

PERFORMANCE AND PROFITABILITY OF LOCAL BANKS: THE CASE OF THE EMERGING MARKET

Sami Al Kharusi *, Sree Rama Murthy Y **, Alya Al Foori **

* Corresponding author, Economics and Finance Department, College of Economics and Political Science, Sultan Qaboos University, Seeb, Oman
Contact details: Sultan Qaboos University, P. O. Box 20, PC 123, Seeb, Oman

** Economics and Finance Department, College of Economics and Political Science, Sultan Qaboos University, Seeb, Oman



Abstract

How to cite this paper: Al Kharusi, S., Murthy, Y. S. R., & Al Foori, A. (2022). Performance and profitability of local banks: The case of the emerging market. *Corporate & Business Strategy Review*, 3(1), 55–63. <https://doi.org/10.22495/cbsrv3i1art6>

Copyright © 2022 The Authors

This work is licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0).
<https://creativecommons.org/licenses/by/4.0/>

ISSN Online: 2708-4965
ISSN Print: 2708-9924

Received: 03.04.2022
Accepted: 31.05.2022

JEL Classification: G2, G21, G32
DOI: 10.22495/cbsrv3i1art6

This paper investigates the performance and profitability of local banks of Oman for 2017–2020. Financial ratios are employed to measure the financial performance of the local banks listed in the Muscat Securities Market (Sufian, 2009). The study uses cluster analysis procedures for statistical investigation. The cluster results show that cost, profitability, and balance sheet structure (asset-liability structure) are important factors. Big banks behave differently compared to small banks, even though the size was not included as a variable in the cluster analysis. The cluster results did not indicate that COVID-19 has significantly dented the performance of banks in Oman. The financial stability and the soundness of the banking sectors are essential for both investors and depositors, and the main policy implication of this research study is that local banks in Oman are resilient, and a positive outlook is expected, given their ability to survive and manage their business during the global coronavirus outbreak.

Keywords: Banks, Cluster Analysis, Oman, Ratio Analysis, Global Outbreak

Authors' individual contribution: Conceptualization — S.A.K.; Methodology — S.R.M.Y.; Investigation — S.A.K., S.R.M.Y., and A.A.F.; Resources — S.A.K. and S.R.M.Y.; Writing — S.A.K., S.R.M.Y., and A.A.F.; Supervision — S.A.K.

Declaration of conflicting interests: The Authors declare that there is no conflict of interest.

1. INTRODUCTION

Commercial banks are considered the backbone of the financial system within the economy as it circulates the flow of funds. They are considered the largest financial institutions around the world. They play a pivotal role in every society's economic and social development by facilitating the flow of funds from savers, investors, and depositors with surplus to borrowers, individuals, and businesses with limited resources, and gaining from this process from the spread of different interest rates charged. Furthermore, they influence facilities and mobilize resources to integrate economic activities. The profitability and positive performance of

commercial banks help stabilize the financial system. The failure of any banks within the financial system may arise from poor management, lack of regulatory supervision, and nonperforming loans. Hence, it creates economic turmoil for the whole country. The issues of performance, efficiency, regulatory framework and banks' contribution to economic development and growth have been frequently discussed by governments, academicians, professionals, and investors.

There are currently 20 different licensed commercial banks in Oman, including local and foreign banks, all regulated by the Central Bank of Oman. This includes Islamic, foreign, local, and specialized banks. This study considers six local

commercial banks: Bank Dhofar, Bank Muscat, Oman Arab Bank, National Bank of Oman, Sohar International Bank, and Ahli Bank. Only listed banks on Muscat Stock Exchange are included in this study. The recent statistics by the Central Bank of Oman show that the total outstanding credit by conventional banks, excluding Islamic banks, reached OMR¹ 19.1 billion with aggregate deposits of OMR 21 billion. The combined total assets for conventional banks reached approximately OMR 32 billion by the end of April 2021 (Central Bank of Oman, 2021). The total combined assets for the six selected banks are approximately OMR 30 billion. Bank Muscat represents the highest with 42% of the total assets of the designated banks.

This research study aims to examine the performance and profitability of six local commercial banks in Oman using financial ratio analysis. The performance and profitability of these local banks are proxied by return on assets, return on equity, net interest margin, liquidity, equity to total assets, the cost to income, loan loss ratio, and loan to deposit ratio (Eljelly & Elobeed, 2013; Kumar, 2016; Srinivasan & Britto, 2017). The study uses a recent data sample collected from the balance sheets and income statements for 2017-2020. As banks are the sole provider of funds within the economy, their stabilization is vital to the economy. Hence, analyzing their profitability and performance is essential and crucial to the country. Furthermore, the study was conducted during the recent health crisis, COVID-19, which had implications for the global economy. The study is helpful to bank stakeholders to better understand the performance and profitability of local conventional banks in Oman during the COVID-19 pandemic.

The remainder of the research is structured as follows. After the introduction, the following section discusses the relevant research studies on the bank's performance and profitability. Section 3 presents the hypothesis, data, and methodology, followed by the findings and implications in Section 4. Section 5 concludes the research study.

