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Analytical Study of Financial Performance In Co-operative And Public Sector Banks Using CAMEL Model

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ABSTRACT

The financial analysis of banks is essential for assessing their overall health, stability, and performance. It helps stakeholders, including investors, regulators, and management, understand a bank's profitability, liquidity, asset quality, and risk management practices. By examining key financial indicators, such as capital adequacy, earnings, and loan performance, financial analysis provides insights into the bank's ability to withstand economic fluctuations, manage risks, and sustain growth. This comprehensive evaluation is critical for making informed decisions, ensuring regulatory compliance, and maintaining confidence in the banking system.

The analytical study of financial performance in co-operative and public sector banks using the CAMEL model is vital for several reasons. The CAMEL model, which stands for Capital Adequacy, Asset Quality, Management Efficiency, Earnings Quality, and Liquidity, provides a comprehensive framework for evaluating the overall health and stability of banks. By applying this model, stakeholders can identify strengths and weaknesses in these key areas, enabling better decision-making and strategic planning. This analysis helps in benchmarking performance, understanding risk factors, and ensuring regulatory compliance. Additionally, it provides insights into operational efficiencies and profitability, aiding in the enhancement of financial stability and growth for both co-operative and public sector banks. Ultimately, such a study promotes transparency and fosters trust among investors, regulators, and customers.

Keywords: Financial performance, Co-operative bank, public sector banks, Camel Model.

Introduction

Co-operative Bank: A cooperative bank is a financial institution that operates on cooperative principles, meaning it is owned and controlled by its members, who are also its customers. Unlike traditional banks, which are typically owned by shareholders looking to maximize profits, cooperative banks prioritize serving their members' financial needs and supporting their communities. Members have a say in the bank's governance and decision-making processes, often through a democratic voting system where each member has one vote, regardless of the size of their financial stake. This structure aims to ensure that the bank operates in the best interests of its members rather than external shareholders.

Cooperative banks offer a range of financial services similar to those provided by commercial banks, including savings and checking accounts, loans, mortgages, and investment products. They often emphasize local development and social responsibility, focusing on providing affordable banking services and fostering economic growth within their communities. By pooling resources and sharing profits among members, cooperative banks aim to create a more inclusive and equitable financial system. This model is particularly prevalent in rural and underserved areas, where it can play a crucial role in promoting financial inclusion and economic stability.

Public sector Bank: Public Bank is a term that can refer to a financial institution that is owned and operated by the government rather than private entities or individuals. These banks are established with the aim of serving the public interest by providing financial services that may not be adequately addressed by private sector banks. They often focus on promoting economic development, supporting small and medium-sized enterprises (SMEs), offering affordable banking services to underserved populations, and financing public infrastructure projects. Public banks can operate at various levels, including municipal, regional, or national, and they typically reinvest their profits into the community rather than distributing them to private shareholders.

One prominent example of a public bank is the Bank of North Dakota in the United States, which has been

operating since 1919 and serves as a model for similar initiatives. Public banks can offer several advantages, including lower interest rates, reduced fees, and a focus on long-term community development rather than short-term profits. They can also play a stabilizing role during economic downturns by providing consistent credit availability and supporting counter-cyclical economic policies. However, establishing and managing public banks requires careful governance to ensure they operate efficiently, transparently, and in alignment with public goals.

Financial Performance in co-operative and public sector banks using camel Model

The financial performance of cooperative and public sector banks can be effectively analyzed using the CAMEL model, which stands for Capital Adequacy, Asset Quality, Management Quality, Earnings, and Liquidity. For cooperative banks, capital adequacy often presents a challenge as they might have limited access to capital markets and rely heavily on member contributions. Asset quality in cooperative banks can vary widely, but these banks typically face higher non-performing assets (NPAs) due to their focus on rural and agricultural sectors. Management quality can be inconsistent, with some cooperative banks excelling in governance and others struggling due to local political interference. Earnings for cooperative banks are generally lower compared to public sector banks due to their smaller scale and focus on social objectives. Liquidity is typically maintained through strong community ties and member deposits, although it can be strained in times of economic distress.

