Major Research Project

Influence of Digital Financial Services on Financial Performance of Private Sector and Public Sector Commercial Banks in India

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CERTIFICATE

This is to certify that **Richa Chaudhary (2K21/DMBA/04)** has submitted the project titled **"Influence of Digital Financial Services on Financial Performance of Private Sector and Public Sector Commercial Banks in India"** in partial fulfillment of the requirements for the award of the degree of Master of Business Administration (MBA) from Delhi School of Management, Delhi Technological University, New Delhi during the academic year 2022-23.

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DECLARATION

I, Richa Chaudhary, student of Delhi School of Management, Delhi Technological University hereby declare that the Major Research Project on **"Influence of Digital Financial Services on Financial Performance of Private Sector and Public Sector Commercial Banks in India"** submitted in partial fulfillment of the requirements for the award of the degree of Master of Business Administration (MBA) is the original work conducted by me. I also confirm that neither I nor any other person has submitted this project to any other institution or university for any other degree or diploma. I further declare that the information collected from various sources has been duly acknowledged in this project.

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ACKNOWLEDGEMENT

I would sincerely like to express my gratitude to my mentor Dr. PK Suri for his continuous guidance, feedback and support throughout my major research project. His unwavering enthusiasm and support kept me constantly engaged with my project work and has resulted into completion of it.

I would also like to express my deepest thanks and sincere appreciation to Dr. Shikha N Khera, Dr. Meha Joshi and Mr. Dhiraj Kumar Pal for their academic direction and sharing the genuine concerns for the completion of the report. I am very thankful to our Head of Department Dr.Archana Singh, Delhi School of Management, Delhi Technological University for her guidance and encouragement for my research project.

Further, I would like to gratefully acknowledge Delhi School of Management, Delhi Technological University (DTU) for including Major Research Project as a partial requirement of MBA program, providing all students with the opportunity to enhance their knowledge and competence. I would also like to thank the entire family of Delhi School of Management (DSM) for their support and cooperation throughout this venture

Lastly, I take this opportunity to express my appreciation to all my friends, teachers, and classmates for their support, cooperation and motivation throughout this venture, without which the completion of my project would have been incomplete.

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EXECUTIVE SUMMARY

In this study, influence of digital financial services on financial performance of private sector and public sector commercial banks in India has been studied. Payments, credit, savings, remittances, and insurance are some of the financial services that can be accessed and delivered through digital platforms. The term "digital channels" refers to the internet, mobile devices, ATM, POS systems, digital payments, and so on. Banks' financial performance was measured using ROA and Return on Equity.

The secondary data was employed in the study. The data of independent variables (ATM, POS, Mobile Banking, NEFT and RTGS) were collected from the Central Bank of India i.e. Reserve Bank of India from the year 2018 to 2022. The data for dependent variables (ROA and ROE), were collected from Money Control. A sample of 22 commercial banks was taken from the indices Nifty PSU Bank and Nifty Private Bank of NSE. Out of these 22 banks, an analysis of 17 banks was performed .Two private sector commercial bank (Bandhan Bank Ltd and City Union Bank) out of 10 from Nifty Private Bank indices and three public sector commercial banks (Indian Overseas Bank, Punjab and Sind Bank and UCO bank) out of 12 from Nifty PSU Bank indices were removed because there was no consolidated data of ROA and ROE ratios. There was two year consolidated ratios of UCO but the study aimed to collect five year data thus, the bank was removed. The analysis of data was done using SPSS.

The study aims to analyze the relationships between the independent variables and the dependent variables. The study shows that there is significant influence of RTGS transactions volume on ROA and ROE of private sector commercial banks in India. Similarly, there is impact of Mobile Banking transactions volume on ROA of public sector commercial banks in India. Whereas there is no significant influence of Mobile Banking, NEFT and RTGS transactions volume, and numbers of POS and ATMs deployed on ROE of public sector commercial banks in India.

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LIST OF ABBREVIATIONS

RTGS	Real Time Gross Settlement
NEFT	National Electronic Funds Transfer
ATM	Automated Teller Machines
POS	Point of Sale
SPSS	Statistical Package for Social Sciences
NSE	National Stock Exchange
DFS	Digital Financial Services
RBI	Reserve Bank of India

CHAPTER 1
INTRODUCTION

1.1 Background

Every firm must be successful and efficient while providing clients with services that are profitable. As a result, the introduction and usage of information and communication technologies (ICT) have had significant effects on the world financial system. According to Scott, Reenen, and Zachariadis (2017) [1] . ICT has changed more than just the transactional procedures for providing banking services. It has also facilitated the creation of new financial products, altered work nature, globalized financial markets, and changed the nature of financial intermediation.

The 1960s saw a dramatic change in both retail and corporate banking as consumer rights came into being and technology advanced quickly. Most of these processes are now completed electronically or through the bank's official website using sophisticated algorithms as a result of the customers' prevailing influence, which is also known as digitalization or the development of digital financial services, which have led to new customer preferences that banks meet.

The growing connections of banking industries to infrastructure of information technology has made banking processes , facilities and profitmaking activities more convenient, efficient and effective for both individuals and businesses. DFS is referred as the financial services which are offered and accessed through digital medium, such as credit, payments, savings, insurance and remittances. Internet, mobile devices, ATM and point of sale systems are the digital channels.

DFS has facilitated in the advancement of the banking sector. DFS decisions must be based on a thorough consideration of the risks and expenses related to preventing harm to banks' performance. The efficiency and effectiveness of DFS as well as the stringent control and measures of standards for prevention of losses linked with the frauds of internet banking have assisted banks strongly in their success.

The banking sector , one of the early adopters of IT-based financial services applications, relies on DFS to restructure its service delivery .The banking sector has been using several DFS since the introduction of the first ATM which was introduced in the late 1960s. There are many studies that has analyzed the influence of DFS on the financial performances of the firms using both quantitative and qualitative methodologies.

The purpose of this study is to explore, comprehend, analyze and conclude the impact of DFS on performance of commercial banks with the five year data (2018-2022). The study accumulates the previous literature, the conceptual framework has been developed based on the theory.

1.2 Problem Statement

The previous research has covered the impact of digital financial services on the financial performance of commercial banks. This research covers to study the influence of digital financial services on financial performance of private sector and public sector commercial banks in India and presented the findings of both sector commercial banks.

1.3 Objective of the Study

- To examine the impact of number of ATM deployed by private sector and public sector commercial banks in India on their financial performance i.e. on ROA and ROE in India.
- To analyze the influence of number of POS deployed by private sector and public sector commercial banks in India on their ROA and ROE in India.
- To investigate the impact of mobile banking transaction volume on the ROA and ROE of private sector and public sector commercial banks in India
- To determine the influence of NEFT transaction volume on ROA and ROE of private sector and public sector commercial banks in India.
- To examine the influence of volume of RTGS transaction on the financial performance (ROA and ROE) of private sector and public sector commercial banks in India.

1.4 Research Hypotheses

The hypotheses are formulated to address the problem of the study. The following hypothesis have been formulated to study the impact of Digital Financial Services on Financial Performance of Private Sector Commercial banks in India.

- H1: There is a significant influence of numbers of ATM deployed by private sector commercial banks in India on their ROA.
- H2: There is a significant influence of numbers of POS deployed by private sector commercial banks in India on their ROA.

  H3: There is a significant influence of Mobile banking transactions volume on ROA of private sector commercial banks in India.
- H4: There is a significant influence of NEFT transactions volume on ROA of private sector commercial banks in India.
- H5: There is a significant influence of RTGS transactions volume on ROA of private sector commercial banks in India.
- H6: There is a significant influence of numbers of ATM deployed by private sector commercial banks in India on their ROE.
- H7: There is a significant influence of numbers of POS deployed by private sector commercial banks in India on their ROE.
- H8: There is a significant influence of Mobile banking transactions volume on ROE of private sector commercial banks in India.
- H9: There is a significant influence of NEFT transactions volume on ROE of private sector commercial banks in India.
- H10: There is a significant influence of RTGS transactions volume on ROE of private sector commercial banks in India.