2. LITERATURE REVIEW

Bank performance measures have been the center of studies and research lately, focusing on the banks' performance before and after the financial crisis. Molyneux and Seth (1998) found a positive relationship between bank size and its profitability and operating efficiency as smaller banks were less profitable than their larger peers. This positive relationship between profitability and bank size was also revealed by Sufian (2009), who tested the connection in Malaysian banks. He found that larger bank sizes are associated with lower production costs and reasonable loan offers. This positive relationship has also been established by Ramlall (2009), who found that smaller banks tend to be less profitable than larger banks. However, testing the performance of the banks in Greece, Spathis, Koasmidou, and Doumpos (2002) and Kosmidou (2008) found a negative relationship exists between the bank size and profitability.

Abbas, Tahir, and Rahman (2012) tested the performance of commercial banks in Pakistan. They suggest that banks with more total assets, total operating fixed assets, and total equity are not necessarily experiencing the better performance. Hunjra and Bashir (2014) compared the performance of non-conventional and conventional banks in Pakistan. They found that traditional banks tend to be more profitable and operationally efficient yet less liquid and riskier than Islamic banks. Alam, Raza, and Akram (2011) compared the performance of public and private banks in Pakistan. They found that private banks tend to outperform public banks in size, net interest margin ratio, spread ratios, non-interest expenses to total income ratio, debt to assets ratio, advances to total assets ratio, and capital ratio. Public banks outperformed private banks regarding return on total assets, return on owners' equity, asset quality ratios, liquidity ratios, and leverage ratios.

Furthermore, Waleed, Shah, and Mughal (2015) also compared the performance of private and public banks in Pakistan and suggested that private banks tend to outperform public banks in terms of debt ratio, debt to equity ratio, earning per share, and return on equity. Public banks beat the private banks in terms of return on assets.

Srinivasan and Britto (2017) tested the performance of selected banks in India. They found that the banks' profitability is positively affected by the liquidity and solvency ratios and the turnover and solvency ratios. Jha and Hui (2012) compared the performance of commercial banks in Nepal. They found that capital adequacy, net interest margin, and interest expenses to total loan significantly affected the bank's return on assets. In contrast, the capital adequacy ratio significantly affected the return on equity. They also found that banks in the public sector are significantly less efficient than in the private sector. Nevertheless, the domestic banks in the private sector are equally efficient as the non-domestic banks.

Bank and Das (2013) compared the performance of commercial banks in Bangladesh and found that the same bank had varying ranks under the different financial ratios tested. They also found that the capital adequacy and the percentage of classified loans were significantly affected by the return on assets. Rahman (2016) also evaluated the performance of publicly-traded commercial banks in Bangladesh and found that most banks tested had performed poorly, had a negative economic value-added, and their market share price was undervalued.

Bashir (2001) examined the bases for the performance of non-conventional banks among eight Middle Eastern countries using several internal and external factors to predict the banks' efficiency and profitability. Holding the macroeconomic and financial market factors constant, the study showed that large loans to asset ratios and higher leverages could result in higher profitability. The study also showed higher profitability of foreign-owned banks than their local peers. Holding everything else constant, the banks' performance measures are negatively affected by the taxes and the auspicious macroeconomic environments.

¹ OMR = Omani rial (the local currency of Oman), 1 Omani rial = 2.5 US dollars.

Alkhatib and Harasheh (2012) tested the financial performance of commercial banks in Palestine and found that asset management and operational efficiency separately have a significant effect on the return on assets. However, when tested together with the credit risk and bank size, they substantially impacted Tobin's Q and added economic value. Alrafadi and Md-Yusuf (2013) examined the performance of banks in Libya using the return on investment ratio. They revealed instability in the performance of the Libyan banks based on the return on investment components.

Eljelly and Elobeed (2013) investigated the financial performance of the whole Islamic banking system in Sudan. They found that ratios of coverage, efficiency, liquidity risk, capital adequacy, control, and profitability significantly impacted the banks' financial performance. They also found that these factors were stable over time. Milhem and Istaiteyeh (2015) examined the financial performance of non-conventional banks against traditional counterparts in the Hashemite Kingdom of Jordan. They found that Islamic banks experienced lower profitability, higher liquidity, lower riskiness, and lower efficiency than their traditional counterparts. The differences in these banks' liquidity ratios and risk and solvency ratios were not significant.

In the Gulf Cooperation Countries (GCC²) area, Tarawneh (2006) studied the performance of the traditional banks in Oman by classifying the banks based on their financial attributes reflected by such financial ratios as deposits, credits, total assets, and total shareholders' equity. The study showed that banks with higher deposits, credits, total capital, and total assets are not necessarily reflective of superior profitability. The study also showed a significant and positive effect of bank size, operational efficiency, and asset management on the banks' financial performance.

