88
15	Journal of Financial Intermediation	86
16	Emerging Markets Review	83
17	Journal of Accounting and Economics	80
18	Journal of Financial Stability	76

19	Economic Modelling	73
20	Econometrica	69

4.3 *Bibliographic coupling*

Figure 2 depicts the bibliographic coupling network mapping for the GCC region banking research field, which is dominated by five major research clusters. This bibliographic coupling network mapping is constructed using 52 articles with at least ten or more citations. Based on our content analysis of these articles within each cluster, we named the primary research cluster as 1. bank efficiency (represented by green lines), 2. corporate governance and disclosure (represented by red lines), 3. performance and risk-taking (represented by blue lines), 4. systemic risk, bank stability and risk spillovers (represented by yellow lines), and 5. intellectual capital (represented by purple lines). The next section discusses these research clusters in detail.

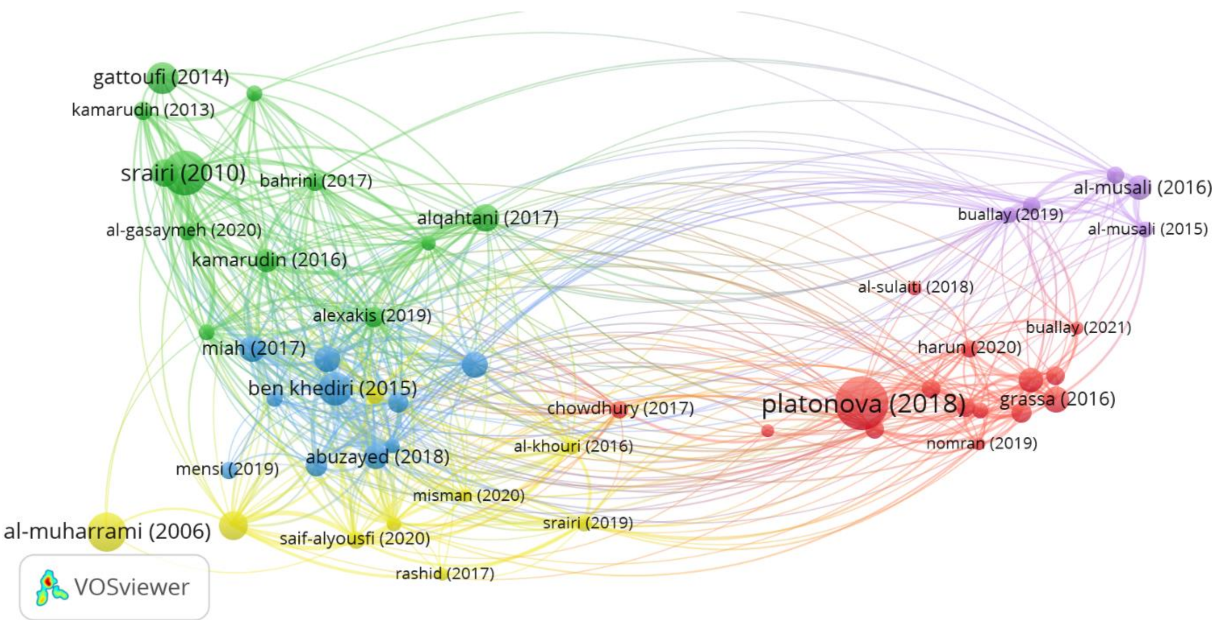

Figure 2. Major research cluster identified through bibliometric coupling

5 Major Research Themes

This section discusses the five major research clusters within GCC region banking literature. A detailed analysis of the top-cited papers is also given in Appendix 1.

5.1 Bank Efficiency

This cluster covers studies that investigate the efficiency of the commercial banks operating in the GCC region by taking different angles, such as a comparison between Islamic and conventional banks (Srairi, 2010, Kamarudin et al., 2013), impact of global financial crisis (Alqahtani et al., 2017a, Belanes et al., 2015, Alexakis et al., 2019), merger and acquisition in banking (Gattoufi et al., 2014), and country-level governance (Kamarudin et al., 2016, Al-Gasaymeh, 2020). Srairi (2010) is the most cited article in this cluster (120 citations) followed by Gattoufi et al. (2014) with 70 citations.