The following hypothesis have been formulated to study the influence of Digital Financial Services on Financial Performance of Public Sector Commercial banks in India.

- H11: There is a significant influence of numbers of ATM deployed by public sector commercial banks in India on their ROA.
- H12: There is a significant influence of numbers of POS deployed by public sector commercial banks in India on their ROA.

  H13: There is a significant influence of Mobile banking transactions volume on ROA of public sector commercial banks in India.

- H14: There is a significant influence of NEFT transactions volume on ROA of public sector commercial banks in India.
- H15: There is a significant influence of RTGS transactions volume on ROA of public sector commercial banks in India.
- H16: There is a significant influence of numbers of ATM deployed by public sector commercial banks in India on their ROE.
- H17: There is a significant influence of numbers of POS deployed by public sector commercial banks in India their ROE.
- H18: There is a significant influence of Mobile banking transactions volume on ROE of public sector commercial banks in India.
- H19: There is a significant influence of NEFT transactions volume on ROE of public sector commercial banks in India.
- H20: There is a significant influence of RTGS transactions volume on ROE of public sector commercial banks in India.

1.5 Scope of the Study

The present study aims to study influence of digital financial services on financial performance of private sector and public sector commercial banks in India. The target population of the study is the listed private and public sector commercial banks in India in NSE.

1.6 Defining Key Terms

Commercial bank: It is a financial institution that provides various banking services to businesses and individuals. These services which are provided are accepting deposits, providing loans, issuing credit cards, facilitating wire transfers. Additionally, offering other financial products and services including accounts such as saving accounts and checking accounts, and certificates of deposit).

POS: The term "point of sale," or "POS," refers to a device that retail consumers use to execute transactions. The transaction of POS can occur in offline or online medium and the receipts can be printed out or created electronically. It is used to process transactions, including the

scanning of product barcodes, calculating the total cost of the sale, accepting various forms of payment (e.g., cash, credit/debit cards, mobile payments), and generating receipts.

RTGS: It is regulated by RBI. The transactions are completed on real time basis and completed when they are made. "Real Time" means that instructions are processed as soon as they are received; "Gross Settlement" means that each money transfer order is settled separately.

NEFT: A mechanism for electronic fund transfers called NEFT was established and is operated by the Reserve Bank of India. Online money transfers between NEFT-enabled bank accounts are made possible by NEFT.

The features of NEFT are:

- It is one-to-one payment facility
- Only banks that provide NEFT-enabled services can conduct NEFT transfers.
- The transactions made through NEFT takes few hours or days to complete
- There are no restrictions on the volume of NEFT transactions

ROA: The financial ratio that measures a company's profitability by calculating the amount of net income it generates relative to its total assets is ROA. This ratio shows how the company is able to generate its profits efficiently using the assets. The ROA is obtained as:

$$\text{Return on Assets} = \frac{\text{Net Income}}{\text{Total Assets}}$$

ROE: The Company's profitability measured using the financial ratio which is obtained by dividing Net income to the owners' Equity is the ROE. The calculation of ROE is as:

$$\text{Return on Equity} = \frac{\text{Net Income}}{\text{Average Shareholders' Equity}}$$

CHAPTER 2
LITERATURE REVIEW

2.1 Introduction

An analysis of existing literature review is necessary for every academic study. A strong review establishes the groundwork for cutting-edge research. It makes it easier to generate new theories and identifies the regions that require further study. The objective for conducting the literature review is to get acquaintance with the theoretical and conceptual knowledge of the domain of the present study. The conceptual framework of the study is framed on the basis of general theoretical, conceptual, and pragmatic inputs learned from the review of literature.

2.1.1 Digital Financial Services:

DFS, or Digital Financial Services, has become a popular term in the financial market and its rapid development is an emerging issue in the world of finance, as noted by Casanova, Cornelius, & Dutta (2018) [2], Gai (2018) [3], and Gimpel, Rau, & Röglinger (2017)[4] .

DFS primarily supports the activities of financial technology (FinTech), which combines finance and technology, according to Zavolokina, Dolata, & Schwabe (2016) [5].DFS goes beyond traditional financial systems and is reflected in the emerging issue of FinTech, which refers to products delivered via technology or innovative financial services and is considered one of the fastest growing innovations in the technology industry and financial markets, as noted by Long (2016) [6].

The various range of financial services such as payment through third party, online banking, insurance, crowdfunding etc are included in DFS as discussed by Claessens, Glaessner, & Klingebiel (2002)[7] , Hill & Hill (2018) [8] and Salampasis & Mention (2018)[9] .

DFS was categorized as digital financing, investments, payments, insurance and financial advising in framework “The Digital Finance Cube and its Dimensions” by Gomber, Koch, and Siering (2017) [10].

According to Ozili (2018) [11] , DFSs, or Digital Financial Services, can be broadly defined as the products, services, technology, and infrastructure that enable individuals and companies to access payments, savings, and credit facilities online without needing to visit a bank branch or directly deal with financial service providers. The standardized definition of digital finance is not yet defined still, there is some agreement that it includes all the tools and resources that facilitate financial transactions and services through digital channels.

2.1.2 Financial Performance

Pai, Vadivel, and Kamala (1995) [12] studied the financial performance of diversified companies. The aim of the study was to find the link between the diversified companies and their performance financially. For this, a sample of seven large firms was selected. The products of these firms were different and their operations were also in diverse industries. To determine the financial performance and differences in the performance of one firm compared to another, the measures of performance or ratios was employed. Thus, revealing that these firms have healthy financial performances.

Samuel & Vanniarajan (2007) [13] conducted a study on the financial performance of banks, utilizing Du-Pont analysis. Their findings suggested that liberalization has facilitated a new economic environment for Indian banks, resulting in increased competition and novel regulatory requirements. They emphasized the importance of both Indian and foreign banks to explore development opportunities in India by releasing new products for a variety of customer segments, many of which were not traditionally considered as customers in the banking sector. The researchers advised all banks to evaluate their efficiency and compare it to that of other institutions. Finally, they demonstrated how the banks' performance can be viewed in terms of three dimensions: structural, operational, and efficiency, as suggested by the Indian Bank Association.

A common form of financial statement is Du Pont analysis. Profit margin and asset turnover are the two multiplicative components that this analysis breaks down the return on net operating assets into (B. McClure)[14].These two accounting ratios have various characteristics as they measure various constructs. According to earlier studies, future earnings changes are strongly correlated with changes in asset turnover (M. Soliman) [15].Three factors are included in the Du Pont analysis to gauge business profitability: ROE, ROI, and ROA.

A study was conducted on the financial performance of nationalized banks in India, using overall profitability indices to assess the growth index value of various parameters by Dangwal and Kapoor (2010) [16]. Their findings revealed that, of the nineteen banks examined, four performed exceptionally well, five did well, and six worked poorly. This implies that the performance of nationalized banks in India can vary significantly.

2.2 Theoretical Framework

Every research project or study has a theoretical review as the cornerstone or basis for its variables and hypotheses. This is done to determine whether or not the results support the theory that was chosen or not. The following theories have been used in this study:

Innovation Diffusion Theory, which focuses on the foundation of novel financial innovation by working on the improvement of banking services provided through traditional means, is the theoretical basis for this study. The study is taking this theory into account, as a result it will reduce transaction costs for the banking system, in particular with respect to DFS, which would have an impact on all undertakings' overall performance.

A theoretical underpinning for this study also comes from the technology acceptance model, which claims to link people's behavior with use of information and communication technology; such as electronic financial services provided by banks. This paradigm takes into account how individuals adapt and make use of technological advancements.

2.3 Conceptual Framework of the Study

Based on theoretical review of study, work performed, a conceptual framework has been developed by the researcher, and the framework presents the detailed elements of conceptual framework leading the present study.

