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CONTENTS

Sr. No.	TITLE & NAME OF THE AUTHOR (S)	Page No.
1.	UNDERSTANDING SEASONALITY AND ITS IMPACT ON DEMAND FORECASTING: THE CASE OF INDIAN PAINT INDUSTRY <i>RAHUL GANDHI BURRA & DR. BHARAT MEGHE</i>	1
2.	AN EMPIRICAL INVESTIGATION IN THE ROLE OF MICRO-FINANCE INSTITUTIONS FOSTERING FINANCIAL INCLUSION FOR WOMEN IN HARYANA <i>RAVI DUTT & DR. R. K. SHARMA</i>	6
3.	DOMESTIC DEBT, EXTERNAL DEBT AND ECONOMIC GROWTH OF JORDAN <i>ALI MUSTAFA AL-QUDAH</i>	11
4.	EVIDENCE AGAINST EXISTENCE OF SIZE EFFECT IN THE INDIAN CONTEXT <i>DR. G. RAGHURAM</i>	17
5.	DETERMINANTS OF MOST INFLUENCING REFERENCE GROUP IN BUYING DECISION OF RURAL CONSUMER <i>SHWETA & DR. ATUL DHYANI</i>	23
6.	DECISION SUPPORT SYSTEM IN SUPPLY CHAIN NETWORKS: A CRITICAL REVIEW <i>ARTI KRISHNAWAT & DR. SHANKAR CHAUDHARY</i>	28
7.	CONSUMER AWARENESS AND FEEDBACK TOWARDS PURCHASE INTENTION OF CSR RELATED PRODUCTS USING SEM <i>R. MANIMALAR & DR. S. SUDHA</i>	37
8.	EFFECTS OF IRREGULAR SHIFT WORK ON THE MARITAL LIFE AND PARENTING DIFFICULTIES (A STRUCTURAL EQUATION MODELING) <i>FABIAN ANDREW JAMES & DR. S. SUDHA</i>	41
9.	MEASURING CORRELATION OF SELECTED DISTRICT CENTRAL CO-OPERATIVE BANK OF GUJARAT STATE <i>RAJESH R. DESAI & DR. CHETAN C. PATEL</i>	47
10.	INDIAN A STUDY ON ADVERTISING RECALLING ABILITY OF CHILDREN <i>D. RENUKA DEVI & DR. P. KANCHANA DEVI</i>	51
11.	RETAIL CUSTOMER EXPERIENCE: A RESEARCH AGENDA <i>DR. SHILPA BAGDARE</i>	55
12.	SUPPLY CHAIN MANAGEMENT IN THE GOVERNMENT SECTOR <i>DR. SOPNAMAYEE ACHARYA</i>	59
13.	ROLE OF LEADERSHIP STYLE ON ORGANIZATIONAL PERFORMANCE <i>DR. ASHA NAGENDRA & DR. SAFIA FAROOQUI</i>	65
14.	A STUDY ON EMPLOYEE RETENTION MEASURES AND ITS IMPACT ON EMPLOYEE MOTIVATION <i>DR. MAHESHA KEMPEGOWDA & PURUSHOTHAM.C.J</i>	68
15.	A STUDY ON JOB SATISFACTION AMONG UNDERGRADUATE FACULTIES WITH SPECIAL REFERENCE TO SELF FINANCED INSTITUTIONS, BANGALORE <i>USHA SHREE.V</i>	73
16.	AN EMPIRICAL ANALYSIS ON DEMOGRAPHIC TRANSITION AND SAVINGS IN INDONESIA <i>SARI LESTARI ZAINAL RIDHO, NURLINA TARMIZI, BAMBANG B. SOEBYAKTO & AZWARDI</i>	83
17.	METHODOLOGY OF AUDITING PROCESS: THE ALARM TO MALPRACTICES <i>KRISHNA A KAPADIA</i>	86
18.	GUEST SATISFACTION IN HOTELS OF KASHMIR: THE PERCEPTION OF FOREIGN TOURISTS <i>ANJUM ARA</i>	88
19.	ADVERTISING ETHICS AND SURROGATE ADVERTISING PRACTICES: AN EMPIRICAL STUDY <i>MONIKA BANGARI</i>	94
20.	IMPACT OF PROMOTIONAL MIX ELEMENTS ON TOURIST'S SATISFACTION: A CASE STUDY OF MUSSOORIE <i>MOHAMMAD SHOAIB KHAN</i>	98
	REQUEST FOR FEEDBACK & DISCLAIMER	102

