

## Managerial Efficiency in Indian Private Sector Banks with Women CEOs: An Empirical Study on ICICI and Axis Bank

Manidipa Dasgupta & Seeuly Nath

*The University of Burdwan, Kolkata, India*

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### Abstract

Banking sector is proposed to be the most vibrant financial intermediary with effective assistance in promoting the underprivileged sector in different financial and non-financial dimensions. In this effort, the two-important segments of the commercial banks i.e. public and private can be declared as the main ladders towards socio-economic upliftment with functional activities in the blend of commercialisation and socialisation. Banking operations, in this very context, would add special impact in socio-economic development of any developing country like India, if it includes the backward gender class of our society, women under its operational purview. It is very appreciable situation that in market, the leading banks are having their chief executive positions from women community. Amongst which private sector banks find special importance for involvement of women in top level managerial positions successfully for longer period. In this issue, ICICI and Axis Bank are notable. This adds huge positive impact on sustainable gender development through economic upgradation in men-dominated financial world. In this very regard, an assessment of managerial efficiency ifrom different angles as measured by financial ratios, is to be performed to estimate the managerial capability of the said women-led banks (ICICI, Axis Bank) in competitive scenario.

The present paper hence aims at (i) evaluating the managerial efficiency position of ICICI and Axis Bank during the study period with some selected ratios, (ii) framing an intra-bank and inter-bank comparative assessment of managerial efficiency of ICICI and Axis Bank during the study period with ranks and comprehensive scores (composite ranking) on selected ratios, (iv) examining whether there is any difference in the managerial efficiency of ICICI and Axis Bank as a whole, (v) assessing whether there is any difference in the managerial efficiency of ICICI and Axis Bank before and after being led by women by applying relevant statistical techniques and research methodology.

**Key Words:** Commercial banks, Private sector banks, Women, Managerial efficiency

**JEL Classification:** G21

**Paper Classification:** Research Paper

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### Introduction

In developing country like India, banking sector acts as an important financial institution because of its benefiting financial attitude towards needy, unbanked and under privileged sections of the society<sup>1</sup>. So, it can be admired that they are not only purveyors of credit, but also



harbingers of social and economic development with which they can invite inclusive growth<sup>2</sup> in our country. Now, the prospective promotional attitude of banking sector towards society gets a special flavour when it intends to invite the backward gender class, women in its operation specially in its administration.

In India, among different categories of banks, the commercial banks<sup>3</sup> mainly their two wings, public and private, are claimed to have special significance in ensuring socio-economic upliftment within the combination of commercialisation and socialisation as per their individual levels of consideration. This phenomenon appreciates the gender development towards the administrative role specially as a financial controller in country's financial institutions from their confinement into only household activities. Now, it is very adorable situation that in market, the top level banks are having their chief executive positions from women community. Amongst which the private sector specially ICICI, Axis Bank etc. find involvement of women minds in administration successfully for longer period more than 7 years. This adds special impact on gender development through economic upgradation in men-dominated financial world. But as commercial banks may have to bear tremendous pressure due to varied exogenous and endogenous causes in their operations, question may arise on the successful sustainability of the said women-led banks in the competitive scenario. In this very context, to get a steady and progressive financial operation, the respective banks should ensure consistency in different aspects of managerial efficiency, as judged by financial ratios. This will assist them to avail of the confidence of the stakeholders on their performance (Riaz and Mehar, 2013; Pelria et al. 2015; Thihaverunavukkarasu and Nachimthu, 2015; Goel and Rekhi, 2013; Govel and Tripathy, 2014).

Taking into consideration the background of the present paper, the remainder parts of the study are found in ten more sections. Section 2 and 3 respectively deal with the review of the related literature and contribution of the present study. Section 4 reveals the research gap. Section 5 states the objectives of the present study. Section 6 is concerned with an overview of the women CEOs in commercial banks in India. In Section 7, the methodology adopted in the study is narrated. Section 8 focuses on the analysis and interpretation made on the managerial efficiency of the two banks. Section 9, 10 and 11 present respectively the conclusion derived from the study, scope for future research and limitations of the present study.

## Review of Related Literature

The study on women in entrepreneurial leadership always claims special importance in research and thus attracts eminent researchers to explore their observations. Moreover, if the activities of women are related to administration of any financial institution, the study touches special significance. Taking the fact into account, several researchers time-to-time have presented their inferences on the role of women in financial institutions specially banking sector. Some of the studies till reviewed are now enumerated as under.

In India, the financial and economic reforms appeared to have positive and effective impact on efficiency of all financial institutions specially the banking sector (Karimzadeh, 2012). In India, banks would operate well in comparison with international operational efficiency standards (Hussain, 2014) where the size and ownership would influence the operational efficiency

<sup>1</sup>In Indian scenario, 63 per cent of the share of financial market is held by Banks, Dr. D. Subbarao, the Ex-governor of the RBI in FICCI-IBA Conference in Mumbai on August, 2013.

<sup>2</sup>Inclusive growth is a concept that advances equitable opportunities for economic participants during economic growth with benefits incurred by every section of society. It implies direct linkage between the macroeconomic and microeconomic determinants of the economy and economic growth.

<sup>3</sup>In this paper the term 'commercial banks' indicates scheduled commercial banks.

(Hussain, 2014). Private sector banks in this context, would be highly appreciated for their soundness in financial and non-financial operations which would lead them towards successful sustainability (Sahoo and Mishra, 2012; Nandkumar and Singh, 2014) and also towards having public acceptance sometimes more than that of the Public Sector Banks (Satheye, 2005; Gulati, 2011; Kaur, 2011; Mishra et al. 2012; Chahal, 2013; Chaudhury, 2014).

In our country, gender inclusion in corporate specially in financial institutions like banks would add a significant impact on socio-economic synergic movement (Chandani & Mehta, 2013; Chandani et al. 2014; 2014; Ramaya and Raghurama, 2016). From the administrative appearance, women would like to maintain a steady financial performance with which commercial and professional aspects of the banking sector would be fulfilled and social goal would be achieved (Chandani & Mehta, 2013, Chandani et al. 2014; Gollapudi, 2014). In this very regard, the special feminine traits connected with savings etc. would help women in taking financial decisions even better than their men counterparts (Ramaya and Raghurama, 2016). This would sometimes lead to generate more profitability in women-led banks than that of men leadership and likewise would offer an appreciable stock market position of the respective banks (Chandani et al. 2014; 2014; Strelcova, 2004). In contrary, the study made by Chandani et al. (2014) declared that the financial performance of banking sector specially in liquidity and managerial efficiency aspect might not get any significant variation in respect of the change in leadership from men to women and vice versa.