In contrast, public sector banks, which are owned by the government, often have better capital adequacy ratios due to government support and access to capital markets. Asset quality in public sector banks can also be a concern, as they may be mandated to lend to priority sectors, leading to higher NPAs. Management quality in public sector banks tends to be more standardized and regulated, though bureaucratic inefficiencies can sometimes hinder performance. Earnings in public sector banks are generally more robust than in cooperative banks due to their larger scale and diversified portfolios. However, profitability can be impacted by social banking obligations and directed lending. Liquidity in public sector banks is usually strong due to a broad deposit base and government backing, ensuring stability even during economic downturns.

Review of Literature

1.Gupta, S. & Kaur, M. (2014), In the research titled "A Comparative Study of Performance of Public Sector Bank Using CAMEL Model" This study concluded that public sector banks show strong capital adequacy and management quality, but struggle with asset quality due to higher NPAs. Their overall performance was found to be moderate under the CAMEL model.

2.Singla, H. K. (2008), In the research titled "Financial Performance of Banks in India" Singla found that public sector banks in India showed a consistent performance in terms of capital adequacy and earnings but had issues with asset quality and management efficiency.

3.Kaur, K. & Singh, B. (2011), In the research titled "Performance Evaluation of Indian Public Sector Banks Using CAMEL Model" The study revealed that most public sector banks had satisfactory levels of capital adequacy and management quality but faced significant challenges in maintaining asset quality and profitability.

4.Siva, S. & Natarajan, P. (2011), In the research titled "CAMEL Rating Scanning (CRS) of SBI Groups" This research indicated that the State Bank of India group performed well in capital adequacy and earnings but needed improvement in asset quality and management efficiency.

5.Nimalathasan, B. (2008), In the research titled **"**A Comparative Study of Financial Performance of Banking Sector in Bangladesh – An Application of CAMELS Rating System" The study highlighted that public sector banks in Bangladesh were strong in terms of capital adequacy and liquidity but had weaknesses in asset quality and earnings.

6.Dangwal, R. C. & Kapoor, R. (2010), In the research titled "Financial Performance of Nationalized Banks" This research concluded that nationalized banks in India had robust capital adequacy and management quality but were challenged by poor asset quality and moderate earnings.

7.Reddy, K. S. (2012), In the research titled "Relative Performance of Commercial Banks in India Using CAMEL Approach" The study showed that commercial banks, including public sector banks, performed well in capital adequacy and management quality but needed to address issues in asset quality and earnings.

8.Kumar, M. & Gulati, R. (2009), In the research titled "Evaluating the Performance of Indian Banking Sector Using CAMEL Model: A Comparative Study of Public and Private Sector Banks" This study concluded that public sector banks in India had satisfactory capital adequacy and management quality but faced challenges in asset quality and profitability compared to private sector banks.

Data Analysis

Type of Bank	Name of Bank	Capital Adequacy Ratio	Net NPA/ Net Advances	RONW	Net Interest Margin	Cash Deposit Ratio
Co-operative Bank	Saraswat Co-operative Bank.	13.94	0.65	6.27	2.47	4.92
	Cosmos Co-operative Bank.	13.19	4.74	3.14	3.49	5.36
	Bharat Co-operative Bank.	12.63	5.05	-9.43	3.08	5.06
	NKGSB Co-operative Bank	12.66	2.87	2.52	3.22	5.72
	Dombivli Nagar sahakari Co-operative Bank	15.60	1.95	5.30	3.47	5.78
Public Bank	Bank of Baroda	16.24	0.89	15.33	3.31	5.6
	Bank of India.	16.28	1.22	8.02	3.01	6.50
	Bank of Maharashtra.	18.14	0.25	19.68	3.56	8.76
	Central Bank of India	13.84	3.97	4.49	3.21	10.44
	Canara Bank	16.68	1.73	17.14	2.95	4.70