Ravichandran and Ahmad (2015) studied the performance of the United Arab Emirates (UAE) banks using comparative ratio analysis. They found that the local UAE banks are nearly performing according to industry standards. The asset performance found that the UAE banks have high risk-based assets and debts relative to the global average. Similar finding by Kumar (2016) that the financial performance of national commercial banks in the UAE declined from 2008 to 2010 using return on assets and equity. Banerjee (2018) tested the performance of several national commercial banks in the UAE at the internal level, market level, and economic level. At the banks' internal level, the study showed that the banks' operational efficiency, credit risk, and asset management significantly affect the performance measured by the return on assets. At the market level, the study showed that bank size, credit risk, and operational efficiency do not significantly affect the banks' performance measured by Tobin's Q. At the economic level, the study showed that the banks' credit risk and operational efficiency affect substantially the banks' performance measured by the economic value-added.

Kapur (2020) also studied the performance of commercial and local Islamic banks in the UAE using

comparative ratio analysis. The author found that the performances of Islamic and conventional banks are significantly different in terms of efficiency, asset quality, liquidity, and leverage. Conventional banks tend to be more efficient in earnings per share, return on equity, and net interest margin ratio, among other performance measures. Compared to the conservative lending of Islamic banks, the study found that conventional banks are more prone to taking risks in their lending. Islamic banks are found to have fewer opportunities to invest in liquid assets than conventional banks. On the other hand, the asset management and the bank size do not significantly affect the economic value added by the banks tested.

Hawaldar, Lokesh, and Biso (2016) analyzed Islamic banks' financial performance in Bahrain using the financial ratio, standard deviation, and correlation analyses. For the Islamic retail banks, the study showed a negative relationship between the asset utilization ratio and the staff cost to income ratio, operational efficiency ratio, and cost to income ratio. On the other hand, the study showed a positive relationship between the staff cost to income ratio, operating efficiency ratio, and cost to income ratio for the wholesale Islamic banks.

Hawaldar, Lokesh, Kumar, Pinto, and Sison (2017) also tested the performance of conventional and Islamic banks in Bahrain using such financial ratios as operating efficiency, capital adequacy profitability, liquidity, and leverage. Compared to the Islamic banks, the majority of the conventional banks tested exhibit a consistent performance when using return on equity and return on assets. The difference in the capital adequacy of the banks tested was significant. However, the difference in the liquidity and profitability of the banks was not significant. Ramadhan, Selim, and Sahwan (2019) studied the influencing variables on the financial performance of conventional and Islamic banks in Bahrain using the financial ratio analysis. The study showed that conventional banks outperform Islamic banks in terms of profitability. The banks' performance was insignificantly related to the asset size. Still, the banks' return on assets and return on equity were significantly associated with the number of branches.

Elsiefy (2013) assessed the performance of conventional and Islamic banks in Qatar using the financial ratio analysis. The study revealed that Islamic banks had upheld more notable credits, deposits, and total assets before and after the global financial crisis of 2008 relative to the conventional banks. Still, the Islamic banks' profitability growth rates were less sustainable during the crisis. The study also showed that the Islamic banks maintained lower nonperforming loan ratios relative to the conventional banks regarding asset quality. The Islamic banks were more efficient than the conventional banks in terms of asset utilization. Nevertheless, the Islamic banks were less liquid than their conventional peers, and Islamic banks were less leveraged and more sufficiently capitalized than conventional banks in terms of risk.

A recent study by Haddad, El Ammari, and Bouri (2020) investigated the financial performance and ownership structure of 16 conventional and

² GCC includes: Oman, Kuwait, Bahrain, Qatar, the United Arab Emirates and the Kingdom of Saudi Arabia.

Islamic banks in Europe, Asia, and Africa. Using the ordinary least squares (OLS) method, panel data from 2010 to 2018 were compared to the impact of ownership structure on the financial performance of both Islamic and conventional banks in the agency theory framework. According to the findings, conventional banks' ownership structure has an ambiguous impact on their financial performance, whereas Islamic banks' ownership structure has a positive impact. Another study in Morocco by Chebri and Bahoussa (2020) studied the financial performance of banks, taking into consideration the diversity of the board. The study used panel data from all listed Moroccan banks for 2014–2018. The finding revealed that gender diversity has a negative and significant effect on the financial performance of banks using both return on assets and return on equity. In contrast, in China, Qian, Waheduzzaman, and Khandaker (2021) found a positive impact on the financial performance of publically listed companies of women being on the board using return on assets.

Hence, all these results indicate the importance of a comprehensive analysis to measure the financial performance and profitability of local banks in Oman.

3. RESEARCH METHODOLOGY

Based on the research gap identified while reviewing the previous research on the topic of performance and profitability of banks, the null hypothesis and the alternate hypothesis are empirically examined in this study are as follows:

H₀ (the null hypothesis): COVID-19 pandemic has not affected the performance and profitability of banks in Oman.

H₁ (the alternate hypothesis): COVID-19 pandemic has affected the performance and profitability of banks in Oman.

Cluster analysis statistical procedure and related ANOVA results and F-values are the statistical tools used to test and validate the above hypotheses.