In banking sector in India, women proved their professionalism by involving in administration in private sector banks amongst which many have been detected at the top level with sound financial and non-financial performances tending towards customization and high public acceptance grade. Now, in the competitive arena, women-led banks should have consistency in their managerial efficiency in different dimensions which would ultimately lead them to have profitability and high liquidity position respectively (Adebayo et al. 2011; Das et al. 2015). In this context, ratios could be taken as the most important indicator of financial health in terms of profitability, liquidity, solvency and efficiency and also in determining credit growth and credit concentration of any institution including banking one (Madhura, 2009; James, 2013; Karim and Alam, 2013).

### **Contribution of the Study**

The present paper focuses on the managerial efficiency of two leading private sector banks having been led by women for the same number of periods. In this context, under the same banking sectoral movement, Private, a comparative assessment has been sketched to determine the managerial efficiency of men-owned and women-owned periods within and in between the said two banks and at the same time, assessment has also been made on the managerial efficiency in between the women-owned periods of two specific banks. Thus, this paper highlights a vivid study of the intra and inter-bank comparative assessment of managerial efficiency of the two women-owned banks under both men-owned and women-owned phases. Therefore, this paper detects the most efficient phase (men-owned or women-owned) in managerial activities within one bank and between two banks as measured through some selected ratios of managerial efficiency.

### **Research Gap**

It can be detected from the literature, till reviewed, that a nominal number of studies have concentrated on the comparative assessment of the financial position of women-led banks. Moreover, no study, till reviewed, has focused on an in-depth study specially within and between women-led banks on managerial efficiency related areas. In this context, to fill up the gap, the

present study has been structured where two private sector banks having women in leadership successfully for longer period have been taken.

### Objectives of the Present Study

The present study aims at:

- (i) evaluating the managerial efficiency position of ICICI and Axis Bank during the study period of consecutive 14 years (2002-03 to 2015-2016) applying some selected ratios,
- (ii) assessing the managerial efficiency status of ICICI and Axis Bank more specifically using comprehensive scores on the selected ratios,
- (iii) framing an intra-bank and inter-bank comparative assessment on managerial efficiency of ICICI and Axis Bank during the study period,
- (iv) examining whether there is any difference in the managerial efficiency of ICICI and Axis Bank as a whole.
- (v) assessing whether there is any difference in the managerial efficiency of ICICI and Axis Bank before and after being led by women.
- (vi) evaluating whether there is any difference in the managerial efficiency of women-led period of ICICI and that of Axis Bank.

### Women CEOs and Private Sector Banks in India – An Overview

Since its very inception, in the 18th century, Indian banking system is experiencing radical changes in its shapes and norms as specified by different phases like Nationalisation and Consolidation Era (1955-1990), Indian financial and banking sector reforms and partial Liberalisation (1990-2004) and the period of increased Liberalisation (2004 onwards) etc. In this context, to materialize country's progressive movement towards country's inclusive economic growth prospect, Indian banks mainly scheduled<sup>4</sup> engage themselves in retail banking (individual or small business), whole-sale banking (corporate), Treasury Operations (Investment in Debt Market, Equity Market, Mutual Funds, Derivative Trading) and para banking business (Hire Purchase, Leasing, Merchant Banking, Factories etc.). Among the scheduled banks [commercial and cooperative banks (rural and urban)], the commercial banks<sup>5</sup> are claimed to be the main motivators in socio-economic prosperity of our country with appreciable levels of savings deposit, deployment of credit and investment in all sectors, priority or not<sup>6</sup>. Out of the varied categorization of commercial banks, in India, public sector banks are accepted as a means to achieve the socio-economic inclusion for all the financially excluded poor of our country. But in spite of their prestigious appearance in India, public sector banks have to face sustainable challenges in their operations mainly due to lack of fresh capital injection, non-proactive assessment, ageing workforce etc. All these issues are being aggravated with the introduction of reformation of Indian economy i.e. with the entry of Privatization with high level of

<sup>4</sup>In India, the banking structure contains a very negligible number of non-scheduled banks also, which sometimes lose their legal status in absence of legislative banking activities.

<sup>5</sup>Commercial banks can be divided into public sectors, private sector, regional rural banks and foreign banks. Public banks have SBI and its associates (SBI of Bikaner & Jaipur, SBI of Hyderabad, SBI of Mysore, SBI of Patiala, SBI of Travancore); Nationalised banks (Allahabad, Andhra, Bank of India, Bank of Baroda, PNB, UCO, UBI, United Bank etc.); Other Public banks (Industrial Development Bank of India and BharatiyaMahila Bank). In Private sector banks, Axis Bank, Development Credit Bank Ltd., HDFC Bank, ICICI Bank, IndusInd Bank, Kotak Mahindra Bank, Yes Bank are considered as new ones (set up in 1993). Apart from IDFC, Bandhan Bank of Bandhan Financial Services has also received 'in principle' licenses from the RBI

<sup>6</sup>Commercial banks performance in India – (i) aggregate deposit Rs.67504.54 billion (Demand deposit Rs.6622.9 billion and Time Deposit Rs.60881.55 billion), (ii) credit deployed Rs.52604.59 billion, (iv) Investment Rs. 20061.05 billion, (v) priority sector lending Rs.16411.00 billion (RBI, 2013)

professionalism. This effect can be found in the financial statements of private sector banks where lower amount of Non-Performing Assets (NPA) and higher level of net profit, in comparison with that of public Sector (Economic Times, 2016)<sup>7</sup>, are detected.