Srairi (2010) finds that GCC banks are relatively more efficient at generating profits than controlling costs, and conventional banks are more efficient than Islamic banks in terms of both cost and profit efficiency levels. Kamarudin et al. (2016) find similar revenue, cost, and profit efficiency results. A possible reason for Islamic banks' lower cost performance is the higher costs associated with maintaining the Shariah Supervisory Board and developing complex Shariah-compliant products (Alexakis et al., 2019).

Alqahtani et al. (2017a) find that during the global financial crisis (GFC), Islamic banks were more cost-efficient than conventional banks and managed to narrow down the inherent gap in terms of profit efficiency. This result supports the theoretical argument that Islamic banks were less exposed to the GFC due to their constraints on trading prohibited assets under Islamic finance principles. However, when the financial shock spilt over to the real economy during the later stage of the GFC, Islamic banks suffered more than conventional banks in terms of profit efficiency and lost the cost-efficiency superiority gained during the GFC (Alqahtani et al., 2017a). This result may suggest that Islamic banking is closely linked to real economic conditions, while conventional banking is more closely linked to the global financial industry.

Kamarudin et al. (2016) report that greater voice and accountability, government effectiveness, and the rule of law enhance the revenue efficiency of both Islamic and conventional banks. Al-Gasaymeh (2016) reports that banks from low country risk and low market concentration are more efficient, while Al-Gasaymeh (2020) reports that enhancing economic freedom is crucial for this region to attract more investments and create a more efficient banking system.

5.2 Corporate Governance and Disclosure

This cluster explores studies investigating the relationship between corporate governance and the financial performance of commercial banks in the GCC region. Specifically, these articles cover different corporate governance mechanisms (Kolsi and Grassa, 2017, Al-Malkawi and Pillai, 2018), Shariah governance (Grassa, 2016, Ajili and Bouri, 2018, Elamer et al., 2020, Nomran and Haron, 2019), board structure (Bukair and Rahman, 2015), corporate social responsibility (Platonova et al., 2018, Harun et al., 2020), and sustainability reporting (Buallay and Al-Ajmi, 2020). The most cited article in this cluster is Platonova et al. (2018) followed by Grassa (2016) with 173 and 37 total citations respectively.

Bukair and Rahman (2015) find that board size and composition have a negative effect, while the separation of the CEO and chairman role have no effect, and the independence of chairman has a positive effect on GCC banks' performance. Srairi (2019) reports that the average transparency index of Islamic banks in GCC countries is relatively low, these banks must improve their transparency through better disclosure, especially on both corporate governance and Sharia governance. Grassa (2016) reports that the credit ratings of Islamic banks in Southeast Asia are higher than GCC Islamic banks. On the other hand, Elamer et al. (2020) state that GCC banks have a more robust Shariah governance structure and higher operational risk disclosures compared to non-GCC banks from the Middle East and North Africa (MENA) region.

Platonova et al. (2018) find a significant positive relationship between corporate social responsibility disclosure (CSRD) and the financial performance of GCC Islamic banks. In a similar study, Harun et al. (2020) report a significant positive association between board size and CSRD practices and a significant negative association between chief executive officer (CEO) duality with CSRD. However, both studies report a lack of corporate social responsibility disclosure practices among the Islamic banks in GCC countries and conclude that Islamic banks should enhance their CSRD practices to ensure that their operations and activities are in line with Islamic banking principles rather than diverging from such ethical behaviour for the sake of making more profit (Platonova et al., 2018, Harun et al., 2020). Buallay and Al-Ajmi (2020) show that audit committee (AC) size, independence and number of meetings positively impact sustainability disclosure, while, interestingly, AC members' financial expertise restricts sustainability disclosure.

5.3 Performance and Risk-taking

This cluster covers studies that investigate the performance and risk-taking behaviour of the commercial banks in the GCC region from different perspectives, such as comparison between Islamic and conventional banks (Ben Khediri et al., 2015, Alqahtani et al., 2017b), nonperforming loans (Alandejani and Asutay, 2017), diversification (AlKhouri and Arouri, 2019, Ashraf et al., 2016), loss provisioning (Zoubi and Al-Khazali, 2007), market structure (Al-Muharrami et al., 2006, Saif-Alyousfi et al., 2020), and transparency (Srairi, 2019). Al-Muharrami et al. (2006) is the most cited article within this cluster (88 total citations) followed by Ben Khediri et al. (2015) with 75 total citations.