The study uses cluster analysis to arrive at differentiation in performance between banks. Clustering is a statistical method of processing data such that objects are grouped so that objects/variables in the same group are more similar to each other than those in other groups. It was felt that a priori grouping and then checking differences in performance using other statistical procedures such as discriminant analysis or logit/probit could lead to biased results as the researcher would then be done based on their prior biases. It was felt that the best way of differentiating between banks in terms of their performance would be the clustering procedure.

Cluster analysis has become very popular in other fields such as image processing, data mining, machine learning, pattern recognition, and

bioinformatics. The statistical package for social sciences (SPSS) was used to do the cluster analysis. Each bank's ratios for each year are considered one sample unit for clustering. This method was adopted because we wanted to differentiate between performance in one year compared to the other. It was felt that this procedure is also necessary to check if the COVID-19 global outbreak has seriously affected the bank's performance. We expect that if the COVID-19 outbreak has affected the banks, 2020 ratios will behave differently than in previous years.

Table 1. Ratios and their definitions

<i>Ratio</i>	<i>Definition</i>
<i>ROE</i>	Return on equity
<i>ROA</i>	Return on assets
<i>NIM</i>	Net interest margin
<i>LCST</i>	Liquid assets to customer deposits and short term funds
<i>LLPNL</i>	Loan loss provisions to net loans
<i>COSTING</i>	Cost to income ratio
<i>EQUAL</i>	Equity to total assets
<i>LOANDEP</i>	Loan to deposit ratio

In this study, eight ratios were used (Table 1). The return on assets and return on equity are measures of profitability and efficiency. Net interest margin measures competitive pressure and profitability in traditional lending and deposit-taking activities. Liquidity is measured using liquid assets to customer deposits, and liquid assets include both cash and cash equivalents. Asset quality and asset risk are measured using loan loss provisions to net loans. Cost management and cost control are estimated using the cost to income ratio. Leverage and balance sheet structure are measured using equity to total assets and loan to deposit ratio.

The study covers the following listed banks that operated in Oman from 2017 to 2020. The included banks are Ahli Bank, Bank Muscat, National Bank of Oman, HSBC Oman, Bank Dhofar, Sohar International Bank, and Nizwa bank. Banks that are not listed in the Muscat Stock Exchange and are not publicly traded are not included in the study. Oman Arab Bank had to be dropped from the analysis because before 2020, it was not a listed bank, and it became a public listed bank only in the middle of 2020. Bank Nizwa is an Islamic bank listed and traded in Muscat Securities Market. Alizz Islamic bank had to be dropped from the study because it merged with Oman Arab Bank in July 2020. The study, therefore, consists of six conventional banks and one Islamic bank. However, it should be noted that even conventional banks in Oman have an Islamic banking window, and therefore the distinction is not very clear. Data used in the study is from balance sheets and income statements as reported to Muscat Securities Market.

Table 2. Cluster membership

Case	6 Clusters	5 Clusters	4 Clusters	3 Clusters	2 Clusters
1: BKMB2020	1	1	1	1	1
2: BKMB2019	1	1	1	1	1
3: BKMB2018	1	1	1	1	1
4: BKMB2017	1	1	1	1	1
5: NBOB2020	1	1	1	1	1
6: NBOB2019	1	1	1	1	1
7: NBOB2018	1	1	1	1	1
8: NBOB2017	1	1	1	1	1
9: HSBCOM2020	2	2	2	2	1
10: HSBCOM2019	3	3	3	2	1
11: HSBCOM2018	3	3	3	2	1
12: HSBCOM2017	3	3	3	2	1
13: BDOF2020	1	1	1	1	1
14: BDOF2019	1	1	1	1	1
15: BDOF2018	1	1	1	1	1
16: BDOF2017	1	1	1	1	1
17: AHBOM2020	4	1	1	1	1
18: AHBOM2019	4	1	1	1	1
19: AHBOM2018	4	1	1	1	1
20: AHBOM2017	4	1	1	1	1
21: BKSOHAR2020	1	1	1	1	1
22: BKSOHAR2019	1	1	1	1	1
23: BKSOHAR2018	1	1	1	1	1
24: BKSOHAR2017	1	1	1	1	1
25: NIZWA2020	4	1	1	1	1
26: NIZWA2019	5	4	4	3	2
27: NIZWA2018	5	4	4	3	2
28: NIZWA2017	6	5	4	3	2

Source: Authors' computation, 2022.