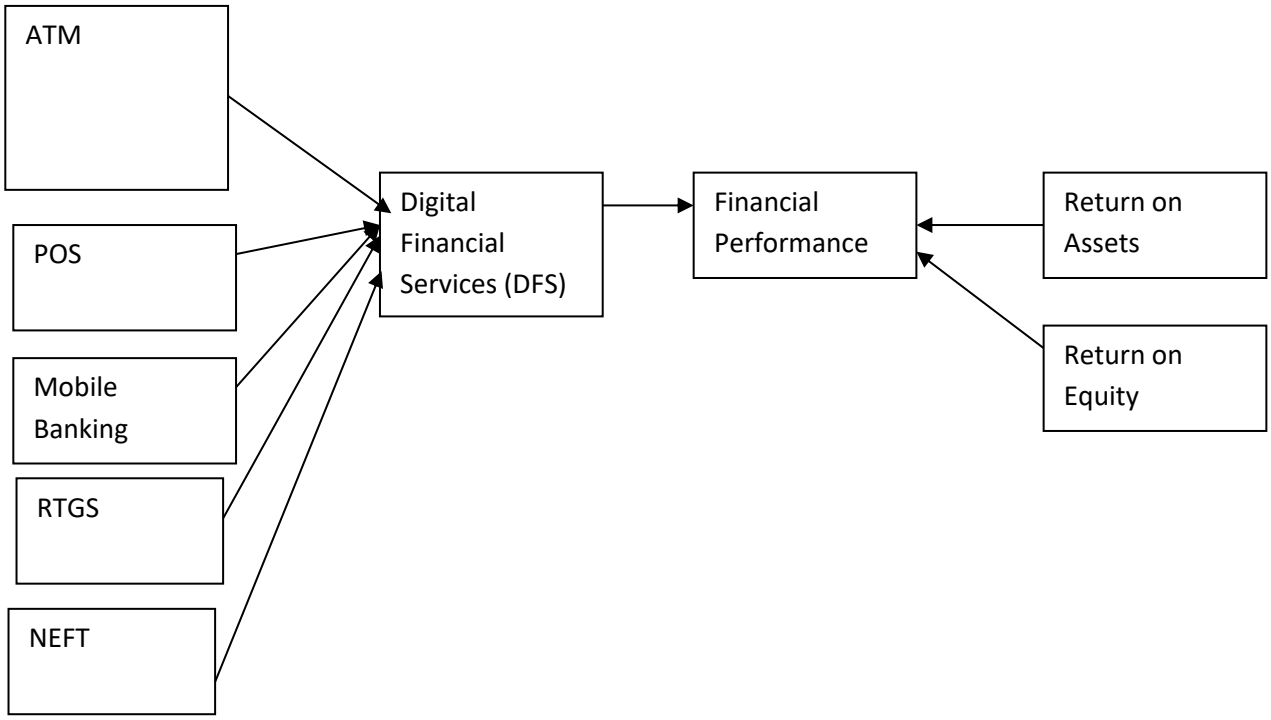

Figure 2.1: Conceptual Framework

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Introduction

The key goal of this section is to solve the research problem by conceptualizing the framework for managing the data collection methods. Research methodology refers to the various sequential steps to be adopted by researcher in studying a problem with research objectives (Kothari, 2007) [17] .Thus, it is the required methods and process for the proposed study. The present researcher has dealt with the method of data collection and analysis of data. This part includes explanation about the method of research employed to conduct the study. Further, design of research, sources of information, development of data collection tools, mechanism for research administration and mechanism for result analysis.

In order to find the result, researcher has used quantitative method. The present researcher has used conclusive research designed so that she can use various statistical as well as financial tools to explore and show the digital financial services' impact on the financial performance of private and public sector commercial banks.

3.2 Research Method

Quantitative research involves collection and analysis of numerical data. So, dependent and independent variable can be constructed to find the relationship between them by using regression analysis.

Process of Data Analysis

The present researcher has used statistical tool to analyze the influence of digital financial services on the financial performances of private and public sector commercial banks. Followings are the details of applied method.

a. **Regression analysis:** The technique of statistics which shows relationship between two or additional variables is regression analysis**.**

   i. **Simple linear regression:** Simple regression involves modeling the relationship between a response variable and one explanatory variable. In this regression, a single regressor 'x' has a relationship with a response 'y'. The equation of regression is expressed as:

$$y = \beta 0 + \beta 1x + \varepsilon$$

Where,

β0 = intercept

β1 = unknown slope constants

ε = an error

ii. **Multiple linear regression:** It is defined as a statistical method that uses two or more than two predictor variables to predict the outcome variable. The equation is :

$$y = \beta 0 + \beta 1x1 + \beta 2x2 + \ldots + \beta kxk + \varepsilon$$

b. Correlation Analysis

Regression and correlation are two distinct but not exclusive methods. Regression is used to make predictions and does not extend beyond the data used in the study, whereas correlation is used to examine the strength of a relationship. In other cases, the independent 'x' variable is a random covariate to the dependent 'y' variable rather than being fixed or readily selected by the researcher (Asuero et al., 2006) [18] .This coefficient is typically applied to quantitative variables, such as interval or ratio scale variables. The denotation for coefficient of correlation is ‘r’ and is stated by:

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{\{n\sum x^2 - (\sum x)^2\}\{n\sum y^2 - (\sum y)^2\}}}$$

The value of 'r' is always between -1 and 1, inclusive, therefore -1 r 1. If one variable increases when the other variable increases, there is a positive or direct correlation between the two variables. A negative or inverse correlation occurs between two variables if one variable falls while the other increases.

3.2.1 Correlation Table

Size of Correlation	Interpretation
1	Perfect Positive/ Negative Correlation
± .90 to ± .99	Very High Positive/Negative Correlation
± .70 to ± .90	High Positive/Negative Correlation
± .50 to ± .70	Moderate Positive/Negative Correlation
± .30 to ± .50	Low Positive/Negative Correlation
± .10 to ± .30	Very low Positive/Negative Correlation
± .0 to ± .10	Markedly Low and Negligible Positive/Negative Correlation

Table 3. 1: Cut off of Correlation Coefficient

(Source: Pearson Correlation Analysis using SPSS- https://researchwithfawad.com/index.php/lp-courses/data-analysis-using-spss/pearson-correlation-analysis-using-spss/)

3.3 Research Design

The designing of research is essential part of the research since it helps to show the blue print of the overall report. The present researcher has used descriptive research design. Descriptive research is a scientific method of observation and description of phenomena without manipulation or control. Identifying the characteristics, behavior and attitudes of an individual population or phenomenon is a key objective in descriptive research.

This research design is appropriate because the study planned to establish the relationship between digital financial services and the financial performances of private and public sector commercial banks listed on NSE. Data has been collected from financial ratios published on money control site and the site of RBI. The study period of interest was of five year period i.e. from 2018 to 2022.

3.4 Sources of Information

According to Malhotra (2008) [19], researchers need to consider the sources on which to base and confirm their research and findings. Triangulation is the use of primary and secondary data. The selection on any data can be also made for the study.

Primary data sources refer to information that is collected firsthand by the examiner for a particular research motive. This can include surveys, experiments, observations, and focus groups, as well as documents such as letters, memos, and government data including census, economic and labor data (Cooper and Schindler, 2003) [20].

On the other hand, secondary data sources refer to information that the collection of data has been already performed by someone else for a different purpose. This can include sources such as encyclopedias, textbooks, handbooks, newspaper articles, journals, and annual reports. Secondary data can be useful for providing background information, contextualizing primary data, or conducting secondary data analyses.

Thus, present researcher has executed the secondary data collection. The researcher has used several secondary sources for collecting the data which are mentioned below:

- Official website of Money Control
- Official website of Reserve Bank of India

The researcher has collected the data of digital financial services and financial performance of private commercial banks by visiting website of Reserve Bank of India and Money Control respectively. The data is a five year data from the year 2018 to 2022.