In this context, commercial banks can add special approach to socio-economic progression by accepting gender inclusion in their administrative position. In this issue, among the two main domains of commercial banks – public and private, private sector is specially mentionable as it contains the top-level banks in market like ICICI and Axis Bank (as per asset size) as being led by women successfully for longer period of time<sup>8</sup>. As per recent available disclosure of RBI (2015-2014), women-led private sector banks have contained about 82 per cent of total deposit and more than half of the total advances of all private sector banks (Table – 1). Amongst the total deposits and advances of private sector banks led by women, ICICI has held 56 per cent and 57 per cent of the total deposits and total advances respectively (moneycontrol.com).

**Table 1: Table showing Total Deposit and Advance of Women-led and Men-led private sector banks in India (Rs. In lakhs)**

Years	Total Deposit	Women Led Bank	Men Led banks	Total Advance	Women Led Bank	Men Led banks
2014-15	175731470	75886497.58	99844972.42	143342232	102657266.28	40684965.72
2013-14	149679390	67193055	883935.68	122133414	62179704	59953710.00
2012-13	131349296	59625599	768265.74	105376824	53568438	51808386.00
2011-12	109784907	51414078	622244.81	88654349	46256643	42397706.00
2010-11	97215145	44410088	557311.54	72591122	38810304	33780818.00
2009-10	80656914	36720329	463252.32	58599816	30632160	27967656.00
2008-09	71447875	35136594	378756.81	51913769	31649295	20264474.00
2007-08	65729872	34848092	325241.45	47581279	30082945	17498334.00
2006-07	53576963	30029588	246473.84	39006402	24366615	14639787.00
2005-06	40612626	21176262	200929.56	30294057	17482565	12811492.00
2004-05	31285558	13583031	181324.81	22694404	11102521	11591883.00
2003-04	26940914	9352182	180346.66	17410661	7410759	9999902.00
TOTAL	1034010930	479375395.6	104653055.6	799598329	456199215.3	343399113.7

## Methodology of the present study

### Type of Study

Methodology followed in the present study is predominantly an empirical one.

### Method of data collection

Data of the present study has been collected exclusively from secondary sources mainly from 'Capitaline Database'.

### Period of study

14 consecutive financial years (2002-2003 to 2015-2016) have been taken for the study period.

### Variables studied

The study has its intensive focus on two specific private sector banks - ICICI and Axis Bank. Both of them are led by women for more than 7 years (from 2009-2010 onwards).

<sup>7</sup>Net profit in public sector and private sector are respectively found as Rs.17465 crore and Rs.19787 crore. The NPAs in public sector and private sector are respectively Rs.33634.7 crore and 317312.8 crore (Economic Times, 2016).

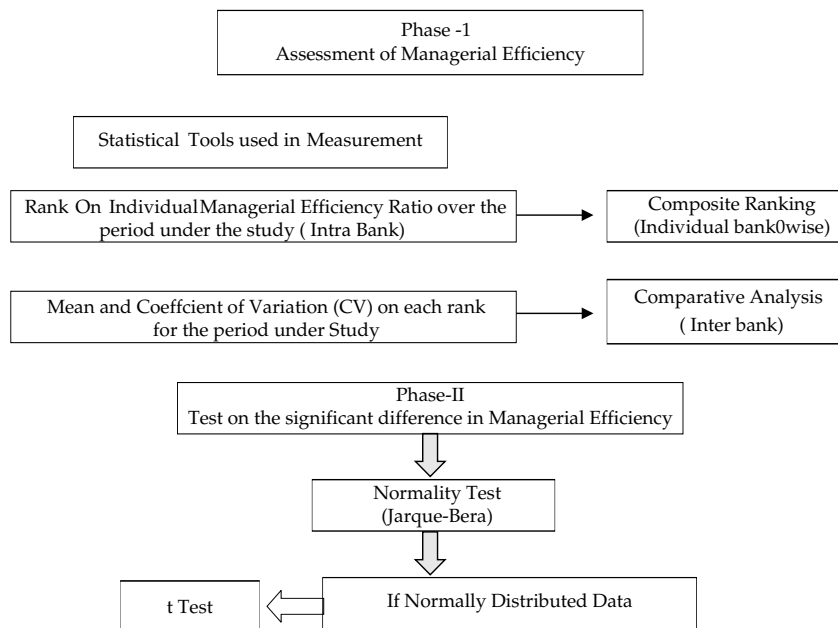
<sup>8</sup>ICICI has been found as the second largest and Axis Bank has been detected as the third largest Bank in India in terms of Assets (www.icicibank.com, www.axisbank.com). Both the Banks are under the leadership of women (ICICI-ChhandaKochhar, Axis Bank – Shikha Sharma) since 2009-2010

**Research Models**

To analyse the managerial efficiency of the two banks, data on the four basic efficiency related ratios like (a) Net Interest Income/Total Fund (NII/TF), (b) Operating Expenses/Total Fund (OE/TF), (c) Net Profit to Total Fund (NP/TF) and (d) Net Income/Capital Employed (NI/CE)<sup>9</sup> have been collected from the financial statements of the two concerned banks for 14 consecutive financial years i.e. from 2002-03 to 2015-16 as disclosed in the said database. In the 14 consecutive financial years, the first 7 years (2002-2003 to 2008-2009) were under the men leadership and the next 7 years were under the leadership of women (2009-2010 to 2015-2016).

The present study has been framed under two phases – I and II (Figure-1). Phase-I has considered the issues of Assessment of Managerial Efficiency of the two specific banks – ICICI and Axis Bank. In Phase -II, the present study has attempted to test whether the managerial efficiency of the two banks differ from each other for individual ratio. It has also been extended to test whether the women-led period performed better than the men-led period for each ratio of each bank under study and also to test whether the women-led periods of one bank performed better than the women-led period of another bank for each ratio. Here, the assessment has been made after testing normality of the data set (Anesthesiol, 2015).