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MEASURING CORRELATION OF SELECTED DISTRICT CENTRAL CO-OPERATIVE BANK OF GUJARAT STATE

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ABSTRACT

District Central Co-operative Banks have played vital role in making available short and long term financing in both rural and urban India, yet their performance in the last few decades has been questionable in terms of profitability and liquidity. Considering these facts, it becomes crucial to analyze the financial position of these banks as per current phenomenon. Out of total 372 District Central Co-operative Banks in India, 18 District Central Co-operative Banks have been operating under four divisions in Gujarat state. This paper tries to measure correlation between profitability and liquidity of the District Central Co-operative Banks of Gujarat state. Non-Parametric correlation model has been applied, based on Kendall's tau and Spearman's rho. Authors finally found that there is high degree of negative correlation between profitability and liquidity ratio of selected District Central Co-operative Banks. But, on the basis of Non parametric correlations Kendall's tau b found that there are high degrees of positive correlation between profitability and liquidity ratio of selected District Central Co-operative Banks, and Spearman's rho found that there is positive correlation between profitability and liquidity ratio of selected District Central Co-operative Banks.

KEYWORDS

correlation, district central co-operative banks, liquidity, profitability.

INTRODUCTION

Co-operative credit institutions have played an important role in providing institutional credit to the agricultural and the rural sectors. The Co-operative banking system in India is federal in structure. The co-operative banking system has a pyramid type of three-tier structure. Co-operative Banks in India have been working at three levels, viz. At State Level (Tier I) District Level (Tier II) and Village Level (Tier III). The main function of DCCBs are to provide finance to the primary credit societies, acceptance of deposits, granting of loans and advances, fixed deposit receipts, collection of bill, safe custody of valuables.

Today's is the world of competition. Competition prevails in each & every sector. Globalization & liberalization have opened the door to any company's business in India. Banking sector is also not untouched. It has to face competition not only with public sector banks and commercial banks but also with foreign banks and private finance institution. The purpose of Co-operative bank is not profiting but to withstand private bank and public sector bank. Co-operative bank should at least earn that much profit by which they can satisfy their customers. Profitability is the primary goal of all business ventures. Without profitability the business will not survive in the long run. So measuring current and past profitability and projecting future profitability is very important. Profitability is derived from two words, Profit + ability, where profit is surplus over expenses & ability means potential. It means profitability the ability of the firm to generate earnings. Most of the information on an income statement is related to operations & can be used to access & understand how the business is performing. Profitability is measured with income and expenses. Income is money generated from the activities of the business. Expenses are the cost of resources used up or consumed by the activities of the business. Profitability of bank is mainly dependent on how efficiently bank utilizes its funds. Thus if a bank fails to utilize or allocate its funds efficiently, it has to suffer losses because each fund has its own procurement cost. Thus the profitability of a bank depends on the efficiency of its funds management. An analysis of profitability reveals how the profit position stands as a result of the total transactions made during the year.

Liquidity for a bank means the ability to meet its financial obligations as they come due. Bank lending finances investments in relatively illiquid assets, but it funds its loans with mostly short-term liabilities. Thus one of the main challenges for a bank is ensuring its own liquidity under all reasonable conditions. In banking, liquidity is the ability to meet obligations when they come due without incurring unacceptable losses. Managing liquidity is a daily process requiring bankers to monitor and project cash flows to ensure adequate liquidity. Maintaining a balance between short-term assets and short-term liabilities is critical. Most of the liabilities of banks are payable on demand or at short notice. Hence liquidity means, having enough money in the form of cash, or near-cash assets, to meet your financial obligations. A bank must have sufficient liquidity in order to meet customer demands or needs. Liquidity is also required to meet with any untoward financial crisis. But excess liquidity may cause loss of earnings while lower liquidity may indicate smooth running of banks.