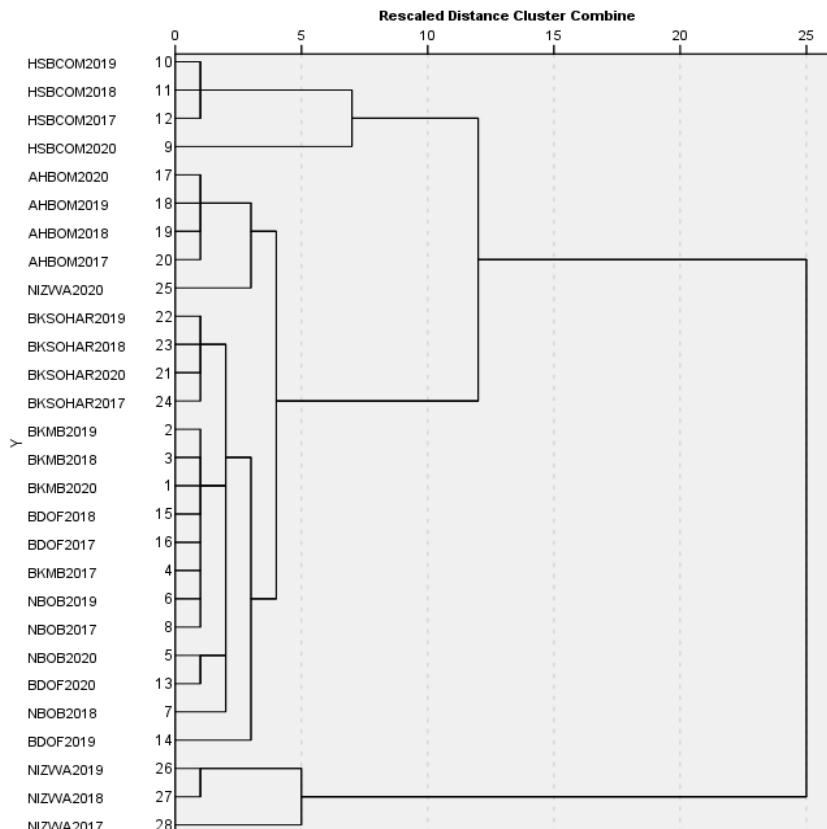
4. RESULTS AND DISCUSSION

4.1. Hierarchical cluster analysis results

Using the hierarchical clustering method, we initially explored the nature of cluster membership.

Clustering into both 3 clusters and 4 clusters gave good results, as seen from the cluster membership pattern seen in Table 2 and the dendrogram reported in Figure 1.

Figure 1. Dendrogram using average linkage (Between groups)



Source: Authors' computation, 2022.

The dendrogram clearly shows that HSBC and bank Nizwa can be classified as different clusters compared to other banks in Oman. Group 1 includes the big banks operating in Oman, such as Bank Dhofar, Bank Muscat, and the National Bank of Oman. These are also banks with an extensive network of branches and ATMs. The clustering procedure indicates that big banks are always in the same group whether we take 2017, 2018, 2019, or 2020. Clustering with six groups is also predicting exciting trends. If one were to refer to the "6 Clusters" column, it shows that the National Bank of Oman, Bank Muscat, Bank Dhofar, and Bank Sohar have been in one group for four years. Ahli Bank is a separate group, HSBC is a separate group, and Nizwa bank for all four years.

It is interesting to find out that the clustering procedure did not pick years as clusters but picked banks as clusters. Also, the clustering did not give mixed results where it puts some banks for some years in one group and changes the group for the other years. In that sense, the cluster results are pretty straightforward.

This result must be seen in light of the nature of the ratios used to measure performance. The size of the bank does not affect clustering because all are ratios used in the analysis: return on assets, the cost to income, equity to total assets, etc., are not impacted by size. Therefore, we cannot argue that big banks were grouped because of the size variable since the size variable is not included in the cluster analysis statistical procedure.

Nizwa bank is an Islamic bank, and therefore one can expect it behaves differently. HSBC Oman is originally a foreign bank that acquired Oman International Bank. One can argue that it is a local bank that evolved from a foreign parent and is different.

The clustering procedure does not indicate that the financial performance of banks in the year 2020 is different from the implementation of banks in the previous years. Therefore, we cannot conclude that COVID-19 has impacted the formation of clusters.

4.2. K-means cluster results

The second round of clustering using the K-means clustering procedure was attempted further to

analyze the implications of the hierarchical cluster analysis. The results are shown in Tables 3 to 7. It should be noted that although cluster membership remained the same as hierarchical, the names of the clusters have been changed by K-means. For example, cluster 1 is hierarchical and is called cluster 2 in K-means. For easy reference, we can name these clusters as big banks clusters (cluster 2), the HSBC cluster (cluster 3), and the Nizwa bank cluster (cluster 1).

The cluster results show that cost, profitability, and balance sheet structure (asset-liability structure) are important factors. Big banks behave differently compared to small banks, even though the size was not included as a variable in the cluster analysis. The cluster results did not indicate that COVID-19 has significantly dented the performance of banks in Oman. If this were true, 2020 would have come out as a different cluster in forming clusters. Banks in Oman remain strong and resilient despite the challenges thrown up by the pandemic.

Table 4 shows the final cluster centers in the K-means procedure. The big banks' cluster (cluster 2) has higher profitability as indicated by the return on equity and return on assets, higher liquidity (liquid assets to customer deposits and short term funds), higher loan losses (*LLPNL*), a much lower cost to income ratio, and a loan to deposit ratio, which neither too high nor too low. The Nizwa bank cluster (cluster 1) shows much lower profitability, a significantly lower loan to deposit ratio, and a very high cost to income ratio. As mentioned earlier, Nizwa bank is an Islamic bank and is expected to behave differently. Once again, it is significant to find that the K-means statistical procedure formed the clusters based on the similarity of ratios and distances between clusters and not by the researchers. Once again, we note that the K-means procedure did not group years into clusters, but it grouped banks into clusters. The clusters produced by the K-means statistical procedure show very clearly the grouping of banks into clusters. The results do not indicate that year 2020 was different from the other years, and therefore once again, we conclude that the impact of the pandemic on banks in Oman is not very significant.