**Figure-1: Route Map of Analysis of the present paper.**



Source: Reserve Bank of India

<sup>9</sup>These ratios have been selected from moneycontrol.com following its rule of classification of ratios under the area of ‘Management Efficiency of banks’. Net Interest Income/Total Fund (NII/TF)\*100: This ratio indicates the percentage of interest income used to generate total fund. Higher the ratio, better will be the managerial efficiency in handling interest income in making total fund and higher will be the rank. Operating Expenses/Total Fund (OE/TF)\*100: This ratio indicates the percentage of operating expenses have to be incurred in having the amount of total fund. Lower the ratio, better will be the managerial efficiency in handling operating expenses in connection with making total fund and higher will be the rank. Net Profit to Total Fund (NP/TF) \*100: This ratio indicates the percentage of net profit used to generate total fund. Higher the ratio, better will be the managerial efficiency in handling net profit in making total fund and higher will be the rank. Net Income/Capital Employed (NI/CE)\*100: This ratio indicates the percentage of net income used to generate capital employed. Higher the ratio, better will be the managerial efficiency in handling net income in generating the capital employed and higher will be the rank.

**Statistical Tools**

To ascertain the ratio-wise performance of the said two banks for the period under study, individual rank has been assigned for each ratio (NII/TF, OE/TF, NP/TF, NI/CE) for each bank on the basis of their over the year performance. After this attempt, a composite rank i.e. the summation of the ranks of all the ratios in a specific year has been allotted to determine the comprehensive score of year-wise managerial efficiency of each Bank (Sur et al.. 2013; 2014).

In Phase -II, the present study has been continued to test whether the position of managerial efficiency in average (mean) of one bank significantly differs from the other one with the application of t test statistic to each concerned ratio.

Here, two-tail t test would be applicable to determine the significant difference between the managerial efficiency of each ratio of the two concerned banks for the whole period under study (2003-2004 to 2015-2016). One-tail t test in this context would be applied to test whether any significant difference would be found in managerial efficiency in each ratio between women-led period (2009-2010 to 2015-2016) and men-led period (2003-2004 to 2008-2009) under each bank. The significant difference of the managerial efficiency in each ratio of women-led period of one bank with that of the another bank would also be tested with the application of one-tail t test. Here, in the last case, analysis would be extended on the ratios where the test result inferred that the women-led period performed better than that of the men-led one in both banks.

But before this application, it is highly recommended to test the normality of time series data (Anesthesiol, 2015). Here, the normality test has been conducted by Jarque-Bera (JB) test statistic. The t test statistic can only be tested on the normal time series data (Anesthesiol, 2015). .

Test for Normality: Jarque-Bera Test

$$JB = n \left[ \frac{S^2}{6} + \frac{(K-3)^2}{24} \right] \dots\dots\dots(2)$$

Where, n= number of observations, S = Skewness, K= Kurtosis

For a normal distribution, the values of S and K should be 0 and 3 respectively so that JB becomes equal to 0. A high value of JB is an indicator of non-normality. In other words, if the p value of the corresponding JB statistic is less than or equal to 0.05 then the data would be considered non-normal at a significant level of 5 per cent or less.

**Hypotheses**

The hypotheses used in the present study can be enumerated as under.

H<sub>01</sub>:  $\mu_1 = \mu_2$  (There was no significant difference between the managerial efficiency of two banks)

$H_{A1}$ :  $\mu_1 \neq \mu_2$  (There was significant difference between the managerial efficiency of two banks)  
 $\mu_1 = \text{ICICI}, \mu_2 = \text{Axis Bank}$

$H_{02}$ :  $\mu_1 = \mu_2$  (There was no significant difference between the managerial efficiency of women-led and men-led period of each of the two banks)

$H_{A2}$ :  $\mu_1 > \mu_2$  (The women-led period performed better than the men-led period in managerial efficiency in each of the banks)  
 $\mu_1 = \text{Women-led period}, \mu_2 = \text{Men-led period}$

$H_{03}$ :  $\mu_1 = \mu_2$  (There was no significant difference between the managerial efficiency of women-led period of ICICI and Axis Bank)

$H_{A3}$ :  $\mu_1 > \mu_2$  (The women-led period of ICICI performed better than that of Axis Bank in managerial efficiency)  
 $\mu_1 = \text{Women-led period of ICICI}, \mu_2 = \text{Women-led period of Axis Bank}$

## Analysis and Interpretation

Phase I – Assessment of Managerial Efficiency

Phase1: A:Overall Comparative Assessment–Intra Bank Performance and Inter Bank Performance

### (a) Intra Bank Comparative Assessment

#### ICICI

- Considering NII/TF, it is clearly visible that the ratio has experienced fluctuation in its trend having mean (2.142 per cent) and CV (24.316 per cent) over the period under study. An increasing trend has been found from 2011-12 onwards under the leadership of women. Here, highest rank based on the performance of the ratio during the study period has been found in 2014-2015, while in 2002-03, it has shown its least performance when men were in leadership (Table-2). Comparing men-led and women-led period, it has been found that women-led period performed better than men-led period with higher mean (2.607 per cent) and lower CV (13.032 per cent) (Table – 3B) than their men counter parts (mean 1.730 per cent, CV 15.894 per cent) (Table 3A).