3.5 Population of the Study

According to Mugenda & Mugenda (2003) [21], a population is a complete set of individuals, cases, or things that share some observable features. In this study, the population of interest was all the private sector and public sector commercial banks in India. There are 21 private sector commercial banks and 12 public sector commercial banks in India. In this study, the listed banks were preferred because of the availability of their data.

3.6 Sample

The sample for the study includes 22 public sector and private sector commercial banks. These are the listed banks in NSE. Out of these 22, 17 banks which have the consolidated financial ratios were studied.

Private Sector Commercial Banks

The following is the list of Private Sector Commercial Banks which are listed in NSE. The two banks were removed because the consolidated ratios were not available in website of money control. The banks which were removed are: Bandhan Bank and City Union Bank

S.N	Private Sector Commercial Banks
1	AXIS BANK LTD
2	BANDHAN BANK
3	City Union Bank
4	Federal Bank
5	HDFC BANK LTD
6	ICIC Bank Ltd
7	IDFC Bank
8	INDUSIND BANK LTD
9	KOTAK MAHINDRA BANK LTD
10	RBL

Table 3. 2: Private Sector Commercial Banks

(Source: List obtained from website of NSE - https://www.nseindia.com/market-data/live-equity-market)

The following is the list of Public Sector Commercial Banks which are listed in NSE. The three banks were removed because the consolidated ratios were not available in website of money control. The banks which were removed are: Indian Overseas Bank, Punjab and Sind Bank and UCO bank.

Public Sector Commercial Banks

S.N	Public Sector Commercial Banks
1	Bank of Baroda
2	Bank of India
3	Bank of Maharashtra
4	Canara Bank
5	Central Bank of India
6	Indian Bank
7	Indian Overseas Bank
8	Punjab and Sind Bank
9	Punjab National Bank
10	State Bank of India
11	UCO Bank
12	Union Bank of India

Table 3. 3: Public Sector Commercial Banks

(Source: List obtained from website of NSE -https://www.nseindia.com/market-data/live-equity-market)

3.7 Development of Data Collection Tools

In a typical semi-standardized interview or semi-structured interview, as explained by Cook (2008) [22], the researcher has more control over the direction of the conversation and the subject matter discussed than in a non-directive data collection approach; however, the informants are still not limited in elaborating or changing the course of the interview into other related areas. For the purpose of this study, the present researcher has used secondary data obtained from the website of money control and the official website of Reserve Bank of India.

3.8 Mechanism for Research Administration

The present researcher has herself collected the secondary data from official website of Reserve Bank of India and Money control. Keeping in sight the time and cost constraint, the sample size has been assumed to be enough to represent the section of proposed study.

3.9 Mechanism for Results Analysis

According to Aaker, Kumar, and Day (2001)[23], data analysis aids in the researcher's interpretation and analysis of the data, protecting them from making poor decisions that lead to the wrong conclusions. The analysis of the data collected was done using SPSS. Data were analyzed using quantitative approaches notably descriptive statistics, correlation and regression analysis. The main descriptive statistics; frequency, mean, median and standard deviation were used. Similarly, Model Summary and ANOVA test were used for the data analysis. Correlation analyses was done to determine the relationship between DFS and financial performance.

CHAPTER 4
DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter presents the data analysis of independent variables (the numbers of POS and ATM deployed and volume of transactions of Mobile banking, RTGS and NEFT), and the dependent variable (Return on Assets and Return on Equity) of private sector and public sector commercial banks in India. The five year data from March 2018 to March 2022 of 22 banks were taken and 17 banks which have consolidated ratios were analyzed.

4.2 Data Analysis and Discussion

This section deals with the influence of DFS on the financial performance of private sector and public sector commercial banks.

4.2.1 ROA of private sector and public sector commercial banks

Table 4. 1: Descriptive statistics of ROA, ATM, POS, Mobile Banking, NEFT and RTGS of private sector commercial banks

	Mean	Std. Deviation	N
ROA	0.92	0.83	40
ATM	0.17	1.05	40
POS	0.19	1.03	40
Mobile Banking	0.11	1.09	40
NEFT	0.19	1.03	40
RTGS	0.16	1.06	40

Source: Own Analysis - Built-in SPSS using data from Money Control and RBI

The above table shows descriptive statistics of 8 listed private sector commercial banks on NSE It shows that, the mean of ROA, ATM, POS, Mobile Banking, NEFT and RTGS are 0.92, 0.17, 0.19, 0.11, 0.19 and 0.16 respectively. Similarly, the standard deviation of ROA, ATM, POS, Mobile Banking, NEFT and RTGS are 0.83, 1.05, 1.03, 1.09, 1.03 and 1.06 respectively.

Table 4. 2: Correlation analysis of factors affecting ROA of private sector commercial banks

		ROA	ATM	POS	Mobile Banking	RTGS
Pearson Correlation	ROA	1	0.18	0.14	0.24	0.45
	ATM	0.18	1	0.69	0.61	0.78
	POS	0.14	0.69	1	0.63	0.68
	Mobile Banking	0.24	0.61	0.63	1	0.63
	RTGS	0.45	0.78	0.68	0.63	1
Sig. (1-tailed)	ROA	.	0.13	0.19	0.07	0.00
	ATM	0.13	.	0	0	0
	POS	0.19	0	.	0	0
	Mobile Banking	0.07	0	0	.	0
	RTGS	0.00	0	0	0	.
N	ROA	40	40	40	40	40
	ATM	40	40	40	40	40
	POS	40	40	40	40	40
	Mobile Banking	40	40	40	40	40
	RTGS	40	40	40	40	40

Source: Own Analysis - Built-in SPSS using data from Money Control and RBI

The above table explains the correlation factors affecting the financial performance (ROA) of private sector commercial banks. Here we can observe RTGS and ATM have highest influences, a high positive correlation with each other with 0.78 correlation score. There is moderate positive correlation between ATM and POS with correlation score of 0.69. A moderate positive correlation between POS and RTGS, and Mobile Banking and RTGS with correlation score of 0.68 and 0.63 respectively. Similarly, a moderate correlation can be traced between ATM and Mobile Banking with 0.61 correlation score. A very low positive correlation exists between ATM and ROA with correlation value of 0.18. The correlation between ROA and POS is very low with correlation value of 0.14.ROA and Mobile Banking have very low positive correlation with the correlation value of 0.24. There exists a low correlation between ROA and RTGS with the correlation value of 0.45.

Table 4. 3: Model Summary of private sector commercial banks for factors affecting ROA before checking and removing multicollinearity

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.61	0.371	0.28	0.71		

Source: Own Analysis - Built-in SPSS using data from Money Control and RBI

The above table shows for the model summary of regression analysis between ROA, RTGS, ATM, Mobile Banking POS and NEFT. The r square is 37.1%. This shows that 37.1% of total variability in ROA is explained by RTGS, Mobile Banking, POS, ATM and NEFT and remaining is explained by other factors not explained in the model.

Table 4. 4: Model Summary of private sector commercial banks for factors affecting ROA after checking and removing multicollinearity

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.548	0.30	0.22	0.736

Source: Own Analysis - Built-in SPSS using data from Money Control and RBI

The table 4.4 shows for the model summary of regression analysis between ROA, RTGS, ATM, Mobile Banking and POS. The r square is 30%. This shows that 30% of total variability in ROA is explained by RTGS, Mobile Banking, POS and ATM and remaining is explained by other factors.