Alqahtani et al. (2017b) investigate the operating performance of Islamic and conventional banks (before, during and after the 2007 global financial crisis), and find that Islamic banks are better capitalised, more liquid and have higher intermediation levels, while conventional banks out-perform Islamic banks in management efficiency, fee income, return on shareholders' equity, and asset quality. In a similar study, Ben Khediri et al. (2015) find that Islamic banks are more profitable, more liquid, better capitalised, have less credit risk, are less involved in off-balance sheet activities, and have more operating leverage. However, Gonzalez et al. (2017) show that Islamic banks are riskier than conventional banks due to the complexity of the Islamic banking model, finance contracts, and operational limitations on investment and risk management activities. Alandejani and Asutay (2017) find that Islamic Banks' lending portfolios in the GCC region are highly concentrated towards real estate and construction projects, which increases the risk exposure of Islamic banks. Hence, they suggest the GCC Islamic banks should diversify their lending portfolio to other sectors within the real economy.

Ashraf et al. (2016) find that GCC banks engaged more in fee-based non-traditional activities are less risky than banks that generate their incomes mainly from traditional intermediation activities. Abuzayed et al. (2018) find evidence of a non-linear relationship between non-interest income and stability, indicating that a higher level of diversification reduces bank risk. On the contrary, AlKhouri and Arouri (2019) suggest that investors should rely more on banks' loan specialization while valuing banks rather than on their ability to diversify across revenues and non-interest income. They report that a higher level of non-interest income diversification has a negative association with the performance of Islamic banks, while it does not affect conventional banks. Additionally, they find asset diversification positively impacts Islamic banks and is valued positively by investors; however, it is valued negatively by conventional banks' investors.

Saif-Alyousfi et al. (2020) find that higher market power, lower level of competition and lower concentration in the banking market increase bank's risk-taking and decrease the stability of lower capitalised, less liquid and small banks in contrast to the highly capitalised, highly liquid and large banks. Ashraf et al. (2016) report that a higher concentration of ownership in any type of shareholding is associated with higher insolvency risk. Srairi (2019) finds that increased transparency has significantly reduced insolvency risk for Islamic banks. Al-Shboul et al. (2020) find that conventional banks are less exposed to political risk than Islamic banks. Gonzalez et al. (2017) find that an increase in competition leads to an increase in the insolvency risk for the banks in the GCC region.

5.4 Systemic risk, bank stability, and risk spillovers

This cluster includes studies focusing on banking sector systemic risks and stability, and risk spillover to the banking sector from commodity markets. Alqahtani and Mayes (2018) is the most cited article in this cluster, with 37 total citations, followed by Abedifar et al. (2017) with 28 total citations.

Abedifar et al. (2017) explore the systemic importance of Islamic banking and the stability of dual banking systems and find that the conventional banks with Islamic windows are the most systemically vulnerable and interconnected. While Alandejani et al. (2017) argue that Islamic

Banks in the GCC region are more vulnerable to the risk of failure than conventional banks because conventional banks are larger and more associated with government ownership. Similarly, Alqahtani and Mayes (2018) find that conventional banks are more stable than Islamic banks; however, the difference is significant for large banks but not for small ones. Abidi et al. (2022) find that robust internal governance mechanisms mitigate systemic risk for GCC region banks.

Mensi et al. (2019) examine the dynamic risk spillovers and hedging effectiveness between two important commodity markets, oil and gold, and the bank stock indices for GCC countries. They find that oil, gold, and the conventional bank stock indexes of Saudi Arabia, Kuwait and Qatar are net contributors of volatility spillover to the other markets, while all the Islamic bank indexes and the conventional bank indexes of UAE and Bahrain are net recipients of volatility spillovers. Maghyereh and Abdoh (2021) find oil supply shocks cause economic instability and increase banking sector systemic risk in the GCC region.

5.5 Intellectual Capital

This cluster covers studies that investigate the impact of intellectual capital (IC) on the financial performance of commercial banks operating in the GCC region. The most cited article within this cluster is Al-Musali and Ismail (2016) followed by Ousama et al. (2020), with 34 and 18 total citations respectively.

Al-Musali and Ismail (2016) report that IC positively impacts banks' financial performance indicators in all the GCC countries, while Qatar has the best IC performance and Bahrain has the least. Ousama et al. (2020) find that the human capital (HC) component of IC has a higher impact than the other two components, i.e., capital employed (CE) and structural capital (SC).