**Table 2: Table showing Managerial Efficiency Position of ICICI and Axis Bank (2002-2003 to 2015-2016) (in per cent)**

Year	ICICI Bank										Axis Bank									
	NI/TF	R1	OE/TF	R2	NP/TF	R3	NI/CE	R4	CR R1+R2+R3+R4	NI/TF	R1	OE/TF	R2	NP/TF	R3	NI/CE	R4	CR R1+R2+R3+R4		
2015--2016	2.945	2	1.760	13	1.35	4	5.071	1	4(20)	3.203	1	1.195	8	1.565	3	4.987	2	1 (14)		
2014-2015	2.947	1	1.779	14	1.73	1	4.831	2	3(18)	3.079	3	1.230	12	1.593	2	4.890	4	3 (21)		
2013-2014	2.760	3	0.420	3	1.64	2	4.507	3	1(11)	3.118	2	1.288	14	1.622	1	5.050	1	2 (18)		
2012-2013	2.581	4	0.409	2	1.55	3	4.134	7	2(16)	2.838	4	1.229	11	1.521	4	4.762	5	4 (24)		
2011-2012	2.193	8	0.393	1	1.32	5	3.726	13	5(27)	2.807	5	1.255	13	1.485	5	4.704	6	7.5(29)		
2010-2011	2.217	6	0.446	5	1.27	7	3.852	11	7(29)	2.704	7	1.185	7	1.396	6	4.612	8	6(28)		
2009-2010	2.230	5	0.486	8	1.11	10	4.285	5	6(28)	2.770	6	1.228	10	1.392	7	4.954	3	5(26)		
2008-2009	2.203	7	0.514	11	0.99	13	4.355	4	8(35)	2.495	8	1.131	6	1.229	8	4.510	9	9(31)		
2007-2008	1.824	10	0.480	7	1.04	11	4.042	8	9(36)	2.358	10	1.210	9	0.977	11	4.010	10	12 (40)		
2006-2007	1.632	12	0.437	4	0.9	14	3.649	14	14(44)	2.003	12	0.984	5	0.899	13	3.385	13	14(43)		
2005-2006	1.868	9	0.447	6	1.01	12	3.876	10	10 (37)	2.166	11	0.967	3	0.974	12	3.636	12	11(38)		
2004-2005	1.686	11	0.505	10	1.19	8	3.787	12	13 (41)	1.934	13	0.854	1	0.885	14	3.080	14	13(42)		
2003-2004	1.575	13	0.539	12	1.3	6	4.006	9	12(40)	2.390	9	0.978	4	1.152	9	4.632	7	7.5(29)		
2002-2003	1.322	14	0.491	9	1.12	9	4.259	6	11 (38)	1.644	14	0.962	2	0.980	10	3.744	11	10(37)		
Mean	2.142		0.651		1.25		4.170			2.536		1.121		1.262		4.354				
SD	0.521		0.476		0.25		0.417			0.477		0.141		0.279		0.654				
CV	24.316		73.161		20.2		10.012			18.816		12.558		22.117		15.016				

Source: Authors' Calculation  
 Note: Figures in p parenthesis indicate the total of the ranking of four ratios

**Table 3 A: Table showing Men CEO and Managerial Efficiency of ICICI and Axis Bank (2002-2003 to 2008-2009) (in per cent)**

Year	ICICI BANK							AXIS BANK										
	NI/TF	R1	OE/TF	R2	NP/TF	R3	NI/CE	R4	CR R1+R2+R3+R4	NI/TF	R1	OE/TF	R2	NP/TF	R3	NI/CE	R4	CR R1+R2+R3+R4
2008-2009	2.203	1	0.514	6	0.99	6	4.355	1	2.5 (14)	2.495	1	1.131	6	1.229	1	4.510	2	2 (10)
2007-2008	1.824	3	0.480	3	1.04	4	4.042	3	1(13)	2.358	3	1.210	7	0.977	4	4.010	3	4.5(17)
2006-2007	1.632	5	0.437	1	0.9	7	3.649	7	7(20)	2.003	5	0.984	5	0.899	6	3.385	6	7(22)
2005-2006	1.868	2	0.447	2	1.01	5	3.876	5	2.5(14)	2.166	4	0.967	3	0.974	5	3.636	5	4.5(17)
2004-2005	1.686	4	0.505	5	1.19	2	3.787	6	5(17)	1.934	6	0.854	1	0.885	7	3.080	7	6(21)
2003-2004	1.575	6	0.539	7	1.3	1	4.006	4	6(18)	2.390	2	0.978	4	1.152	2	4.632	1	1(9)
2002-2003	1.322	7	0.491	4	1.12	3	4.259	2	4(16)	1.644	7	0.962	2	0.980	3	3.744	4	3(16)
Mean	1.730		0.488		1.08		3.996			2.668		1.163		1.490		4.077		
SD	0.275		0.036		0.13		0.251			1.270		0.518		1.239		1.202		
CV	15.894		7.411		12.5		6.287			47.604		44.531		47.604		29.483		

Source: Authors' Calculation  
 Note: Figures in parenthesis indicate the total of the ranking of four ratios

**Table 3 B: Table showing Women CEO and Managerial Efficiency of ICICI and Axis Bank (2009-2010 to 2015-2016) (in per cent)**

Year	ICICI BANK								AXIS BANK							
	R1	OE/TF	R2	NP/TF	R3	NI/CE	R4	CR R1+R2+R3+R4	R1	OE/TF	R2	NP/TF	R3	NI/CE	R4	CR R1+R2+R3+R4
2015-2016	2.945	1.760	6	1.35	4	5.071	1	3 (13)	1	1.195	2	1.565	3	4.987	2	1(8)
2014-2015	2.947	1.779	7	1.73	1	4.831	2	1.5(11)	3	1.230	5	1.593	2	4.890	4	3(14)
2013-2014	2.760	0.420	3	1.64	2	4.507	3	1.5(11)	2	1.288	7	1.622	1	5.050	1	2(11)
2012-2013	2.581	0.409	2	1.55	3	4.134	5	4(14)	4	1.229	4	1.521	4	4.762	5	4(17)
2011-2012	2.193	0.393	1	1.32	5	3.726	7	5(20)	5	1.255	6	1.485	5	4.704	6	7(22)
2010-2011	2.217	0.446	4	1.27	6	3.852	6	7(22)	7	1.185	1	1.396	6	4.612	7	6(21)
2009-2010	2.230	0.486	5	1.11	7	4.285	4	6(21)	6	1.228	3	1.392	7	4.954	3	5(19)
Mean	2.607	0.868		1.477		4.354				1.350		1.693		4.834		
S.D.	0.340	0.699		0.191		0.540				0.511		0.708		0.170		
C.V.	13.032	80.481		12.910		12.415				37.824		41.815		3.519		

Source: Authors' Calculation.

Note: Figures in parenthesis indicate the total of the ranking of four ratios (in per cent)

- In OE/TF (mean 0.651 per cent and CV 73.161 per cent), 2011-12 was found to be the best performer whereas 2014-2015 was the worst one with mean value 0.393 per cent and 1.779 per cent respectively. Both the years were under the women leadership (Table-2). Here, it has been found that the mean value of the ratio under men-led period (0.488 per cent) (Table – 3A) has been below than that of the women led period (0.868 per cent) with lower level of CV (Table – 3B) (men-led period- 7.411 per cent, women-led period - 80.481 per cent). This fact has inferred that men-led period performed better than the women-led ones as lower the OE/TF for both mean and CV would indicate high managerial efficiency in this respect.