Table 3. K-means procedure: Cluster membership (Part 1)

Case number	V1	Cluster	Distance
1	BKMB2020	2	7.165
2	BKMB2019	2	7.399
3	BKMB2018	2	7.547
4	BKMB2017	2	6.314
5	NBOB2020	2	9.032
6	NBOB2019	2	5.197
7	NBOB2018	2	10.833
8	NBOB2017	2	9.226
9	HSBCOM2020	3	22.455
10	HSBCOM2019	3	10.505
11	HSBCOM2018	3	9.579
12	HSBCOM2017	3	2.774
13	BDOF2020	2	6.838
14	BDOF2019	2	17.187
15	BDOF2018	2	9.053
16	BDOF2017	2	6.865
17	AHBOM2020	2	17.750
18	AHBOM2019	2	17.182
19	AHBOM2018	2	13.562

Table 3. K-means procedure: Cluster membership (Part 2)

Case number	VI	Cluster	Distance
20	AHBOM2017	2	11.507
21	BKSOHAR2020	2	14.109
22	BKSOHAR2019	2	11.613
23	BKSOHAR2018	2	11.145
24	BKSOHAR2017	2	9.838
25	NIZWA2020	1	22.099
26	NIZWA2019	1	5.121
27	NIZWA2018	1	3.468
28	NIZWA2017	1	23.233

Source: Authors' computation, 2022.

Table 4. Final cluster centers

Factor	Cluster		
	1	2	3
ROA	5.55%	7.29%	5.24%
ROE	0.83%	1.11%	0.74%
NIM	2.49%	2.33%	2.38%
LCST	10.77%	13.24%	12.39%
LLPNL	0.54%	0.56%	0.44%
COSTING	-60.18%	-46.04%	-67.94%
EQUAL	15.50%	15.25%	13.99%
LOANDEP	140.00%	97.56%	70.39%

Source: Authors' computation, 2022.

Table 5. Distances between final cluster centers

Cluster	1	2	3
1		44.835	70.082
2	44.835		34.999
3	70.082	34.999	

Source: Authors' computation, 2022.

Table 6. Number of cases in each cluster

Cluster	1	4.000
	2	20.000
	3	4.000
Valid		28.000
Missing		0.000

Source: Authors' computation, 2022.

Table 7. Analysis of variance (ANOVA)

Factor	Cluster		Error		F	Sig.
	Mean square	df	Mean square	df		
ROE	10.431	2	6.847	25	1.523	0.238
ROA	0.325	2	0.153	25	2.131	0.140
NIM	0.042	2	0.065	25	0.649	0.531
LCST	10.481	2	23.756	25	0.441	0.648
LLPNL	0.026	2	0.120	25	0.217	0.806
COSTING	988.070	2	56.822	25	17.389	<0.001
EQUAL	2.989	2	1.491	25	2.005	0.156
LOANDEP	5012.567	2	80.636	25	62.163	<0.001

Source: Authors' computation, 2022.

Note: The F-tests are used for descriptive analysis purposes as the clusters have been selected to maximize the differences among the cases in different clusters. The observed level of significance is not corrected for this and thus cannot be interpreted as tests of this hypothesis that the cluster means are equal.

Table 7 presents the analysis of variance (ANOVA) table results produced by the K-means statistical procedure. The F-values tell us which variables were primarily responsible for forming clusters and their differences. In interpreting the analysis of variance (ANOVA) table, we should keep in mind the warning given by the SPSS statistical package that the F-values cannot be interpreted as tests of the hypothesis that cluster means are equal. Keeping this warning in mind, we only rank the variables in the order of importance in cluster formation. The order of priority is based on the F-values: loan to deposit and cost to income ratio

is the first and second in importance. Next is the return on assets, followed by equity to total assets. This ranking implies that the balance sheet structure on both the liability side and asset side contributes in a big way to clustering, followed by cost management and cost control.

One feature which differentiates Omani banks and GCC banks from banks in the rest of the world is the low cost to income ratios, indicating that big banks in Oman have, over the years, managed to keep costs under control, which could be a significant reason for their strength and resilience even during adverse times such as the COVID-19 pandemic.

Return on assets is the fourth variable in the ranking list, which leads to a broad generalization that cost and profitability are essential factors impacting the performance differences between banks in Oman.

Liquidity and loan losses are the last ranked based on F-values reported in the analysis of variance (ANOVA) table. The results imply that differences in liquidity are not significant enough to differentiate between banks in terms of performance. Similarly, differences in asset quality and asset management as indicated by the loan loss (loan loss provisions to net loans) variable are not significant in differentiating between the performance of banks in Oman.