In a similar study, Buallay et al. (2020) find that HC and CE influence operational performance; SC and CE influence financial performance, while market performance is influenced only by relational capital (RC).

Interestingly, Al-Musali and Ismail (2015) find that board demographic diversity, educational level and nationality have no association with the IC performance of the banks in the GCC region. A possible reason behind this insignificant relationship can be the presence of high information asymmetry within the corporate governance environment of the GCC region (Chahine, 2007) which hinders the efficiency of the qualified board members. Nawaz (2017) finds that IC helps GCC Islamic Banks to improve their chances of survival and maintain their profitability before and after the global financial crisis. Surprisingly, the Shariah governance, which is the primary governance mechanism of IBs, has no significant role in this result (Nawaz, 2017).

6 Future research directions

In this section, we explored future research avenues for GCC region banking literature. Through our content analysis of the highly cited papers, we first identified the future research directions suggested by existing literature and converted them in to research questions (Appendix 2). Finally, we identified several gaps in knowledge in the GCC banking literature and proposed our suggestions for future research.

Scholars suggested that the relationship between corporate governance and financial performance can be further explored by adding other essential governance variables such as ownership structures, CEO compensation, gender diversity and Shariah Supervisory Board (SSB) members’ remuneration (Ajili and Bouri, 2018, Kolsi and Grassa, 2017). As the GCC banking sector is highly concentrated, we suggest that future research may investigate how different levels of ownership concentration and types of majority shareholders moderate the relationship between corporate governance and bank performance.

GCC banks rely heavily on chief executive officers (CEOs) and influential board members for decision-making and those individuals are often appointed to steer the bank in conformity with the government's economic and political strategies (Ousama et al., 2020). Therefore, future studies should focus more on CEO and board members' attributes, political connections, and influence. Besides empirical studies, qualitative studies based on interviewing CEOs, top executives, and influential board members may shed more light on the uniqueness of the GCC banking sector. Bank directors from the GCC region work in an environment characterized by high information asymmetry (Chahine, 2007), and do not receive sufficient and appropriate information about corporate strategy (Al-Musali and Ismail, 2015). Future research may investigate whether this opaque environment leads to agency problems. Chahine and Tohmé (2009) claim that in the GCC region, the local directors are better connected with the top managers; hence there might be a possibility that the foreign directors are not able to make significant contributions to GCC banks. Future research may investigate whether foreign board members experience difficulties promoting better corporate governance mechanisms in the GCC region.

Hofstede (1993) argues that organisations are culture-bound, and managers are not separable from their indigenous cultures. GCC countries have unique social and cultural environments influenced by high group-ism, masculinity, and hierarchical relationships (Kabasakal and Bodur, 2002, Al-Omari, 2008, Aldulaimi, 2019) which differs from the developed countries. Future studies may focus on the influence of national and organisational culture on GCC region banks using different cultural models such as Hofstede's cultural dimensions and Maslow's hierarchy of needs. Also, future research can focus on the lack of diversity in GCC banks' boards, as they do not include ethnic groups in the boards, and there is a weak presence of women on those boards (Al-Musali and Ismail, 2015).

Since the GCC region is one of the world's largest Islamic banking markets, a large body of banking literature based on this region either solely focuses on Islamic banking or compares Islamic banking with conventional banking from different angles. However, the findings from the studies raise several questions about the effectiveness of Islamic banking. The scope of Islamic corporate governance extends beyond conventional corporate governance practices and operates largely in line with the objectives of Islamic law (Obid and Naysary, 2016). In Islamic banking, the Shariah Supervisory Board (SSB) is the primary corporate governance (CG) mechanism of IBs (Ajili and Bouri, 2018). Belanes et al. (2015) find that though Islamic banks have succeeded in mobilizing large amounts of deposits, especially during the GFC, this phenomenon cannot be explained by the better performance of Islamic banks compared to their conventional peers. Instead, the religious motivations of the depositors, who are looking for Sharia compliance, contributed to the increase in deposit volume. Ajili and Bouri (2018) and Nawaz (2017) conclude that Shariah governance falls short of explaining the growth trends in the Islamic banking industry. Similarly, Grassa (2016) reports that Islamic banks' credit ratings are negatively associated with the supervisory role of the Shariah board. Additionally, Platonova et al. (2018) find that most IBs report significantly less than the level expected by Islamic ethics. So, there might be a need for further research on the usefulness of the Shariah Supervisory Board.