In comparing the financial metrics of Cooperative Banks and Public Banks based on the provided data, Public Banks generally exhibit stronger financial indicators. Public Banks like Bank of Maharashtra stand out with significantly higher Capital Adequacy Ratios (18.14%) compared to Cooperative Banks like Saraswat Co-operative Bank (13.94%). Moreover, Public Banks show lower Net NPA ratios on average (1.42%) compared to Cooperative Banks (3.05%), indicating better asset quality management. Return on Net Worth (RONW) is notably higher in Public Banks (average of 12.84%) than in Cooperative Banks (average of 1.95%), reflecting higher profitability relative to their net worth. Public Banks also lead in Net Interest Margin (average of 3.47%) and Cash Deposit Ratio (average of 6.80%) compared to Cooperative Banks (average of 3.35% and 5.48% respectively), suggesting stronger interest income generation and liquidity management. Overall, these metrics underscore the generally stronger financial health and performance of Public Banks over Cooperative Banks based on the provided data.

Research Methodology: The research methodology employed in this analysis is a comparative study of financial performance between Cooperative and Public banks using the CAMEL model. Specifically, the study focuses on key financial ratios such as Capital Adequacy Ratio (CAR), Net NPA/Net Advances, Return on Net Worth (RONW), Net Interest Margin (NIM), and Cash Deposit Ratio (CDR). The analysis applies ANOVA (Analysis of Variance) to test hypotheses regarding significant differences in these ratios between the two types of banks. Data on these financial indicators were collected and subjected to statistical testing to determine whether the observed differences are significant. Mean scores were calculated for each variable to understand the performance trends between Cooperative and Public banks. The ANOVA test results provided insights into the financial health, efficiency, and risk management of both bank types.

Objective 1: To study the financial performance using Co-operative and public banks using camel Model.

Null Hypothesis H_{01A}: There is no significant difference in Capital Adequacy Ratio between Co-operative and Public banks.

Alternate Hypothesis H_{11A}: There is a significant difference in Capital Adequacy Ratio between Co-operative and Public banks.

To test the above hypothesis ANOVA Test is applied. Results are as follows.

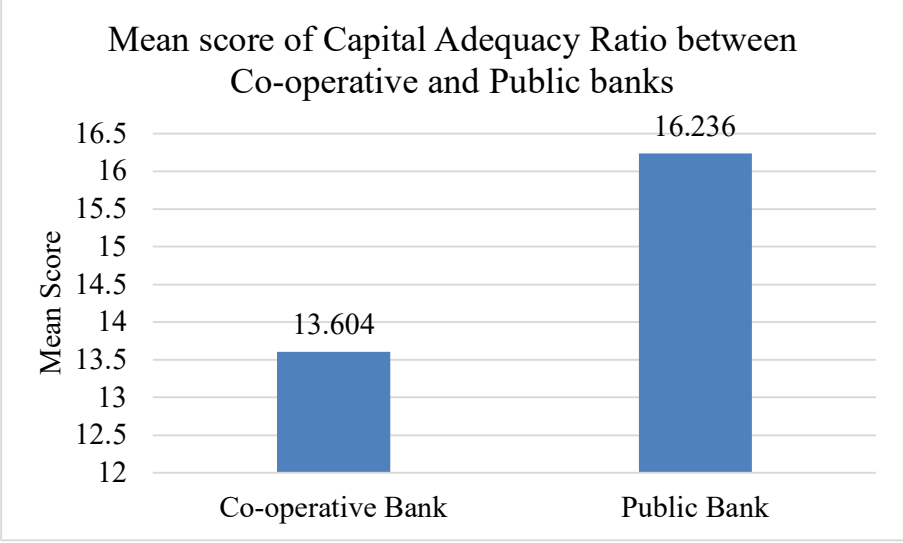
ANOVA

Capital Adequacy Ratio					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	17.319	1	17.319	8.840	.018
Within Groups	15.673	8	1.959		
Total	32.992	9			

Interpretation: The above results indicate that calculated p-value is 0.018. It is less than 0.05. Therefore, ANOVA test is rejected. Hence Null hypothesis is rejected and Alternate hypothesis is accepted.
Conclusion: There is a significant difference in Capital Adequacy Ratio between Co-operative and Public banks.
Findings: To understand the findings of the study, mean score of Capital Adequacy Ratio between Co-operative and Public banks is obtained and shown below.