5. CONCLUSION

Using the balance sheet and income statement information of banks listed in the Muscat Securities Market (Oman), this paper tries to analyze the performance of banks in Oman from 2017 to 2020. The two purposes of the research are to understand the differences in the financial performance of banks using ratios covering all aspects of performance beyond profitability and to check if the COVID-19 pandemic has resulted in a downfall in the performance of banks. If there is a drop in performance, we should find that the 2020 ratios of the banks would be inadequate compared to the same ratios in the previous years. Ratios used cover profitability, efficiency, competition, liquidity, leverage, balance sheet structure, and cost management. Hierarchical cluster analysis and K-means cluster procedures were used for analysis.

In summary, the cluster results show that cost, profitability, and balance sheet structure (asset-liability structure) are important factors. Big banks behave differently compared to small banks, even though the size was not included as a variable in the cluster analysis. The cluster results did not indicate that COVID-19 has significantly dented the performance of banks in Oman. If this were true, 2020 would have come out as a different cluster in forming clusters. Banks in Oman remain strong and resilient despite the challenges thrown up by the pandemic. Future studies can extend and further validate the results obtained in this study by using factor analysis and the SEM model. As mentioned earlier, we refrained from starting with discriminant analysis to avoid biased information about clusters. Moreover, this study investigated the local banks. In future studies, a financial performance comparison between the local and foreign banks operating in Oman is also suitable and recommended.

The finding of this research study demonstrates that given the recent challenges of coronavirus and the economic and financial constraints, local banks have the opportunities to prosper when the fact that local banks in Oman remain resilient is incorporated into effective policies financially. Furthermore, as a result, this study suggests that policymakers in these emerging economies implement more support and environmentally friendly policies that encourage and facilitate the cash flow from depositors to the economy through local banks.

REFERENCES

1. Abbas, F., Tahir, M., & Rahman, M. U. (2012). A comparison of financial performance in the banking sector: Some evidence from Pakistani commercial banks. *Journal of Business Administration and Education*, 1(1), 1-14. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.892.9772&rep=rep1&type=pdf>
2. Alam, H. M., Raza, A., & Akram, M. (2011). A financial performance comparison of public vs private banks: The case of commercial banking sector of Pakistan. *International Journal of Business and Social Science*, 2(11), 56-64. Retrieved from http://ijbssnet.com/journals/Vol.2_No.11_%5BSpecial_Issue-June_2011%5D/8.pdf
3. Alkhatib, A., & Harasheh, M. (2012). Financial performance of Palestinian commercial banks. *International Journal of Business and Social Science*, 3(3), 175-184. Retrieved from https://ijbssnet.com/journals/Vol_3_No_3_February_2012/18.pdf
4. Alrafadi, K. M., & Md-Yusuf, M. (2013). Evaluating the performance of Libyan banks using return on investment. *American Journal of Economics and Business Administration*, 5(2), 84-88. <https://doi.org/10.3844/ajebasp.2013.84.88>
5. Banerjee, A. (2018). Can ratios predict the financial performance in banks: A case of national banks in United Arab Emirates (U.A.E.). *International Journal of Accounting and Financial Reporting*, 8(4), 2162-3082. <https://doi.org/10.5296/ijaf.v8i4.13802>
6. Banik, B. P., & Das, P. C. (2013). Comparison of financial performance of state owned commercial banks: A case study of Bangladesh. *International Journal of Science and Research*, 2(2), 423-428. Retrieved from https://www.ijsr.net/get_abstract.php?paper_id=IJSRON2013449
7. Bashir, A. H. M. (2001). Assessing the performance of Islamic banks: Some evidence from the Middle East. *Topics in Middle Eastern and North African Economies*, 3. Retrieved from <https://ecommons.luc.edu/cgi/viewcontent.cgi?article=1029&context=meea>
8. Central Bank of Oman. (2021, April). *Monthly statistical bulletin*. Retrieved from <https://cbo.gov.om/sites/assets/Documents/English/Publications/MonthlyBulletins/MonthlyBulletinsMonthlyStatisticalBulletinApril2021.pdf>
9. Chebri, M., & Bahoussa, A. (2020). Impact of gender and nationality diversity on financial performance: A study of listed banks in Morocco. *Corporate Ownership & Control*, 18(1), 56-68. <https://doi.org/10.22495/cocv18i1art5>
10. Eljelly, A. M., & Elobeed, A. A. (2013). Performance indicators of banks in a total Islamic banking system: The case of Sudan. *International Journal of Islamic and Middle Eastern Finance and Management*, 6(2), 142-155. <https://doi.org/10.1108/17538391311329833>
11. Elsiefy, E. (2013). Comparative analysis of Qatari Islamic banks performance versus conventional banks before, during and after the financial crisis. *International Journal of Business and Commerce*, 3(3), 11-41. Retrieved from <https://ijbcnet.com/3-3/IJBC-13-3301.pdf>
12. Haddad, A., El Ammari, A., & Bouri, A. (2020). Impacts of ownership structure on the financial performance of conventional and Islamic banks in the agency theory context. *Corporate Ownership and Control*, 17(3), 46-70. <https://doi.org/10.22495/cocv17i3art4>