Finally, as the GCC banking sector is very dynamic and highly connected with the Global economy, future research may also focus on how recent world events, such as COVID-19, the Russia-Ukraine war, hikes in interest rates and rising inflation, affect the GCC banking sector and how GCC banks cope with those adverse situations.

7 Conclusion

This paper comprehensively analyses influential aspects and conceptual structure of banking research on the GCC region by systematically reviewing a sample of 199 articles published in 89 journals between 2004 and 2022 using bibliometric and content analysis methods. This sample of 199 articles was extracted from the Web of Science database. To our knowledge, this is the first literature review paper on GCC region banking activities.

The results of bibliometric citations analysis, conducted using Biblioshiny Package of R software, show that the Journal of Islamic Accounting and Business Research and the International Journal of Islamic and Middle Eastern Finance and Management are the top two journals in terms of the number of articles published, however, articles from International Journal of Islamic and Middle Eastern Finance and Management received the highest number of citations. Saif-Alyousfi from Taiz University is the top author with the most articles, but Mehmet Asutay from Durham University is the most cited author within our sample. By employing the bibliographic coupling technique using VOSviewer software, this paper finds five major research clusters within GCC region banking literature: i) bank efficiency, ii) corporate governance and disclosure, iii) performance and risk-taking, iv) systemic risk, bank stability and risk spillovers, and vi) intellectual capital. The paper provides a detailed content analysis of these research clusters, identifies future research agenda suggested by scholars and explores additional gaps in knowledge.

This paper is not free from any bias or limitation. The bibliometric analysis treats the importance and influence of an article based on its citations, but it takes time for a research article to be recognised for its true potential. So, more recent articles might not show their true potential in a bibliometric study. Our analysis is also limited to articles indexed in the Web of Science database and written in English. Though the Web of Science database encompasses a wide range of multidisciplinary journals, there is a chance that some relevant articles are not included in the Web of Science database or written in another language, such as Arabic. Moreover, we could not discuss the findings of all the articles in the content analysis section due to space limitations. Future studies may incorporate other databases and articles written in other languages or use other literature review techniques to investigate the intellectual structure of GCC region banking literature.

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Appendix - 1. Content analysis of top cited papers, selection criteria Total citations (TC) = 10 or above

Author(s)	TC	Sample size and period	Theory	Data Source	Methods	Findings
Platonova et al. (2018)	173	24 IBs 2000-2014	Stakeholder theory	Bankscope Annual Reports	Panel regressions	CSR disclosure positively impact the financial performance of GCC Islamic banks.
Srairi (2010)	120	71 banks 1999-2007			Stochastic frontier analysis (SFA)	GCC banks are relatively more profit efficient than at controlling costs. Conventional banks are more efficient than Islamic banks, in terms of both cost and profit efficiency.
Al-Muharrami et al. (2006)	88	52 banks 1993-2002		Bankscope Annual Reports	Dynamic P–R model (Panzar and Rosse)	Kuwait, Saudi Arabia and UAE have moderately concentrated markets while Qatar, Bahrain and Oman have highly concentrated markets.
Ben Khediri et al. (2015)	75	44 CBs & 18 IBs 2003-2010		Bankscope	Linear discriminant analysis, Logistic regression, Neural network	Islamic banks are more profitable, more liquid, better capitalized, have lower credit risk, more operating leverage and less involved in off-balance sheet activities than conventional banks.
Gattoufi et al. (2014)	70	42 banks			Inverse Data Envelopment Analysis	The bank that willing to merge/acquire another bank needs to decide on the inputs and/or outputs level if an efficiency target for the new banking unit is set.
Gonzalez et al. (2017)	61	365 banks 2005-2012		Bankscope	Panel regressions	Increase in competition leads an increase in the insolvency risk for GCC banks.