Table 4. 5: ANOVA of private sector commercial banks for factors affecting ROA after checking and removing multicollinearity

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.124	4	2.031	3.749	.012
	Residual	18.962	35	0.542		
	Total	27.086	39			

Source: Own Analysis - Built-in SPSS using data from Money Control and RBI

The table above shows that the independent variables (Mobile Banking, POS, ATM and RTGS) significantly predict the dependent variable i.e. ROA F (4, 35) = 3.749, $p < 0$ .05. Thus, the model is a good fit

Table 4. 6: Regression coefficients of private sector commercial banks for factors affecting ROA after checking and removing multicollinearity

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	0.892	0.119		7.512	0		
	ATM	-0.294	0.194	-0.37	-1.514	0.139	0.334	2.99
	POS	-0.184	0.174	-0.227	-1.056	0.298	0.433	2.31
	Mobile Banking	0.051	0.15	0.066	0.338	0.737	0.519	1.928
	RTGS	0.673	0.194	0.854	3.467	0.001	0.33	3.032

Source: Own Analysis - Built-in SPSS using data from Money Control and RBI

The regression coefficients were used to show the nature of the relationship between Mobile Banking, ATM, POS and RTGS and ROA of private sector commercial banks. The study findings revealed that there is positive relationship between RTGS and ROA. The p value is 0.001. Similarly, the tolerance and VIF of collinearity statistics is greater than 0.1 and less than 10 respectively. Thus, a significant influence of RTGS on ROA. Whereas, the table results that there is negative relationship of independent variables such as ATM and POS with ROA.

Table 4. 7: Descriptive statistics of ROA, ATM, Mobile Banking, POS, NEFT and RTGS of public sector commercial banks

	Mean	Std. Deviation	N
ROA	-0.16	0.75	45
ATM	0.17	1.10	45
POS	0.14	1.12	45
Mobile Banking	0.12	1.12	45
NEFT	0.18	1.11	45
RTGS	0.22	1.07	45

Source: *Own Analysis - Built-in SPSS using data from Money Control and RBI*

The table 4.7 shows that the mean of the ROA, ATM, POS, Mobile Banking, NEFT and RTGS are -0.16, 0.17, 0.14, 0.12, 0.18 and 0.22 respectively. The standard deviation of ROA, ATM, POS, Mobile Banking, NEFT and RTGS are 0.75, 1.10, 1.12, 1.12, 1.11 and 1.07 respectively.

Table 4. 8: Correlation analysis of factor affecting ROA of public sector commercial banks

		ROA	ATM	POS	Mobile Banking	NEFT	RTGS
Pearson Correlation	ROA	1	0.263	0.266	0.388	0.329	0.35
	ATM	0.263	1	0.967	0.669	0.967	0.935
	POS	0.266	0.967	1	0.731	0.956	0.93
	Mobile Banking	0.388	0.669	0.731	1	0.811	0.835
	NEFT	0.329	0.967	0.956	0.811	1	0.982
	RTGS	0.35	0.935	0.93	0.835	0.982	1
Sig. (1-tailed)	ROA	.	0.04	0.039	0.004	0.014	0.009
	ATM	0.04	.	0	0	0	0
	POS	0.039	0	.	0	0	0
	Mobile Banking	0.004	0	0	.	0	0
	NEFT	0.014	0	0	0	.	0
	RTGS	0.009	0	0	0	0	.
N	ROA	45	45	45	45	45	45
	ATM	45	45	45	45	45	45
	POS	45	45	45	45	45	45
	Mobile Banking	45	45	45	45	45	45
	NEFT	45	45	45	45	45	45
	RTGS	45	45	45	45	45	45

Source: Own Analysis - Built-in SPSS using data from Money Control and RBI

The above table explains the correlation factors affecting the financial performance (ROA) of public sector commercial banks. Here we can observe NEFT and RTGS have highest influence, a very high positive correlation with each other with correlation score of 0.982. ATM and POS have very high positive correlation with 0.967 correlation score. A very high positive correlation exists between POS and NEFT, also POS and RTGS have very high positive correlation with correlation value of 0.956 and 0.93 respectively. There is low positive correlation between ROA and Mobile Banking, similarly with ROA and NEFT with

correlation value of 0.388 and 0.329 respectively. A low positive correlation exists between ROA and RTGS with correlation value of 0.35. There is a moderate correlation can be traced between ATM and Mobile Banking with 0.669 correlation score. A very low positive correlation exists between ATM and ROA with correlation value of 0.263. The correlation between ROA and POS is very low with correlation value of 0.266. There exists a high positive correlation between POS and Mobile Banking with the correlation value of 0.731.

Table 4. 9: Model Summary of public sector banks before removing multicollinearity for factors affecting ROA

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.411	0.169	0.063	0.727		

Source: Built-in SPSS using data from Money Control and RBI

The table 4.9 shows for the regression analysis between ROA, RTGS, ATM, Mobile Banking POS and NEFT. The r square is 16.9%. This shows that 16.9% of total variability in ROA is explained by RTGS, Mobile Banking, POS, ATM and NEFT and remaining is explained by other factors not included in the model.

Table 4. 10: Model Summary of public sector banks after checking and removing multicollinearity for factors affecting ROA

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.389	0.152	0.111	0.708		

Source: Built-in SPSS using data from Money Control and RBI

The multicollinearity was removed with the order of higher multicollinearity and the above table was obtained which explains that 15.2 % of total variability in ROA is explained by Mobile Banking and POS and remaining is explained by other factors.

Table 4. 11: ANOVA of public sector commercial banks after checking and removing multicollinearity for factors affecting ROA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.763	2	1.882	3.752	.032
	Residual	21.063	42	0.501		
	Total	24.826	44			

Source: Built-in SPSS using data from Money Control and RBI

After eliminating the highly correlated independent variables. The above model shows that the independent variables Mobile Banking and POS significantly predict the dependent variable i.e. ROA $F(2, 42) = 3.752$, $p < .005$. Thus, the model is a good fit.

Table 4. 12: Regression Coefficient of public sector commercial banks after checking and removing multicollinearity for factors affecting ROA

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-0.195	0.106		-1.827	0.075		
	POS	-0.026	0.139	-0.038	-0.184	0.855	0.466	2.147
	Mobile Banking	0.278	0.139	0.416	2	0.052	0.466	2.147

Source: Built-in SPSS using data from Money Control and RBI

The table 4.12 was used to show the nature of the relationship between number of Mobile Banking, POS and ROA of public sector commercial banks. The study findings revealed that there is a positive and significant relationship between Mobile Banking and ROA .The p value is 0.052 which is significant. Thus, Mobile Banking has influence on ROA. Similarly, Collinearity Statistics shows the exact and linear relation between dependent and independent variable with Tolerance > 0.1 and VIF < 10. Whereas, there is negative and insignificant relationship between POS and ROA as p value is greater than 0.05.

4.2.2 ROE of private sector and public sector commercial banks

Table 4. 13: Descriptive statistics of ROE, ATM, Mobile Banking, POS, NEFT and RTGS of private sector commercial banks

	Mean	**Std. Deviation**	**N**
ROE	8.20	7.04	40
ATM	0.17	1.05	40
POS	0.19	1.03	40
Mobile Banking	0.11	1.09	40
NEFT	0.19	1.03	40
RTGS	0.16	1.06	40

Source: Built-in SPSS using data from Money Control and RBI

The above table shows that, the mean of the ROE, ATM, POS, Mobile Banking, NEFT and RTGS are 8.20, 0.17, 0.19, 0.11, 0.19 and 0.16 respectively. The standard deviation are 7.04, 1.05, 1.03, 1.09, 1.03 and 1.06 of ROE, ATM, POS, Mobile Banking, NEFT and RTGS respectively.