13. Hawaldar, I. T., Lokesh, L., & Biso, S. S. (2016). An empirical analysis of financial performance of retail and wholesale Islamic banks in Bahrain. *American Academic Scientific Research Journal for Engineering, Technology, and Sciences*, 20(1), 137-147. Retrieved from https://asrjetsjournal.org/index.php/American_Scientific_Journal/article/view/1726
14. Hawaldar, I. T., Lokesh, L., Kumar, K. A., Pinto, P., & Sison, S. M. (2017). Performance analysis of commercial banks in the kingdom of Bahrain (2001-2015). *International Journal of Economics and Financial Issues*, 7(3), 729-737. Retrieved from <https://www.econjournals.com/index.php/ijefi/article/view/4325>
15. Hunjra, A. I., & Bashir, A. (2014). *Comparative financial performance analysis of conventional and Islamic banks in Pakistan*. <https://doi.org/10.2139/ssrn.3229708>
16. Jha, S., & Hui, X. (2012). A comparison of financial performance of commercial banks: A case study of Nepal. *African Journal of Business Management*, 6(25), 7601-7611. <https://doi.org/10.5897/AJBM11.3073>
17. Kapur, M. (2020). Performance of conventional and Islamic banks in the UAE: A comparative graphical ratio analysis. *Saudi Journal of Business and Management Studies*, 5(1), 50-63. <https://doi.org/10.36348/sjbms.2020.v05i01.007>
18. Kosmidou, K. (2008). The determinants of banks' profits in Greece during the period of EU financial integration. *Managerial Finance*, 34(3), 146-159. <https://doi.org/10.1108/03074350810848036>
19. Kumar, V. (2016). Evaluating the financial performance and financial stability of national commercial banks in the UAE. *International Journal of Business and Globalisation*, 16(2), 109-128. <https://doi.org/10.1504/IJBG.2016.074477>
20. Milhem, M., & Istaiteyeh, R. (2015). Financial performance of Islamic and conventional banks: Evidence from Jordan. *Global Journal of Business Research*, 9(3), 27-41. Retrieved from <https://ssrn.com/abstract=2664298>
21. Molyneux, P., & Seth, R. (1998). Foreign banks, profits and commercial credit extension in the United States. *Applied Financial Economics*, 8(5), 533-539. <https://doi.org/10.1080/096031098332835>
22. Qian, D., Waheduzzaman, W., & Khandaker, S. (2021). Relationship of board diversity with firm's financial performance: The case of publicly listed companies in China [Special issue]. *Corporate Ownership & Control*, 19(1), 229-240. <https://doi.org/10.22495/cocv19i1siart2>
23. Rahman, M. M. (2016). Financial performance analysis of scheduled commercial banks in Bangladesh. *Universal Journal of Accounting and Finance*, 4(5), 166-184. <https://doi.org/10.13189/ujaf.2016.040503>
24. Ramadhan, S., Selim, M., & Sahwan, A. (2019). Financial performance of conventional and Islamic banks in Bahrain: A comparative study. *Banks and Bank Systems*, 14(4), 192-205. [https://doi.org/10.21511/bbs.14\(4\).2019.18](https://doi.org/10.21511/bbs.14(4).2019.18)
25. Ramlall, I. (2009). Bank-specific, industry-specific and macroeconomic determinants of profitability in Taiwanese banking system: Under panel data estimation. *International Research Journal of Finance and Economics*, 34(2), 1450-2887.
26. Ravichandran, K., & Ahmad, H. I. (2015). Performance analysis of UAE banks-an exploratory study. *International Journal of Economics and Finance*, 7(9), 200-206. <https://doi.org/10.5539/ijef.v7n9p200>
27. Spathis, C., Kosmidou, K., & Doumpos, M. (2002). Assessing profitability factors in the Greek banking system: A multicriteria methodology. *International Transactions in Operational Research*, 9(5), 517-530. <https://doi.org/10.1111/1475-3995.00371>
28. Srinivasan, P., & Britto, J. (2017). Analysis of financial performance of selected commercial banks in India. *Theoretical Economics Letters*, 7(7), 2134-2151. <https://doi.org/10.4236/tel.2017.77145>
29. Sufian, F. (2009). Determinants of bank efficiency during unstable macroeconomic environment: Empirical evidence from Malaysia. *Research in International Business and Finance*, 23(1), 54-77. <https://doi.org/10.1016/j.ribaf.2008.07.002>
30. Tarawneh, M. (2006). A comparison of financial performance in the banking sector: Some evidence from Omani commercial banks. *International Research Journal of Finance and Economics*, 3(3), 101-112.
31. Waleed, A., Shah, M. B., & Mughal, M. K. (2015). Comparison of private and public banks performance. *IOSR Journal of Business and Management*, 17(7), 32-38. Retrieved from <https://www.iosrjournals.org/iosr-jbm/papers/Vol17-issue7/Version-3/F017733238.pdf>