Report	
Mean	
Type of Bank	Capital Adequacy Ratio
Co-operative Bank	13.6040
Public Bank	16.2360
Total	14.9200

The report compares the mean Capital Adequacy Ratio (CAR) between Cooperative Banks, Public Banks, and their total average. Cooperative Banks exhibit a mean CAR of 13.6040%, whereas Public Banks show a higher mean CAR of 16.2360%. The overall average CAR across both types of banks is calculated at 14.9200%. This data suggests that, on average, Public Banks maintain a stronger capital base compared to Cooperative Banks, reflecting potentially better resilience and capacity to absorb financial shocks or undertake additional lending activities relative to their cooperative counterparts. The following information issue below in diagram.



Null Hypothesis H_{01B}: There is no significant difference in Net NPA/ Net Advances ratio between Co-operative and Public banks.
Alternate Hypothesis H_{11B}: There is a significant difference in Net NPA/ Net Advances ratio between Co-operative and Public banks.

To test the above hypothesis ANOVA Test is applied. Results are as follows.

ANOVA					
Net NPA/ Net Advances					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.184	1	5.184	1.888	.207
Within Groups	21.963	8	2.745		
Total	27.147	9			

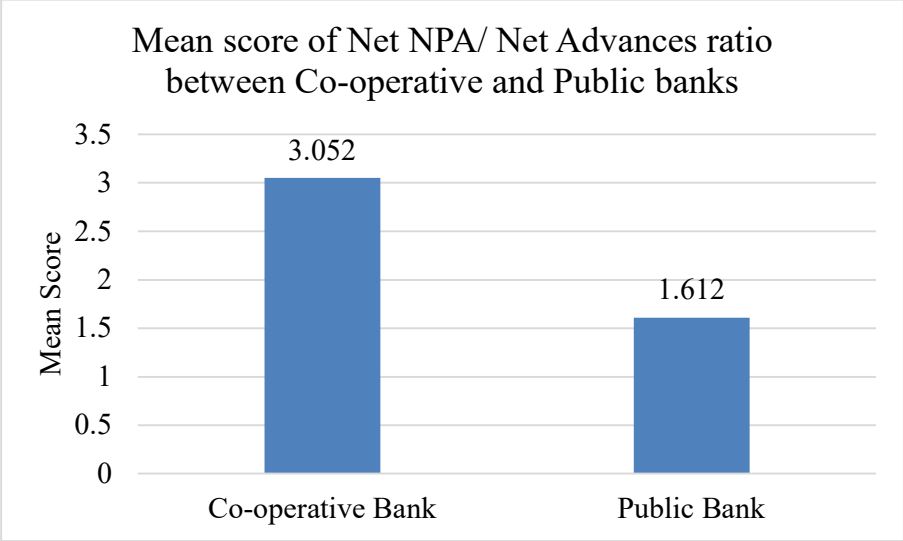
Interpretation: The above results indicate that calculated p-value is 0.207. It is more than 0.05. Therefore, ANOVA test is accepted. Hence Null hypothesis is accepted and Alternate hypothesis is Rejected.

Conclusion: There is no significant difference in Net NPA/ Net Advances ratio between Co-operative and Public banks

Findings: To understand the findings of the study, mean score of Net NPA/ Net Advances ratio between Co-operative and Public banks is obtained and shown below.