- In NP/TF (mean 1.25 per cent and CV 20.2 per cent), performance was found as best in 2014-2015 out of 14 years of study period with highest ratio under the leadership of women, while worst performance has been noticed in the year 2006-2007 where men were in leadership (Table-2). Men-led period here has been found as a little bit more consistent (Table- 3A) than the women-led one with lower level of CV (Table – 3B) (men-led period - 12.5 per cent, women-led period- 12.910 per cent).

-The performance in NI/CE (mean 4.170 per cent, CV 10.012 per cent) was found as the least efficient in 2006-07 (men-led period), while best in 2015-16 (women-led period) (Table-2). It would be reflected with mean and CV value of women-led period (mean-4.354 per cent, CV- 12.415 per cent) (Table- 3B) in comparison with men-led one (mean-3.996 per cent, CV-6.287 per cent) (Table-3A).

## Axis Bank

- In NII/TF, the bank has maintained its performance with mean 2.536 per cent and CV 18.816 per cent. The performance of the bank was detected as the best in 2015-16 (women-led period) whereas 2002-03 has been found to be the worst performed year (men-led period) (Table-2). It would also be echoed in the overall performance of women-led period with higher mean and lower CV (3.305 per cent, 46.200 per cent respectively) (Table – 3B) in comparison with men-led period (mean-2.668 per cent, CV-47.604 per cent) (Table-3A).

- In OE/TF, the bank has managed operating expenses to form total fund during the study period with mean 1.121 per cent and CV 12.558 per cent. The first five ranks on year-wise performance have been found during men-led period, while women-led period has not performed well in this context (Table 2). This has also been reflected in the comparative assessment on the basis of mean (men-led period - 1.163 per cent, women-led period-1.350 per cent). In this context, as higher OE/TF refers to lower efficiency, it can be inferred that men-led period performed better than women-led one (Table 3A, 3B).

- In NP/TF with mean 1.262 per cent and CV 22.117 per cent, 2013-14 has been found as the best performing year under women-led period and the year 2004-05 found as the worst performance year under the men leadership. Here, the first 7 ranks based on the performance of the ratio have been found under the women-led period (Table 2). This would also be exposed in the mean (1.693 per cent) and CV (41.815 per cent) of women led period (Table - 3B) in comparison with the men led period (Table – 3A) with mean 1.490 per cent and CV 47.604 per cent

- While analyzing NI/CE for the study period with mean 4.354 per cent and CV 15.016 per cent, it has been found that 2013-1014 (women led period) ranked first whereas 2004-05 (men led period) ranked last. Here, the first eight ranks (except the 7th rank) as per the performance, have been under women leadership (Table-2) which has also been echoed from the data of Table 3A, 3B where women –led period has higher mean (4.834 per cent) and lower CV (3.519 per cent) (Table – 3B) than that of the men-led period (mean 4.077 per cent, CV 29.483 per cent) (Table 3A).

In ICICI, the overall performance of all the managerial efficiency ratios declared the fact that the year 2013-2014 was the best performing year (women-leadership), while 2006-07, under the men-leadership was detected as the least performing year in this context (Table 2)<sup>10</sup>. In Axis Bank also, women-led period has been declared as the best one as per the composite ranking of the managerial efficiency ratios as 2015-16 has been assigned the highest rank, while the men-led period was detected as the worst performing year (2006-07) in this context.

#### (b) Inter Bank Comparative Assessment

Comparing performance of both the Banks, it could be found that the average performance of Axis Bank in all ratios except OE/TF (negatively associated with higher efficiency) were better than that of the ICICI. But as per the consistency measurement, Axis Bank has not been proved as more efficient in NP/TF and NI/CE than that of ICICI (Table 2). Considering the performance of men-leadership of both the banks, it has been observed that the mean value of all the ratios except OE/TF of Axis Bank were found as better than that of ICICI (Table 3A). But as per consistency level of all the ratios, Axis Bank proved less efficient than its counterpart. Under women-leadership, the performance of Axis Bank again has been proved as better than ICICI as per the average except OE/TF. But in consistency measurement, it was found better than ICICI only for OE/TF and NI/CE.

#### Phase II – Test of the significant difference in Managerial Efficiency of ICICI and Axis Bank

As per the normality test following Jarque-Bera test statistic along with probabilities, the below mentioned results for each of the profitability ratios can be obtained.

- In ICICI, the data on all the ratios have been normally distributed with low Jarque-Bera and insignificant probabilities with exceptions of OE/TF.
- In Axis Bank, data of all the concerned ratios have been found as normal with low Jarque-Bera and insignificant probabilities.

Table –4 reflects the position of the normality test following Jarque-Bera and the corresponding probabilities on the four specific ratios.

**Table 4: Table showing Normality Test on Managerial Efficiency Ratios of ICICI and Axis Bank (2003-2004 to 2015–2016)**

Managerial Efficiency Ratios	Results on	Banks	
		ICICI	Axis Bank
NII/TF	Jarque-Bera	0.775685056	0.749932
	Probability	0.678519183	0.687313
OE/TF	Jarque-Bera	11.9828652	1.575438301
	Probability	0.00250008	0.454881128
NP/TF	Jarque-Bera	0.997607152	1.527691786
	Probability	0.607256762	0.465871286
NI/CE	Jarque-Bera	1.476463	1.68167
	Probability	0.477959	0.43135

Source: Author's Calculation

<sup>10</sup>Though women-led period performed better in some ratios than that of the men-led one, it is to be considered that the men leaders had to face tremendous financial pressure world-wide recession during 2007-2008 to 2008-2009. But as they could get support from the outcome of their former leaders, they could have somehow tackled the situation. On the other side, the women got the leadership in banking sector very recently and for this they have to invest their time for induction period. Here, only managerial efficiency of the two private banks owned by women have been considered. The other macroeconomic issues have not been applied.

### Result on t Test Statistic

- The results of t Test statistic (two-tail) on Managerial Efficiency Ratios of ICICI and Axis Bank (2003-2004 to 2015-2016) reflects that for the first two ratios (NII/TF and OE/TF), null hypotheses ( $H_{01}$ ) was rejected which could infer the fact that there was significant difference in the performance of managerial efficiency of two banks in maintaining net interest income and consuming operating expenditures to get the specific level of total fund (Table -5A).