Table 4. 14: Correlation analysis of factor affecting financial performance of private sector commercial banks

		ROE	ATM	POS	Mobile Banking	RTGS	NEFT
Pearson Correlation	ROE	1	0.267	0.224	0.243	0.456	0.429
	ATM	0.267	1	0.689	0.613	0.784	0.895
	POS	0.224	0.689	1	0.627	0.684	0.779
	Mobile Banking	0.243	0.613	0.627	1	0.631	0.702
	RTGS	0.456	0.784	0.684	0.631	1	0.963
	NEFT	0.429	0.895	0.779	0.702	0.963	1
Sig. (1-tailed)	ROE	.	0.048	0.082	0.065	0.002	0.003
	ATM	0.048	.	0	0	0	0
	POS	0.082	0	.	0	0	0
	Mobile Banking	0.065	0	0	.	0	0
	RTGS	0.002	0	0	0	.	0
	NEFT	0.003	0	0	0	0	.
N	ROE	40	40	40	40	40	40
	ATM	40	40	40	40	40	40
	POS	40	40	40	40	40	40
	Mobile Banking	40	40	40	40	40	40
	RTGS	40	40	40	40	40	40
	NEFT	40	40	40	40	40	40

Source: Built-in SPSS using data from Money Control and RBI

The table 4.14 explains the correlation factors affecting the financial performance (ROE) of private sector commercial banks. Here we can observe NEFT and RTGS have highest influence, a very high positive correlation with each other with correlation score of 0.963. ATM and POS have moderate positive correlation, with 0.689 correlation score, also POS and Mobile Banking have moderate positive correlation with the value off 0.627.ROE has a very low positive correlation with ATM, POS and Mobile Banking with correlation value of 0.267, 0.224 and0.243 respectively. A low positive correlation exists between ROE and RTGS and ROE and NEFT with correlation value of 0.456 and 0.429 respectively. There is moderate positive correlation between Mobile Banking and RTGS with correlation score of 0.631, similarly with ATM and Mobile Banking with 0.613 value. A high positive correlation is there between POS and NEFT and between Mobile Banking and NEFT with correlation score of 0.779 and 0.702 respectively. POS and RTGS has moderate correlation between each other with the value of 0.684. A moderate correlation is observed between ATM and RTGS with correlation value of 0.784.

Table 4. 15: Model Summary of private sector commercial banks before removing multicollinearity for factors affecting ROE

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.561	0.315	0.214	6.2382		

Source: Built-in SPSS using data from Money Control and RBI

The table 4.15 shows the model summary for the regression analysis between ROE, RTGS, ATM, Mobile Banking POS and NEFT. The r square is 31.5%. This shows that 31.5 % of total variability in ROE is explained by RTGS, Mobile Banking, POS, ATM and NEFT and remaining is explained by other factors not included in the model.

Table 4. 16: Model Summary of private sector commercial banks after checking and removing multicollinearity for factors affecting ROE

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.485	0.235	0.148	6.4958		

Source: Built-in SPSS using data from Money Control and RBI

After eliminating an independent variable with highest multicollinearity, NEFT, the above was obtained showing the model summary for the regression analysis between ROE, RTGS, ATM, Mobile Banking and POS. The r square is 23.5%. This shows that 23.5 % of total variability in ROE is explained by RTGS, Mobile Banking, POS and ATM and remaining is explained by other factors.

Table 4. 17: ANOVA of private sector commercial banks after checking and removing multicollinearity for factors affecting ROE

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	454.578	4	113.645	2.693	.047
	Residual	1476.851	34	38.915		
	Total	1931.43	39			

Source:Built-in SPSS using data from Money Control and RBI

The table above shows that the independent variables (Mobile Banking, RTGS, ATM and POS) significantly predict the dependent variable i.e. ROE F (4, 34) = 2.693 p <0.05.Thus, the model is a good fit.

Table 4. 18: Coefficients of private sector commercial banks after checking and removing multicollinearity for factors affecting ROE

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	7.823	1.048		7.466	0		
	ATM	-1.287	1.716	-0.192	-0.75	0.458	0.334	2.99
	POS	-0.748	1.534	-0.11	-0.488	0.629	0.433	2.31
	Mobile Banking	-0.009	1.323	-0.001	-0.007	0.995	0.519	1.928
	RTGS	4.543	1.713	0.682	2.651	0.012	0.33	3.032

Source: Built-in SPSS using data from Money Control and RBI

The table 4.18, regression coefficients were used to show the nature of the relationship between the independent variables and dependent variables. The highest multicollinearity of independent variable NEFT was removed and the above result was obtained which shows there is positive and significant relationship between RTGS and ROE of private sector commercial banks as the tolerance and VIF of collinearity statistics is greater than 0.1 and less than 10 respectively. Similarly, p value is 0.012 which is less than 0.05.Whereas there exists negative and insignificant relationship between independent variables such as ATM, POS and Mobile Banking with the ROE of banks.

Table 4. 19: Descriptive statistics of ROE, ATM, Mobile Banking, POS, NEFT and RTGS of public sector commercial banks

	Mean	Std. Deviation	N
ROE	-4.36	19.26	45
POS	0.14	1.12	45
Mobile Banking	0.12	1.13	45
ATM	0.17	1.10	45
NEFT	0.18	1.10	45
RTGS	0.22	1.07	45

Source: Built-in SPSS using data from Money Control and RBI

The table above shows of 9 listed public sector commercial banks on NSE. Descriptive statistics shows that, the mean of the ROE is -4.36 with standard deviation of 19.26.The mean of the ATM is 0.17 with standard deviation of 1.10.POS has mean value of 0.14 and standard deviation of 1.12. Similarly, the mean of Mobile Banking is 0.12 with standard deviation of 1.13 and the mean value of NEFT is 0.18 with standard deviation of 1.10. RTGS has mean value and standard deviation of 0.22 and 1.07 respectively.

Table 4. 20: Correlation analysis of factor affecting financial performance of public sector commercial banks

		ROE	POS	Mobile Banking	ATM	NEFT	RTGS
Pearson Correlation	ROE	1	0.231	0.315	0.235	0.283	0.304
	POS	0.231	1	0.731	0.967	0.956	0.93
	Mobile Banking	0.315	0.731	1	0.669	0.811	0.835
	ATM	0.235	0.967	0.669	1	0.967	0.935
	NEFT	0.283	0.956	0.811	0.967	1	0.982
	RTGS	0.304	0.93	0.835	0.935	0.982	1
Sig. (1-tailed)	ROE	.	0.063	0.018	0.06	0.03	0.021
	POS	0.063	.	0	0	0	0
	Mobile Banking	0.018	0	.	0	0	0
	ATM	0.06	0	0	.	0	0
	NEFT	0.03	0	0	0	.	0
	RTGS	0.021	0	0	0	0	.
N	ROE	45	45	45	45	45	45
	POS	45	45	45	45	45	45
	Mobile Banking	45	45	45	45	45	45

	ATM	45	45	45	45	45	45
	NEFT	45	45	45	45	45	45
	RTGS	45	45	45	45	45	45

Source: Built-in SPSS using data from Money Control and RBI

The table above explains the correlation factors affecting the financial performance (ROE) of public sector commercial banks. Here we can observe NEFT and RTGS have strong correlation, a very high positive correlation with each other with correlation score of 0.982. ATM and NEFT have very high positive correlation with 0.967 correlation score. A very high positive correlation exists between POS and NEFT, also POS and RTGS have very high positive correlation with correlation value of 0.956 and 0.93 respectively. There is very low positive correlation of ROE with POS, Mobile Banking, ATM, NEFT and RTGS with correlation score of 0.231, 0.315, 0.235, 0.283 and 0.304 respectively. A high positive correlation exists between NEFT and Mobile Banking with correlation value of 0.811, similarly a high positive correlation between Mobile Banking and RTGS with correlation score of 0.835. There is a moderate correlation can be traced between ATM and Mobile Banking with 0.669 correlation score.

Table 4. 21: Model Summary of public sector commercial banks before removing multicollinearity for factors affecting ROE

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**		
1	.344	0.118	0.005	19.209		

Source: Built-in SPSS using data from Money Control and RBI

The table above shows for the regression analysis between ROE, RTGS, ATM, Mobile Banking POS and NEFT. The r square is 118%. This shows that 11.8% of total variability in ROE is explained by RTGS, Mobile Banking, POS, ATM and NEFT and remaining is explained by other factors not included in the model.