Report	
Mean	
Type of Bank	Net NPA/ Net Advances
Co-operative Bank	3.0520
Public Bank	1.6120
Total	2.3320

The report provides the mean Net Non-Performing Assets (Net NPA) to Net Advances ratio across Cooperative Banks, Public Banks, and their total average. Cooperative Banks have a mean Net NPA to Net Advances ratio of 3.0520%, whereas Public Banks demonstrate a lower mean ratio of 1.6120%. The overall average ratio across both types of banks is calculated at 2.3320%. This data highlights that Cooperative Banks, on average, exhibit a higher proportion of non-performing assets relative to their advances compared to Public Banks. Lower Net NPA ratios in Public Banks suggest better asset quality management, potentially attributed to stricter credit assessment practices and larger resources for risk management compared to Cooperative Banks, which typically serve smaller, localized markets with fewer resources for risk mitigation. The following information issue below in diagram.



Null Hypothesis H_{01C}: There is no significant difference in RONW ratio between Co-operative and Public banks.

Alternate Hypothesis H_{11C}: There is a significant difference in RONW ratio between Co-operative and Public banks.

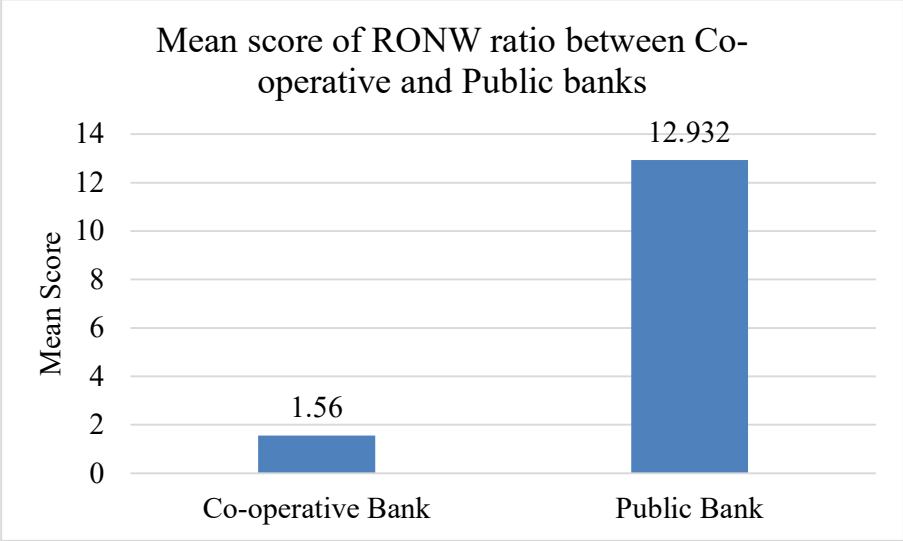
To test the above hypothesis ANOVA Test is applied. Results are as follows.

ANOVA					
RONW					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	323.306	1	323.306	7.964	.022
Within Groups	324.758	8	40.595		
Total	648.064	9			

Interpretation: The above results indicate that calculated p-value is 0.0. It is less than 0.05. Therefore, ANOVA test is rejected. Hence Null hypothesis is rejected and Alternate hypothesis is accepted.
Conclusion: There is a significant difference in RONW Ratio between Co-operative and Public banks.
Findings: To understand the findings of the study, mean score of RONW Ratio between Co-operative and Public banks is obtained and shown below.

Report	
Mean	
Type of Bank	RONW
Co-operative Bank	1.5600
Public Bank	12.9320
Total	7.2460

The report compares the mean Return on Net Worth (RONW) across Cooperative Banks, Public Banks, and their total average. Cooperative Banks exhibit a mean RONW of 1.5600%, whereas Public Banks demonstrate a significantly higher mean RONW of 12.9320%. The overall average RONW across both types of banks is calculated at 7.2460%. This data indicates that Public Banks, on average, generate higher returns relative to their net worth compared to Cooperative Banks. This difference likely reflects various factors such as scale, efficiency, and the nature of operations, where Public Banks may benefit from larger economies of scale and broader market presence, enabling them to achieve higher profitability ratios. The following information issue below in diagram.



Null Hypothesis H_{01D}: There is no significant difference in Net Margin ratio between Co-operative and Public banks.
Alternate Hypothesis H_{11D}: There is a significant difference in Net Margin ratio between Co-operative and Public banks.