**Table 5A: Table showing Result of t Test on Managerial Efficiency Ratios of ICICI and Axis Bank (2003-2004 to 2015-2016) –  $H_{01} (\mu_1 \neq \mu_2)$**

Managerial Efficiency Ratios	Results (t Test)	Comment	P Value (for both tail)>2.056 at 5% level* of significance and >2.779** for 26 d.f.
NII/TF	-2.09095527	Ho rejected*	
OE/TF	-3.54879	Ho rejected**	
NP/TF	-0.113697877	Ho accepted	
NI/CE	-0.88743	Hoaccepted	

Source: Authors' Calculation

- In ICICI, for NII/TF and NP/TF, null hypotheses ( $H_{02}$ ) was rejected which could infer the fact that there was significant difference in managerial efficiency of women-led period and men-led period. Here, as the t test results reflect positive value, we can conclude that women performed better than their men counter-part in maintaining net interest income and net profit to get the specific level of total fund. In Axis Bank, null hypotheses ( $H_{02}$ ) have been rejected for all the four ratios and except OE/TF, in all the three ratios, women performed better than men with positive t test value. This fact could indicate that women-led period performed better than men-led one in maintaining net interest income and net profit for the specific level of total fund and also in maintaining net profit at specific level of capital employed. In OE/TF, men-led period performed better than the women-led period which indicated the fact that the women leaders of Axis Bank were less capable to manage the operating expenditure to avail specific level of total fund. In this context, it should be reported that OE/TF had negative impact on the efficiency i.e. more the expenditure less will be the efficiency and lower will be the rank for the bank. Here, though OE/TF contained positive sign, it could be inferred that women performed lesser efficiently than the men counter parts (Table-5B).

**Table 5B: Table showing Result of t Test on Managerial Efficiency Ratios of ICICI and Axis Bank for Men-led and Women-led Periods –  $H_{02} (\mu_1 > \mu_2)$**

Managerial Efficiency Ratios	ICICI		Axis		
	Results (t Test)	Comment	Results (t Test)	Comment	
NII/TF	4.969936622	Ho rejected**W>M	9.396596021	Ho rejected** W>M	*P Value (for one tail)>1.771 at 5% level of significance and **P Value (for one tail) >2.650 at 1% level of significance for 12d.f. W=Women, M=Men
OE/TF	1.317019	Ho accepted	4.648986	Ho rejected**M>W	
NP/TF	3.511887942	Ho rejected**W>M	8.329301023	Ho rejected**W>M	
NI/CE	1.658631	Ho accepted	4.451794	Ho rejected**W>M	

Source: Authors' Calculation

Hypothesis testing in the next stage i.e. testing to detect whether women-led period of one Bank is better than that of the other, has been continued on only two ratios NII/TF and NP/TF as in these two ratios, women-led period performed better than the men-led period in both the banks. As per the result, H<sub>03</sub> has been rejected only for NII/TF and it can be detected from the result of t test statistic that Axis Bank performed better than ICICI i.e. Axis Bank could maintain NII/TF more efficiently than that of ICICI (Table-5C).

**Table 5 C: Table showing Result of t Test on Managerial Efficiency Ratios of Women-led period of ICICI and Axis Bank –  $H_{03} (\mu_1 > \mu_2)$**

Managerial Efficiency Ratios	BANK		*P Value (for one tail) > 1.771 at 5% level of significance **P Value (for one tail) > 2.650 at 1% level of significance for 12 d.f. I=ICICI II=Axis
	Results (t Test)	Comment	
NII/TF	-2.537698715	Ho rejected**I>II	
NP/TF	-0.951187282	Ho accepted	

Source: Authors' Calculation

## Conclusion

The participation of women in financial institution leads India to a revolutionary movement towards socio-economic sustainability. Though women have claimed their position in traditional professions from long back but their participation in the most volatile, competitive and risky profession like financial institution is an exception. Few women in this context have broken the tradition and taken the position as corporate heads. The statistical incidents have proved the significance of women-led banks in India with huge participation in advances and deposits. Women-led private sector banks specially ICICI and Axis Bank in this context have claimed special attention. In managerial efficiency as measured through varied financial ratios, Axis Bank has been detected as having better position than ICICI in some ratios (NII/TF, NP/TF, NI/CE). In this context, women leadership has been recognised as the main motivator in promoting efficient managerial performance in all the cases except operating expenses related issue where men leadership has been recognised as the better performer with better results in average and consistency. This event may deduce the importance of women leadership in managerial efficiency. Therefore, more attention should be given to proper management of operating expenditure in relation to total fund in support of scientific technology and skill. This would ultimately motivate the women-leadership towards more efficient managerial performance and sustainable growth prospect.

## Scope for Future Research

The paper offers scope for future research in different dimensions-

- (i) Financial performance measurement of women-owned banks in respect of profitability, liquidity etc.
- (ii) Comparative assessment of the financial performance of public and private sector banks owned by women.
- (iii) Comparative assessment of the financial performance of men-owned and women-owned banks.

## Limitations

Involvement of women in banking sector has its recent origin (about 8 years, from April, 2009). Therefore, the analysis of the study has to be limited to 7 years (from 2009-2010) for women-led period and in contrary 7 years for men-led period (upto 2008-2009) i.e. for 14 years in total.