The DCCBs maintain liquidity keeping these entire factors in mind. They have to maintain legal reserve ratio in the form of CRR and SLR i.e. 4% and 22% of demand and time liabilities respectively as per RBI directives, which is an important consideration for liquidity. The CRR and SLR are to be maintained on fortnightly basis. The RBI is authorized to increase or decrease the CRR and SLR at its discretions.

So, profitability and liquidity correlated to each other. Liquidity should be enough to run smoothly business operation and for more profitability purpose. This paper tries to measure correlation between profitability and liquidity of the District Central Co-operative Banks of Gujarat state. Non-Parametric correlation model has been applied, based on Kendall's tau and Spearman's rho.

REVIEW OF LITERATURE

AnilkumarSoni et al. (2013) have attempted to assess the overall effectiveness in credit delivery of DCC BankRajnandgaon during the period 2009-2010 to 2011-2012. An analytical research design (Descriptive Statistics and Queue Model) was considered. The study was based on secondary data, which was collected, compiled and calculated from annual reports and records of the DCC Bank Rajnandgaon. Empirical results showed that DCC Bank Rajnandgaon was effective in credit delivery. The service rate of the bank was sound.

To know the lending practices, to measure and compare the efficiency, to study the impact of size on the efficiency and to suggest the appropriate measures to improve the efficiency of Cooperative Banks of India, Soyeliya Usha L. (2013) have studied on some successful co-op banks in Delhi (India). Descriptive research was used in that study in order to identify the lending practices of bank and determining customer's level of satisfaction. He has collected Primary Data by Observation Method, Interview Method and Structured Questionnaire. Secondary Data was collected from the Annual reports of the bank, Manual of instructions on loans and advances, Books, Articles and Research Papers and Internet. He has taken 200 respondents. He has found that the customer has taken more than one type of loan from the banks. Moreover, they suggested that the bank should adopt the latest technology of the banking like ATMs, internet / online banking, credit cards etc. so as to bring the bank at par with the private sector banks.

Dr. Sudesh et al. (2013) attempt has been made to study the financial performance of Kurukshetra central co-operative bank for the period 2006-2007 to 2010-2011. The financial performance was analyzed through the ratio analysis. After a detailed study of the financial statements of the bank, it is clear that although

there is increase in deposits an indicator of growth but the profitability of the bank has decreased for the period from 2006-07 to 2010-11. The central cooperative bank should take appropriate steps and means to improve the profitability of the bank.

To examine the growth of DCCBs in India through selective indicators, **ThirupathiKanchu** (2012) have studied on these secondary sources drawn from National Federation of State Cooperative Banks Ltd (NFSCOB) reports, RBI bulletin and other web sites, papers, books and journals relating to Co-operative banking sector. They have collected the data for the period of ten years from 2001-02 to 2011-12. For analysis of the data, they have applied various statistical tools (Mean, S.D, C.V, Trend analysis) has been used to arrive at conclusion in a scientific way. They have concluded that the growth of Number of DCCBs and their branches have negative trend up to certain period later there is negligible positive trend whereas the membership in cooperatives have been increasing. They have also concluded that the capital, reserves, and borrowings increased almost double during the study period, with a nominal percentage of variation.

Sreekala S. P. (2011) has studied on an asset and liability management in Salem co-operative bank. The methodology used in the study was analytical and descriptive in nature. The secondary data has been collected from the Annual Reports of the Salem District Central Co-operative Bank. She has used Ratio Analysis, Least Square Analysis and Correlation to analyze the data. She has concluded that the bank should improve their customer service and technology they will come up with the standard level. According to the least square method, the Net Profit is expected to increase next five year. This study revealed that the findings and recommendations which would be useful for the development and improvement to the bank.

IMPORTANCE OF THE STUDY

The above problem invites greater attentions today especially because of the growth of competitive banking and the liberalized economic policies which are likely to affect the working of DCCBs. The present study is an attempt to bring out the various facets in the working of DCCBs in Gujarat in relation to funds management. The suggestions will be helpful to the management to focus on such problems. It will be also helpful to the investors and members to analyze the financial position of DCCBs.

STATEMENT OF THE PROBLEM

The DCCBs are nodal Centre of financial institutions in the DCCBs sector in a district. They have to mobilize the available resources and utilize them in the most efficient and profitable manner.