To test the above hypothesis ANOVA Test is applied. Results are as follows.

ANOVA					
Net Interest Margin					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.010	1	.010	.083	.781
Within Groups	.930	8	.116		
Total	.940	9			

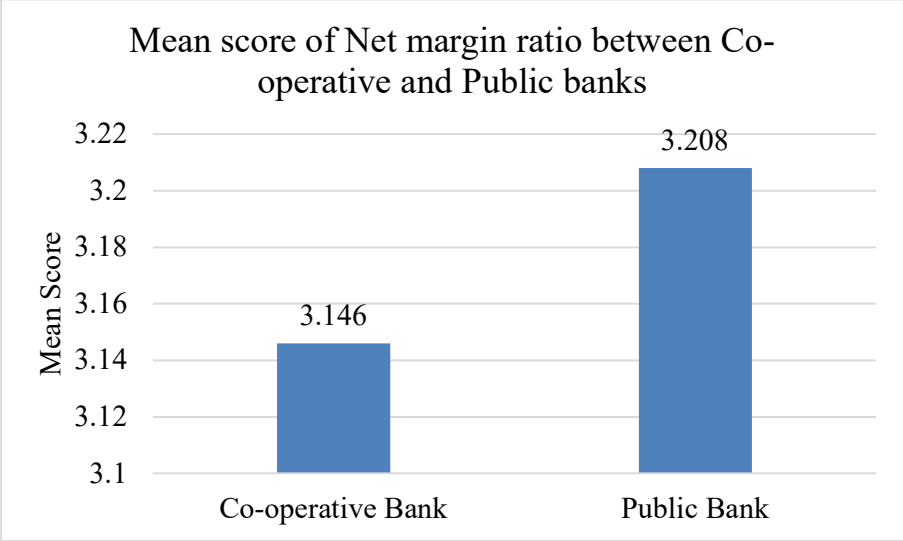
Interpretation: The above results indicate that calculated p-value is 0.781. It is more than 0.05. Therefore, ANOVA test is accepted. Hence Null hypothesis is accepted and Alternate hypothesis is Rejected.

Conclusion: There is no significant difference in Net Margin ratio between Co-operative and Public banks

Findings: To understand the findings of the study, mean score of Net Margin ratio between Co-operative and Public banks is obtained and shown below.

Report	
Mean	
Type of Bank	Net Interest Margin
Co-operative Bank	3.1460
Public Bank	3.2080
Total	3.1770

The report compares the mean Net Interest Margin (NIM) across Cooperative Banks, Public Banks, and their total average. Cooperative Banks show a mean NIM of 3.1460%, while Public Banks demonstrate a slightly higher mean NIM of 3.2080%. The overall average NIM across both types of banks is calculated at 3.1770%. This data suggests that, on average, both Cooperative Banks and Public Banks maintain similar levels of NIM, indicating comparable efficiency in managing interest income relative to their interest-earning assets. The marginal difference between the two types of banks implies that they are fairly competitive in terms of interest income generation, likely influenced by market conditions, lending practices, and operational efficiencies within each sector. The following information issue below in diagram.



Null Hypothesis H_{01E}: There is no significant difference in Cash Deposit ratio between Co-operative and Public banks.

Alternate Hypothesis H_{11E}: There is a significant difference in Cash Deposit ratio between Co-operative and Public banks.