Author(s)	TC	Sample size and period	Theory	Data Source	Methods	Findings
Alqahtani et al. (2017a)	55	80 banks 1999 - 2012	Agency theory	Bankscope	Data envelopment analysis (DEA), Stochastic frontier analysis (SFA), Panel Regression	During the global financial crisis (GFC), Islamic banks were more cost efficient that conventional banks. After the GFC, Islamic banks suffered more than the conventional banks in terms of both profit and cost efficiency.
Alqahtani et al. (2017b)	51	101 banks 1998-2012		Bankscope	Panel regressions	Islamic banks performed better in the early stages of GFC, but they performed worse in the later stages with the real economic downturn.
Belanes et al. (2015)	48	30 IBs 2005 to 2011		Annual reports	Data envelopment analysis (DEA)	GFC had a negative impact on the efficiency of Islamic banks in the GCC region.
Miah and Uddin (2017)	47	76 banks 2005-2014			Ratio analysis, Stochastic Frontier Analysis (SFA), Pooled OLS regression	Conventional banks are more efficient in managing cost than their Islamic counterparts.
Grassa (2016)	37	80 Ibs 2005 - 2011	Agency theory	Annual reports, Zawya data base, Bankscop	Logistic regression	Credit rating for GCC Islamic banks are lower than the credit rating of Southeast Asian Islamic banks.
Alqahtani and Mayes (2018)	37	76 banks 2000-2013		OSIRIS	Panel regressions	Conventional banks are more stable than Islamic banks,

Author(s)	TC	Sample size and period	Theory	Data Source	Methods	Findings
Al-Musali and Ismail (2016)	34	73 banks 2008-2010	Resource-based theory		Value- added intellectual coefficient method OLS regression	Intellectual Capital has a positive impact on banks' financial performance in all the GCC countries.
Zoubi and Al-Khazali (2007)	33	47 banks 2000-2003		Annual reports	Single stage model, Pooled OLS regression	Banks in the GCC region, both Islamic and conventional, perform income smoothening through loss provisioning.
Abuzayed et al. (2018)	33	107 banks 2001-2014		Bankscope	Panel regressions	Income or asset diversification does not reduce banks’ insolvency risk. Conventional banks appear to be more adversely impacted on the risk side than Islamic banks.
Bukair and Rahman (2015)	32	40 IBs 2008-2011	Stakeholder theory		Panel regressions	Size and composition of the board have a negative effect, separation of CEO and chairman role have no effect, and the independence of chairman has positive effect on bank performance.
Kamarudin et al. (2016)	29	74 banks 2007-2011	Regulation theory	Bankscope	Data envelopment analysis (DEA) Panel regression	Greater voice and accountability, government effectiveness, and rule of law enhance the revenue efficiency of both Islamic and conventional banks.
Abedifar et al. (2017)	28	79 listed banks 2005-2014		Bankscope	Panel regressions	Conventional banks with Islamic windows are the most interconnected and least resilient sector to a systemic event.

Author(s)	TC	Sample size and period	Theory	Data Source	Methods	Findings
Ajili and Bouri (2018)	24	44 IBS 2010 - 2014	Agency theory, Stewardship theory, Stakeholder theory	Annual reports	Panel regressions	No statistically significant association between the Corporate Governance quality and Islamic Banks performance.
Alandejani et al. (2017)	23	39CBs & 18 IBs 1995-2011		Bankscope	Survival-time analysis	Islamic Banks are more likely to fail than Conventional Banks.
Alexakis et al. (2019)	22	43 CBs & 19 IBs 2006-2012		Bankscope	Financial ratio analysis Malmquist productivity analysis	Islamic banks have lower cost performance and profit performance. No significance difference in revenue performance.
Ashraf et al. (2016)	21	125 banks 2000 - 2011		Bankscope	Panel regressions	Higher concentration of ownership is associated with higher insolvency risk. Banks with higher fee-based activities are more financially stable.
Elamer et al. (2020)	20	63 IBS 2006-2013	Agency theory, Signalling theory, Legitimacy theory, Resource dependence theory	Bankscope	Panel regressions	GCC banks have stronger governance structure and higher level of operational risk disclosures compared to other MENA countries banks.

Author(s)	TC	Sample size and period	Theory	Data Source	Methods	Findings
Kamarudin et al. (2013)	20	47 CBs & 27IBs 2007-2011		Bankscope	Data envelopment analysis (DEA)	Conventional banks have higher efficiency levels for all three efficiency measures.
Kolsi and Grassa (2017)	20	29 IBs 2004-2012	Prospect theory, Agency theory, Alignment theory	Annual report	Panel regressions	Corporate governance structures significantly impact the discretionary loan loss provision in Islamic Banks.
Buallay and Al-Ajmi (2020)	19	59 listed banks 2013-2017	Legitimacy theory, Agency theory, Resource dependency theory	Annual reports, Bloomberg database	Panel regressions	A negative association between financial expertise and sustainability reporting.
Bahrini (2017)	19	33 IBs 2007-20012		Annual reports	Data Envelopment Analysis (DEA)	GCC Islamic banks had stable efficiency scores during the global financial crisis and in the early post-crisis period.
Harun et al. (2020)	18	39 Ibs 2010-2014	Stakeholder theory, Agency theory, Signalling theory, Legitimacy theory	Annual reports Bankscope Data stream Company websites	Panel regressions	Very low level of corporate social responsibility disclosure practices among the Islamic banks in GCC countries.