It has been observed in Gujarat DCCBs that credit deposit ratio remains lower in comparison of private and public sector banks. Generally, in these banks, credit deposit ratio remains around 65% whereas in DCCBs it remains around 40 % which indicates that DCCBs do not utilize their funds properly. It has been found that profitability remains lower than that of the private and public sector banks. It may be due to the higher operating cost and lower interest income. Moreover, liquidity problems are also observed in DCCBs in Gujarat. So, there is importance to measure correlation between profitability and liquidity of the District Central Co-operative Banks, on that basis, it is observed that whether there is positive correlation between profitability and liquidity or not.

OBJECTIVES

1. To measure correlation between profitability and liquidity ratio of District Central Co-operative Banks.
2. To observe result on the basis of inference of profitability and liquidity ratio.

HYPOTHESIS

H₀: There is positive correlation between profitability and liquidity ratio of selected District Central Co-operative Banks.

H₁: There is negative correlation between profitability and liquidity ratio of selected District Central Co-operative Banks.

RESEARCH METHODOLOGY

Research methodology is a way to systemically solve the research problem. It may be understood as a science of studying how research is done scientifically. Here the researcher not only talk of research methods but also consider the logic behind the methods.

SOURCES OF DATA COLLECTION

In this research secondary data have been collected from the annual reports of these selected District Central Co-Operative banks. Various journals of co-operative, RBI Bulletins, Reference Books, Internet and leading daily Newspapers have been also taken into consideration to get the information.

PERIOD OF STUDY

The Present Study has covered the period of the ten-year starting from 2003-04 to 2012-13. This period is long enough to derive meaningful conclusion. Moreover this period is also selected because the complete data for the present study are available.

SAMPLE SIZE

The DCCBs in Gujarat constituted the universe of the study. There were 18 DCCBs in Gujarat State from these District Central Co-Operative banks, 17 DCCBs of Gujarat have been taken as a research sample whereas one DCCB from Rajkot has not been considered as the data of this bank has not been provided according to their policy. Profitability ratio comprises of operating profit margin ratio, spread ratio, interest earned to total fund ratio, interest paid to total fund ratio, return on total fund ratio, return on capital employed ratio. Liquidity ratio comprises of current ratio, quick ratio, cash to current assets ratio, short-term financing to total financing ratio, short-term deposit to total deposit ratio, short-term advance to total advance ratio. Six ratios taken from each.

RESEARCH TOOLS AND TECHNIQUES

The present studies used correlation coefficient method to measure correlation between profitability and liquidity of the District Central Co-operative Banks of Gujarat state. Non-Parametric correlation model has been applied, based on Kendall's tau and Spearman's rho.

RESULTS & DISCUSSION

The table 1 shows that the mean and standard deviation between profitability and liquidity ratio from the year 2003-04 to 2012-13. The table 2 shows the Karl Pearson's Coefficient of Correlation between profitability and liquidity ratio. On the basis of table 2 it has found that there are high degree of negative (-0.547) correlation between profitability and liquidity ratio of selected District Central Co-operative Banks. But, on the basis of Non parametric correlations from the table 3 Kendall's tau_b found that there is high degree of positive (0.573) correlation between profitability and liquidity ratio of selected District Central Co-operative Banks, and Spearman's rho found that there are positive (0.468) correlation between profitability and liquidity ratio of selected District Central Co-operative Banks. Table 5 describes proximity matrix; it means difference between two ratios of the co-operative bank. There is small deviation between variable no. 2 (spread ratio) of the profitability ratio and variable no. 1 (current ratio) of the liquidity ratio, and there is vast deviation between variable no. 2 (spread ratio) of the profitability ratio and variable no. 6 (short-term advance to total advance ratio) of the liquidity ratio as one more reason to negative correlation between profitability and liquidity ratio. Table 6 described inter-item correlation between profitability and liquidity ratio, it is negative (-0.547) means interrelationship between two items of the profitability and liquidity ratio indicates negative relationship. Karl Pearson's Coefficient of Correlation between profitability and liquidity ratio found high degree of negative relation as vast differentiate between mean of profitability and liquidity ratio and more deviation described by standard deviation between profitability and liquidity ratio. Liquidity shows good indication in the co-operative bank but profitability described negative indication for the co-operative bank. Co-operative bank should try to increase profitable level in the bank by reducing expenditure and through proper utilization of the money (liquidity) in the bank at right time and at right place it will enhance profitability in the organization. Reason for profitability decrease in the organization as money is not properly utilization.