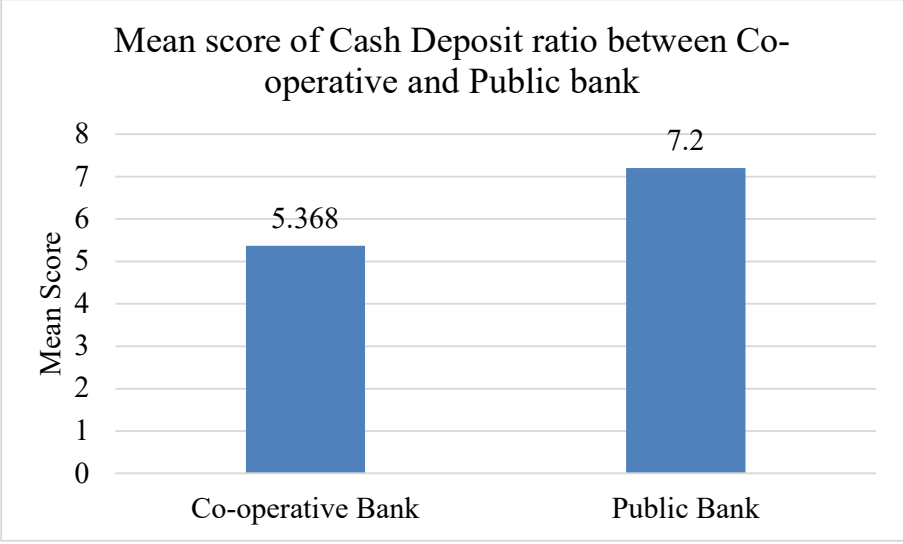
To test the above hypothesis ANOVA Test is applied. Results are as follows.

ANOVA					
Cash Deposit Ratio					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.391	1	8.391	2.941	.125
Within Groups	22.820	8	2.853		
Total	31.211	9			

Interpretation: The above results indicate that calculated p-value is 0.125. It is more than 0.05. Therefore, ANOVA test is accepted. Hence Null hypothesis is accepted and Alternate hypothesis is Rejected.
Conclusion: There is no significant difference in Cash Deposit ratio between Co-operative and Public banks.
Findings: To understand the findings of the study, mean score of Cash Deposit ratio between Co-operative and Public banks is obtained and shown below.

Report	
Mean	
Type of Bank	Cash Deposit Ratio
Co-operative Bank	5.3680
Public Bank	7.2000
Total	6.2840

The report compares the mean Cash Deposit Ratio (CDR) across Cooperative Banks, Public Banks, and their total average. Cooperative Banks have a mean CDR of 5.3680%, while Public Banks demonstrate a higher mean CDR of 7.2000%. The overall average CDR across both types of banks is calculated at 6.2840%. This data indicates that Public Banks, on average, maintain a higher ratio of cash reserves to total deposits compared to Cooperative Banks. A higher CDR in Public Banks suggests they might prioritize liquidity and safety, possibly due to larger scale and regulatory requirements, whereas Cooperative Banks, typically serving smaller and more localized markets, may have a lower CDR reflecting different operational priorities and market dynamics. The following information issue below in diagram.



Findings and Conclusions: The analysis concludes that there are significant differences in certain financial ratios between Cooperative and Public banks, while other ratios show no significant disparity. Specifically, the Capital Adequacy Ratio (CAR) and Return on Net Worth (RONW) demonstrate significant differences, with Public banks having a stronger capital base and generating higher returns on net worth. This suggests that Public banks are better positioned to absorb financial shocks and generate profits relative to their equity, likely due to their larger scale, better regulatory compliance, and more diverse revenue streams. The higher CAR in Public banks reflects their resilience and greater capacity to undertake additional lending compared to Cooperative banks, while the

superior RONW indicates greater efficiency and profitability.

On the other hand, the analysis reveals no significant difference between Cooperative and Public banks in the Net NPA/Net Advances ratio, Net Interest Margin (NIM), and Cash Deposit Ratio (CDR). This indicates that both types of banks have similar performances in managing non-performing assets and generating interest income relative to their earning assets. Although Cooperative banks show a higher mean Net NPA, suggesting relatively poorer asset quality, the difference is not statistically significant. Additionally, both types of banks demonstrate comparable efficiency in maintaining cash reserves, with Public banks showing slightly higher liquidity, though this difference is also not statistically significant. Overall, Public banks appear stronger in key performance indicators like capital adequacy and return on equity, while both bank types show comparable efficiency in asset management and liquidity.

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