Author(s)	TC	Sample size and period	Theory	Data Source	Methods	Findings
Saif-Alyousfi et al. (2020)	18	70 banks 1998-2016	Theory of competition-fragility, Theory of competition-stability	Bankscope		A higher level of competition and the greater degree of concentration leads to higher insolvency risk.
Ousama et al. (2020)	18	31 IBs 2011-2013	Resource-based theory	Annual reports	Pooled OLS	Intellectual Capital has a positive impact on the financial performance of Islamic banks.
Buallay et al. (2020)	17	59 listed banks 2012-2016	Resources-based theory	Annual reports Other reports	Modified Value-added intellectual coefficient method Pooled OLS	Positive relationship between intellectual capital efficiency and financial performance (ROE) and market performance
Mensi et al. (2019)	17	2006-2016		Bloomberg database	DECO-FIGARCH model Spillover index	Weak average conditional correlation between all the GCC bank stock indices and oil and gold markets.
Alandejani and Asutay (2017)	17	51 banks 2005-2011		Bankscope	Panel regressions	Sectoral distribution of financing portfolio has an adverse impact on the non-performing loans and credit risk exposure of Islamic banks.
Chowdhury et al. (2017)	17	29 IBs 2005-2013		Bankscope	Panel regressions	Equity financing has significant impact on the banks' performance
Al-Gasaymeh (2020)	16	90 banks 2003-2010		Bankscope	Stochastic frontier analysis (SFA)	Economic freedom helps in reducing potential bank costs.

Author(s)	TC	Sample size and period	Theory	Data Source	Methods	Findings
Al-Gasaymeh (2016)	15	75 banks 2007-2014		Bankscope	Stochastic frontier analysis (SFA) Panel Regression	Banks with low country risk, and low market concentration perform more efficiently.
Al-Musali and Ismail (2015)	15	44 banks 2008-2010	Upper echelon theory, Resource dependency theory	Annual reports	Value-added intellectual coefficient method Hierarchical regression	No evidence that board diversity has an positive impact on Intellectual Capital performance.
Aghimien et al. (2016)	15	43 banks 2007 - 2011		Bankscope	Data envelopment analysis (DEA)	Most of the GCC banks are operating within an optimal scale of efficiency
Al-Malkawi and Pillai (2018)	15	22 IBs 2005-2015	Agency theory, Alignment theory, Property rights theory,	Annual report	Panel regressions	Five conventional corporate governance mechanisms have statistically significant relationship with Islamic Bank's Financial Performance.
Buallay et al. (2019)	14	21 listed IBs and 38 listed CBs 2012-2016	Resources-based theory	Annual reports	Modified Value-added intellectual coefficient method Panel regression	Islamic banks - positive relationship between Intellectual Capital (IC) and financial performance and market performance. Conventional banks - positive relationship between IC and operational performance and financial performance.
Miah and Suzuki (2020)	14	18 IBs 2015-2016		Annual reports	Comparative analysis	Islamic banks need to increase participatory financing to uphold the true spirit of Islamic finance.