Table 4. 22: Model Summary of public sector commercial banks after removing multicollinearity for factors affecting ROE

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.315	0.099	0.056	18.71029		

Source: Built-in SPSS using data from Money Control and RBI

The table above shows for the regression analysis between ROE, Mobile Banking and POS. The r square is 9.9%. This shows that 9.9% of total variability in ROE is explained by Mobile Banking and POS and remaining is explained by other factors.

Table 4. 23: ANOVA of private sector commercial banks after checking and removing multicollinearity for factors affecting ROE

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1616.541	2	808.271	2.309	.112
	Residual	14703.14	42	350.075		
	Total	16319.68	44			

Source: Built-in SPSS using data from Money Control and RBI

The table above shows that the independent variables (Mobile Banking and POS) do not significantly predict the dependent variable i.e. ROE F (2, 42) = 2.309 p >0.05 even after removal of variables with higher multicollinearity. Thus, the model is not a good fit.

Table 4. 24: Coefficients of public sector commercial banks after checking and removing multicollinearity for factors affecting ROE

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-5.026	2.812		-1.787	0.081		
	POS	0.05	3.682	0.003	0.014	0.989	0.466	2.147
	Mobile Banking	5.341	3.667	0.313	1.456	0.153	0.466	2.147

Source: Built-in SPSS using data from Money Control and RBI

Even after removing the multicollinearity with the order of higher collinearity, the result showed that the p value was greater than 0.05. Thus there exists no relationship between independent variables and dependent variables. Thus, DFS do not influence ROE of public sector commercial banks in India.

4.3 Summary of Findings

Based on overall data presentation and the analysis, the present researcher has come up with different findings which further assisted in making the conclusion of the research.
The result shows the followings:

- There exists strong correlation between NEFT and RTGS have with correlation score of 0.982, ATM and POS with 0.967 correlation score, POS and NEFT with correlation value of 0.956 and POS and RTGS with 0.93 correlation score of public sector commercial banks. Similarly, NEFT and RTGS of private sector commercial banks have a very high positive correlation with each other with correlation score of 0.963. So, the variables with higher multicollinearity were removed for better results of regression model.
- There is a significant and positive relationship between RTGS transactions volume and ROA indicating a significant influence of RTGS transactions volume on ROA of private sector commercial banks in India. Thus resulting to accept H5.Whereas, there is no significant influence of numbers of ATM and POS deployed with ROA of private sector commercial banks in India, leading to reject H1 and H2.
- RTGS transactions volume significantly influence ROE of private sector commercial banks in India as there is a positive relationship between them. Thus, accepting H10. Whereas, numbers of ATM and POS deployed, and Mobile banking transactions volume do not significantly impact ROE as there is negative relationship of these independent variables with ROE of private sector commercial banks in India. Hence, rejecting H6, H7 and H8.
- Mobile Banking transactions volume significantly influence ROA of public sector commercial banks in India, resulting to accept H13. But there is negative and insignificant relationship between POS deployed by public sector commercial banks and their ROA leading to reject H12.
- There is no significant influence numbers of ATM, POS deployed and Mobile Banking, NEFT and RTGS transactions volume on ROE of public sector commercial banks in India. Hence, rejecting H16, H17, H18, H19 and H20.

CHAPTER 5
CONCLUSION AND RECOMMENDATION

5.1 Conclusion

The purpose of the study is to investigate the influence of digital financial services on financial performance of private sector and public sector commercial banks in India. The study was performed by using the data of listed public sector and private sector commercial banks in NSE. The data included five year data from the year 2018 to 2022. The data was collected from the official website of Reserve Bank of India and Money Control. The objective of the study was to identify the relationship between independent variables (Mobile Banking, POS, ATM, NEFT and RTGS) and the dependent variable (ROA and ROE). As the independent variables were in number and volume of transactions and the dependent variables were in ratios. The independent variables were normalized. Similarly, five banks such as Bandhan Bank, UCO bank, City Union Bank, Punjab and Sind Bank and Indian Overseas bank did not have the complete data of consolidated ROA and ROE ratios. Thus, these banks were removed for better results.

The conceptual framework derived from different theories and models, such as The Innovation Diffusion Theory and Technology Acceptance Model. The digital financial services includes ATM, POS, online transactions and digital payments. Thus, in the study, numbers of ATM and POS deployed by banks and volume of Mobile Banking, NEFT and RTGS transactions were employed as a digital financial services.

Multicollinearity was checked and removed during the analysis in the study. The study concludes that there is positive relationship between RTGS and ROA and ROE of private sector commercial banks, thus indicating a significant influence of RTGS transactions volume on ROA and ROE of private sector commercial banks in India. Similarly, there is positive relationship between Mobile Banking transactions volume and ROA of public sector commercial banks and thus, Mobile Banking transactions volume has influence on their ROA. Whereas there is no significant influence of Mobile Banking, NEFT and RTGS transactions volume, and numbers of POS and ATMs deployed on ROE of public sector commercial banks in India

5.2 Recommendations

In this study, the influence of digital financial services on financial performance of private and public sector commercial banks in India was analysed. It is found in the study that the variability explained on ROA by variables of DFS of private commercial banks is high as compared to public sector commercial banks. Thus, the study recommends the public sector commercial banks management to boost their digital financial services as Mobile Banking has significant impact on ROA of public sector commercial banks. 22 listed public sector and private sector commercial banks on NSE were selected for the study, but due to lack of consolidated data ratios on two private sector commercial banks and three public sector commercial banks, these banks were removed for better results and thus analysis was done on 17 banks. There are 12 public sector commercial banks and 21 private sector commercial banks in India. Thus a further research can be conducted by increasing the sample size.

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APPENDIX

Private Sector Commercial Banks

	Year	Name of the bank	ROA	ROE	ATM	POS	Mobile Banking	NEFT	RTGS
1	2018	Axis Bank Ltd	0.06	0.7	1.25	0.69	-0.30	0.32	0.11
2	2019	Axis Bank Ltd	0.61	7.43	0.95	0.70	0.04	0.57	0.23
3	2020	Axis Bank Ltd	0.19	2.14	1.81	0.75	0.39	0.66	0.15
4	2021	Axis Bank Ltd	0.71	6.94	1.74	0.99	2.30	1.13	0.78
5	2022	Axis Bank Ltd	1.18	11.93	1.72	2.23	5.04	1.73	1.04
6	2018	Federal Bank	0.67	7.62	-0.59	-0.84	-0.49	-0.68	-0.61
7	2019	Federal Bank	0.81	9.75	-0.59	-0.81	-0.48	-0.65	-0.60
8	2020	Federal Bank	0.86	10.66	-0.55	-0.79	-0.47	-0.61	-0.62
9	2021	Federal Bank	0.81	10.08	-0.55	-0.79	-0.46	-0.55	-0.51
10	2022	Federal Bank	0.87	10.23	-0.56	-0.79	-0.46	-0.47	-0.48
11	2018	HDFC Bank Ltd	1.67	16.88	1.07	0.39	-0.48	1.15	1.38
12	2019	HDFC Bank Ltd	1.72	14.53	1.15	0.65	-0.11	1.41	1.57
13	2020	HDFC Bank Ltd	1.72	15.45	1.29	1.81	0.28	1.53	1.36
14	2021	HDFC Bank Ltd	1.76	15.17	1.40	1.87	1.14	2.40	3.03
15	2022	HDFC Bank Ltd	1.79	15.38	1.91	2.42	2.58	3.11	3.70
16	2018	ICICI Bank Ltd	0.68	7.16	1.33	0.15	-0.35	0.81	0.23
17	2019	ICICI Bank Ltd	0.34	3.82	1.43	0.35	-0.11	0.64	0.39
18	2020	ICICI Bank Ltd	0.69	7.98	1.80	0.63	0.15	0.85	0.38
19	2021	ICICI Bank Ltd	1.16	11.9	1.70	1.05	0.70	1.60	1.45
20	2022	ICICI Bank Ltd	1.43	14.04	1.67	2.03	1.51	2.14	1.98
21	2018	IDFC Bank	0.69	5.76	-0.84	-0.83	-0.49	-0.82	-0.72
22	2019	IDFC Bank	-1.14	-10.48	-0.83	-0.83	-0.48	-0.80	-0.71
23	2020	IDFC Bank	-1.9	-18.45	-0.79	-0.82	-0.46	-0.77	-0.68
24	2021	IDFC Bank	0.29	2.69	-0.74	-0.78	-0.38	-0.71	-0.57
25	2022	IDFC Bank	0.06	0.62	-0.73	-0.76	-0.25	-0.63	-0.51
26	2018	INDUSIND Bank Ltd	1.62	15.35	-0.51	-0.74	-0.48	-0.60	-0.54
27	2019	INDUSIND Bank Ltd	1.18	12.52	-0.46	-0.56	-0.45	-0.58	-0.50
28	2020	INDUSIND Bank Ltd	1.45	12.94	-0.43	-0.49	-0.42	-0.53	-0.54
29	2021	INDUSIND Bank Ltd	0.8	6.78	-0.41	-0.43	-0.32	-0.46	-0.40
30	2022	INDUSIND Bank Ltd	1.19	10.06	-0.42	-0.17	-0.20	-0.38	-0.34
31	2018	Kotak Mahindra Bank LTD	1.83	12.28	-0.51	-0.81	-0.44	-0.34	-0.16
32	2019	Kotak Mahindra Bank LTD	1.82	12.46	-0.49	-0.76	-0.31	-0.23	-0.05
33	2020	Kotak Mahindra Bank LTD	1.93	12.89	-0.46	-0.73	-0.20	-0.19	-0.12
34	2021	Kotak Mahindra Bank LTD	2.08	11.84	-0.45	-0.72	0.14	0.03	0.35