## References

- Adebayo, O., David. A.O., & Samuel, O.O. (2011). Liquidity Management and Commercial Banks Profitability in Nijeria. *Research Journal of Finance and Accounting*, 2, 24-38.
- Kim, T.K. (2015). T test as a parametric statistic, *Korean Journal of Anesthesiology*, 68(6), 540-546.
- Chahal, N. (2013). Women Entrepreneurship: Banking Industry, *International Journal of Marketing, Financial Services & Management Research*, 2 (3), 190-197.
- Chandani, A. & Mehta, M. (2013). Woman leadership in Axis bank: a comparison of woman and man leader using CAMEL model, *International Journal of Research in Commerce, IT and Management*, 3 (2), 83-89.
- Chandani, A., Mehta, M., & Neeraja, B. (2014). Women Ceos And Financial Performance Of Banks: An Empirical Research Of Indian Private Sector Banks, *Management: Journal of Contemporary Management Issues*, 19, 231-246.
- Chaudhury, G. (2014). Performance Comparison of Private Sector Banks with the Public Sector Banks in India. *International Journal of Emerging Research in Management and Technology*, 3, 5-12
- Das. B.C., Chowdhury, M.M., Rahman. M.H., & Dey. N.K. (2015). Liquidity Management and Profitability Analysis of Private Commercial Banks in Bangladesh. *International Journal of Economics, Commerce and Management*, 3(1), 4-34
- Goel.C., & Rekhi, C.B. (2013). A Comparative Study on the Performance of Selected Public and Private Sector Banks in India. *Journal of Business Management and Social Science Research*, 2, 46-56
- Govil. M., & Tripathi, M. (2014). Financial Performance of Top Ranking Indian Banks in the Post Crisis Period. *Prestige e-Journal of Management and Research*, 1(1). Retrieved from <http://www.pimrindore.ac.in/vol-1,issue-1/3.pdf>
- Gollapudi, D.R. (2014). Women in Indian Banking Industry – Their Role in Growth of the Sector, *Global Journal For Research Analysis*, 3, 1-4.
- Gulati, R. (2011). *Evaluation of technical, pure technical and scale efficiencies of Indian banks: An Analysis from cross sectional perspective*. Paper presented at the 13th Annual Conference on Money and Finance in the Indian Economy, Mumbai, India. Retrieved from <http://www.igidr.ac.in/conf/>
- Hussain, S. (2014). The Assessment of Operational Efficiency of Commercial Banks in India using Cost to Income Ratio Approach. *International Journal Management Business*, 4(3), 225-234.
- James, K. (2013). What are the types of financial ratios used to analyse financial performance? *African Journal of Business Management*, 5(35), 235-269.
- Kaur, J. (2011). Performance Review of Commercial Banks in India with special reference to priority sector lending- A study of Post Reforms Era. *International Journal of Multidisciplinary Research*. 1 , 47-61.
- Karim, R.A., & Alam, T. (2013). An Evaluation of Financial Performance of Private Commercial Banks in Bangladesh: Ratio Analysis. *Journal of Business Studies Quarterly*, 5(2), 65-77

- Karimzadeh, M.(2012). Efficiency Analysis by using Data Envelopment Analysis Model: Evidence from Indian Banks. *International Journal of Latest Trends in Finance and Economic Sciences*, 2 , 228-237.
- Madhura, J. (2014). *Financial Markets and Institutions*.(7th Edition), Ohio: Thomson Learning.
- Mishra, A. K., Harsha, G.S., Anand, S.,&Dhruva, N.R. (2012). Analysing soundness in Indian Banking: A CAMEL Approach. *Research Journal of Management Sciences*,1, 9-14.
- Nandkumar& Singh, A. (2014). A Study of Technical Efficiency of Banks in India using DEA,IOSR *Journal of Business and Management*, 16, 37-43.
- Pelria, N., Capraru,B., & Ihnatov. I.(2013). Determinants of Banks Profitability: Evidence from EU 27 Banking System. *Procedia Economics and Finance*, 20, 518-524.
- Riaz, S., & Mehar. A. (2013).The Impact of Bank Specific and Macroeconomic Indicators on the Profitability of Commercial Banks. *The Romanian Economic Journal*, XVI(47),91-110.
- Ramya, K.R., & Raghurama, A. (2014). Women Participation in Indian Banking Sector: Issues and Challenges. *International Journal of Science and Research*, 5, 1760- 1763.
- Strelcova, J. (2004). *Does Gender Matter? A Comparative Study of Performance of American CEOs*, (Glucksman Fellowship Program Student Research Reports, Stern School of Business, New York University). Retrieved from [http://www.stern.nyu.edu/cons/groups/content/documents/web\\_asset/uat\\_024329.pdf](http://www.stern.nyu.edu/cons/groups/content/documents/web_asset/uat_024329.pdf)
- Satheye, M. (2005).Privatization, Performance and Efficiency: A study of Indian banks.*Vikalpa*,30, 7-16.
- Sahoo, D., & Mishra, P. ( 2012). Structure, Conduct and Performanceof Indian Banking Sector, *Review of Economic Perspective*, 12(4), 235– 264.
- Sur, D., Maji, S.K., & Banerjee, D. (2013). Liquidity Management in PSUs in Post Reform Era: A Case Study of Bhel, *The Management*, 48(8), 941-946.
- Sur, D., Sil, K., & Das.I. (2014). Liquidity Trends in Selected FMCG Companies in India during the Post-Liberalisation Era: A Cross Sectional Analysis. *Business Perspective*, 48 (1), 9-21.
- SBI to monetize Non-core Assets, Unlisted Entities (2016, January, 13), *The Economic Times*, p 13.
- Tihaverunavukkarasu, T., & Nachimthu, D. ( 2015). A comparative analysis of selected Public and Private Sector Bank. *International Journal in Management and Social Science*, 3(1), 296-307

### **Authors' Profile**

**Manidipa Dasgupta** (M.Com., M.Phil, Ph.D., M.BA.) is serving the Department of Commerce of the University of Burdwan, Bardhaman, West Bengal, India as an Assistant Professor for more than 3 years. She did her M.Com. (University Rank holder), M.Phil and Ph.D. (Full Time Research Fellow) degree from the University of Calcutta and MBA degree in finance from IGNOU. She takes her interest in Banking, Entrepreneurship Development, Microfinance and Women Empowerment. She has published research articles in several National and International Journals and has also presented her research papers in many National and International Seminars and Conferences wherein she has received 'best paper award' with appreciation. At present, she is engaged in supervising four research scholars and conducting a Minor University Research Project.

**Seeuly Nath** is a Research Scholar (Part-Time) at University of Burdwan, Bardhaman, West Bengal, India. She received the B.Com. (Hons) degree from University of Calcutta in 2002 and M.Com in Accountancy from University of Calcutta in 2004. She has rich corporate career spanning over 6 years in the domain of accounts and taxation. Her passion for academics pulled her into education industry in 2011.