Author(s)	TC	Sample size and period	Theory	Data Source	Methods	Findings
Srairi (2019)	14	29 IBs 2013-2016		Bankscope	Panel regressions	Lack of transparency related to Islamic banks corporate governance, Sharia governance and risk operations.
Al-Shboul et al. (2020)	13	191 CBs & 65 IBs 2008-2017		Bankscope	Panel regressions	Islamic banks in the GCC region are less exposed to political risk compared with those operating in other MENA countries.
AlKhouri and Arouri (2019)	13	22 listed Ibs & 47 listed CBs 2003-2015		Bloomberg database	Panel regressions	Non-interest income diversification has a negative while asset-based diversification has a positive impact on banks' performance.
Mohanty et al. (2016)	13	30 Ibs & 13 CBs 1999-2010		Bankscope	Heteroskedastic stochastic frontier analysis (HSF)	Cost and profit efficiencies of Islamic banks are more volatile than that of conventional banks.
Al-Khouri and Arouri (2016)	12	59 Banks 2004-2012		Bloomberg GulfBase Annual reports	Panel regressions	Stable banks tend to expand credit faster, and are more profitable, however, after a certain level of credit growth, banks become less stable.
Al-Sulaiti et al. (2018)	12	24 IBs 2012-2015		Annual reports	Comparative analysis using disclosure indexes	Islamic banks in Qatar tend to be more complied compared to the Islamic banks in Bahrain.
Misman and Bhatti (2020)	10	40 IBs 2000 - 2011		Bankscope	Panel regressions	Financing quality positively effect credit risk. Larger IBs owned more assets with lower credit risk compared to smaller IBs.
Rashid et al. (2017)	10	39 IBs 2009-2014	Contingency theory	Bankscope Annual reports	Panel regressions	liquidity risk management in Islamic banks is dependent upon past liquidity condition, bank size

Author(s)	TC	Sample size and period	Theory	Data Source	Methods	Findings
						and loan loss provision, growth of broad money and growth of GDP.
Nomran and Haron (2019)	10	45 Ibs 2007-2015	Agency theory	Bankscope	Panel regressions	Shariah governance practices for IBs in Southeast Asia are stronger compared to GCC IBs.
Alfadli and Rjoub (2020)	10	62 listed banks 2011-2017	Market power theory, Efficiency structure theory, Portfolio theory	ORBIS	Panel regressions	Efficiency, credit risk, diversification and concentration ratio have negative impact while capital adequacy ratio has positive impact on banks performance.

Appendix - 2. Future research questions suggested by scholars (Table created by authors)

Theme	Future research questions	Author(year)
Efficiency	What is the impact of off-balance sheet activities / non-traditional banking activities on the efficiency of GCC banks?	Srairi (2010)
	What are the differences between domestic and foreign banks, and state-owned banks versus private banks in terms efficiency in GCC region?	Srairi (2010)
	How banking regulations, and liberalization of state-owned banks impact bank efficiency?	Al-Gasaymeh (2020)
Corporate Governance and disclosure	How to standardise and unify the financial and annual reports of Islamic banks?	Platonova et al. (2018)
	What is the impact of Shariah governance on the risk-taking behaviours of Islamic banks?	Grassa (2016)
	What benefits Shariah governance brings to equity shareholders of Islamic banks?	Grassa (2016)
	What are the differences between Islamic banks operating in Islamic countries and Western countries?	Bukair and Rahman (2015)
	How the top five largest shareholders and managerial shareholdings impact the performance of Islamic banks?	Bukair and Rahman (2015)
	How ownership structures, CEO compensation, gender diversity and remuneration of Shariah Supervisory Board members' impact the the financial performance of Islamic Banks?	Ajili and Bouri (2018)
	How CEO bonus, experience, and gender impact earnings management practice of GCC banks?	Kolsi and Grassa (2017)
	To what extent Islamic Banks use real earnings management with Murabaha, Mudaraba, and Musharaka transactions?	Kolsi and Grassa (2017)

Theme	Future research questions	Author(year)
	How Sharia supervisory boards and governance structure affect Sharia non-compliance risk?	Elamer et al. (2020)
	How audit committee, and risk committee influence the operational risk disclosures practices?	Elamer et al. (2020)
	How Audit Committee attributes affect other forms of reporting, such as integrated reporting and intellectual capital reporting?	Buallay and Al-Ajmi (2020)
	What are the impacts of different board attributes on sustainability reporting over time?	Buallay and Al-Ajmi (2020)
	What are the non-economic consequences of corporate social responsibility disclosure in terms of banks' image and reputation?	Harun et al. (2020)
	How may the reporting of Zakat payment impact the performance of Islamic banks?	Nomran and Haron (2019)
Intellectual Capital	How different attributes of CEO and the board effect the performance of intellectual capital?	Ousama et al. (2020)
	Does foreign board members experience difficulties in promoting better corporate governance and adding value to the intellectual capital performance of GCC banks.	Al-Musali and Ismail (2015)
	What role independent directors play in developing IC performance?	Al-Musali and Ismail (2015)
	Whether the intellectual capital performance dynamics is differed between pre- and post-financial crisis period?	Buallay et al. (2019)
	How to enact a clear and mandatory law related to Intellectual capital protection and reporting?	Buallay et al. (2020)