35	2022	Kotak Mahindra Bank LTD	2.21	12.5	-0.43	-0.67	0.94	0.25	0.45
36	2018	RBL	1.02	9.45	-0.78	0.41	-0.44	-0.73	-0.70
37	2019	RBL	1.06	11.38	-0.79	1.27	-0.42	-0.08	-0.70
38	2020	RBL	0.56	4.73	-0.78	1.00	-0.44	-0.65	-0.69
39	2021	RBL	0.52	4.18	-0.78	1.07	-0.43	-0.58	-0.64
40	2022	RBL	-0.15	-1.32	-0.78	1.44	-0.40	-0.55	-0.62

Public Sector Commercial Banks

S. N	Year	Bank Name	ROA	ROE	ATM	POS	Mobile Banking	NEFT	RTGS
1	2018	Bank of Baroda	-0.25	-4.05	-0.05	-0.06	-0.45	-0.19	-0.08
2	2019	Bank of Baroda	0.13	2.2	-0.06	-0.14	-0.43	-0.14	-0.03
3	2020	Bank of Baroda	0.07	1.21	0.17	-0.15	-0.42	0.01	-0.07
4	2021	Bank of Baroda	0.12	1.87	0.07	-0.21	0.30	0.27	0.66
5	2022	Bank of Baroda	0.58	8.54	0.06	-0.32	0.91	0.74	0.85
6	2018	Bank of India	-0.96	-16.21	-0.19	-0.02	-0.43	-0.28	-0.20
7	2019	Bank of India	-0.86	-14.79	-0.27	-0.12	-0.29	-0.25	-0.19
8	2020	Bank of India	-0.46	-7.88	-0.30	-0.21	-0.14	-0.25	-0.29
9	2021	Bank of India	0.28	5.12	-0.31	-0.19	0.36	-0.06	0.07
10	2022	Bank of India	0.46	7.04	-0.33	-0.23	-0.38	-0.01	0.02
11	2018	Bank of Maharashtra	-0.71	-11.04	-0.54	-0.44	-0.46	-0.58	-0.64
12	2019	Bank of Maharashtra	-2.89	-105.61	-0.54	-0.44	-0.42	-0.56	-0.64
13	2020	Bank of Maharashtra	0.23	4.13	-0.54	-0.44	-0.36	-0.56	-0.67
14	2021	Bank of Maharashtra	0.29	5.13	-0.54	-0.44	-0.23	-0.51	-0.54
15	2022	Bank of Maharashtra	0.49	9.23	-0.53	-0.44	-0.01	-0.47	-0.50
16	2018	Canara Bank	-0.62	-13	-0.07	-0.36	-0.45	-0.35	-0.36
17	2019	Canara Bank	0.08	1.92	-0.10	-0.35	-0.37	-0.31	-0.29
18	2020	Canara Bank	-0.26	-5.69	-0.11	-0.33	-0.28	-0.31	-0.39
19	2021	Canara Bank	0.24	5.34	0.19	-0.27	0.14	-0.07	0.20
20	2022	Canara Bank	0.48	9.96	0.11	-0.20	0.76	0.19	0.40
21	2018	Central Bank of India	-1.57	-28.22	-0.35	-0.44	-0.47	-0.33	-0.48
22	2019	Central Bank of India	-1.69	-29.27	-0.41	-0.44	-0.47	-0.35	-0.46

23	2020	Central Bank of India	-0.35	-6.76	-0.43	-0.44	-0.34	-0.39	-0.53
24	2021	Central Bank of India	-0.27	-5.58	-0.43	-0.44	-0.18	-0.26	-0.31
25	2022	Central Bank of India	0.27	4.51	-0.47	-0.44	0.05	-0.23	-0.28
26	2018	Indian Bank	0.51	8.14	-0.45	-0.40	-0.46	-0.51	-0.59
27	2019	Indian Bank	0.13	2.28	-0.42	-0.40	-0.42	-0.49	-0.57
28	2020	Indian Bank	0.27	4.35	-0.40	-0.40	-0.36	-0.48	-0.60
29	2021	Indian Bank	0.5	9.34	-0.35	-0.40	-0.18	-0.24	-0.23
30	2022	Indian Bank	0.61	10.63	-0.35	-0.38	0.11	-0.04	-0.14
31	2018	Punjab National Bank	-1.55	-31.26	-0.05	-0.20	-0.47	-0.11	0.00
32	2019	Punjab National Bank	-1.21	-22.51	-0.08	-0.13	-0.47	-0.07	0.02
33	2020	Punjab National Bank	0.05	0.74	-0.08	-0.05	-0.23	-0.05	-0.10
34	2021	Punjab National Bank	0.2	3	0.21	-0.21	1.22	0.30	0.79
35	2022	Punjab National Bank	0.28	4.26	0.18	-0.20	0.64	0.71	1.01
36	2018	State Bank of India	-0.12	-2.21	3.10	2.64	-0.26	2.30	2.22
37	2019	State Bank of India	0.05	0.98	3.03	2.47	0.23	2.45	2.27
38	2020	State Bank of India	0.47	8.69	3.04	2.96	1.08	2.59	1.86
39	2021	State Bank of India	0.46	8.89	3.30	3.34	3.11	3.60	3.62
40	2022	State Bank of India	0.65	12.53	3.48	4.24	6.06	4.27	4.20
41	2018	Union Bank of India	-1.06	-22.75	-0.18	-0.32	-0.47	-0.39	-0.18
42	2019	Union Bank of India	-0.58	-11.92	-0.24	-0.20	-0.30	-0.35	-0.17
43	2020	Union Bank of India	-0.56	-10.16	-0.23	-0.18	-0.21	-0.36	-0.29
44	2021	Union Bank of India	0.26	4.79	0.16	1.13	-0.17	-0.01	0.52
45	2022	Union Bank of India	0.44	7.97	0.05	0.55	1.18	0.34	0.76

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