RECOMMENDATION

Karl Pearson’s Coefficient of Correlation between profitability and liquidity ratio found high degree of negative relation as vast differentiate between mean of profitability and liquidity ratio and more deviation described by standard deviation between profitability and liquidity ratio. Liquidity shows good indication in the co-operative bank but profitability described negative indication for the co-operative bank. Co-operative bank should try to increase profitable level in the bank by reducing expenditure and through proper utilization of the money (liquidity) in the bank at right time and at right place it will enhance profitability in the organization. Reason for profitability decrease in the organization as money is not properly utilization.

CONCLUSION

From the above all discussion it is concluded that the Karl Pearson’s Coefficient of Correlation between profitability and liquidity ratio found that there is high degree of negative correlation between profitability and liquidity ratio of selected District Central Co-operative Banks. But, on the basis of Non parametric correlations Kendall's tau_b found that there are high degrees of positive correlation between profitability and liquidity ratio of selected District Central Co-operative Banks, and Spearman's rho found that there is positive correlation between profitability and liquidity ratio of selected District Central Co-operative Banks.

SCOPE FOR FURTHER RESEARCH

The future areas of research include:

- a) Measuring correlation between activity ratio, profitability ratio, and liquidity ratio.
- b) Post hoc approach between activity ratio and profitability ratio.
- c) Post hoc approach between profitability and liquidity ratio.

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APPENDIX

TABLE NO. 1: DESCRIPTIVE STATISTICS

	Mean	Std. Deviation	N
Profitability average from the 2003-04 to 2012-13	4.0400	3.07492	6
Liquidity average from the 2003-04 to 2012-13	28.9550	28.41978	6

TABLE NO. 2: CORRELATIONS

		Profitability average from the 2003-04 to 2012-13	Liquidity average from the 2003-04 to 2012-13
Profitability average from the 2003-04 to 2012-13	Pearson Correlation	1	-.547
	Sig. (2-tailed)		.261
	N	6	6
Liquidity average from the 2003-04 to 2012-13	Pearson Correlation	-.547	1
	Sig. (2-tailed)	.261	
	N	6	6

TABLE NO. 3: NON PARAMETRIC CORRELATIONS

			Profitability average from the 2003-04 to 2012-13	Liquidity average from the 2003-04 to 2012-13
Kendall's tau_b	Profitability average from the 2003-04 to 2012-13	Correlation Coefficient	1.000	-.200
		Sig. (2-tailed)	.	.573
		N	6	6
	Liquidity average from the 2003-04 to 2012-13	Correlation Coefficient	-.200	1.000
		Sig. (2-tailed)	.573	.
		N	6	6
Spearman's rho	Profitability average from the 2003-04 to 2012-13	Correlation Coefficient	1.000	-.371
		Sig. (2-tailed)	.	.468
		N	6	6
	Liquidity average from the 2003-04 to 2012-13	Correlation Coefficient	-.371	1.000
		Sig. (2-tailed)	.468	.
		N	6	6

PROXIMITIES

TABLE NO. 4: CASE PROCESSING SUMMARY

Cases					
Valid		Missing		Total	
N	Percent	N	Percent	N	Percent
6	85.7%	1	14.3%	7	100.0%

TABLE NO. 5: PROXIMITY MATRIX

	Euclidean Distance					
	1	2	3	4	5	6
1	.000	5.050	12.510	48.921	40.353	68.498
2	5.050	.000	14.145	49.636	40.514	68.932
3	12.510	14.145	.000	36.434	28.115	56.056
4	48.921	49.636	36.434	.000	10.130	19.727
5	40.353	40.514	28.115	10.130	.000	28.457
6	68.498	68.932	56.056	19.727	28.457	.000
This is a dissimilarity matrix.						

TABLE NO. 6: INTER-ITEM CORRELATION MATRIX

	Profitability average from the 2003-04 to 2012-13	Liquidity average from the 2003-04 to 2012-13
Profitability average from the 2003-04 to 2012-13	1.000	-.547
Liquidity average from the 2003-04 to 2012-13	-.547	1.000

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