

METHODS

Bank service analysis

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Banking system occupies an important place in the Indian economy. It provides various services to its customers. The nature of its services has evolved with the advancement of technology. Understanding consumer satisfaction with service quality has gotten increasingly difficult. The present investigation was planned with the objective to analyze the customers' choice toward the services provided by the bank. The research data were collected by the various bank customers for analyzing the service quality from the ratings provided by the customers. In this regard, the goal of this research study is to report the findings of selected banking services used by customers in India.

Keywords: Service quality, Customer satisfaction, Service delivery, Service efficiency, Service evaluation

Introduction

Banks are the oldest, biggest, and fastest growing financial industry in India. To confirm the issues and trends of these components that regulate service quality, the dynamics of service quality were studied. All public, commercial, and international banks now play a critical role in delivering fundamental banking services to all of their rural and urban consumers in order to preserve customer retention and satisfaction. As we know, after the rise of technology, the working of banks' perspective toward customers has totally changed; they are evolving day by day, but the effectiveness occurs in only a few banks. This research sheds light on customer behavior toward the bank's service and its quality. In this regard, this research focuses on the findings of the selected banking services that are liked by the customers in India.

Literature review

The study was conducted to know the services that are provided by the bank and to check the customers' satisfaction and also the adaptability by the customer of the involvement of IT Infrastructure services. To retain the customers, the bank enhanced

the transaction security and provided vast IT services (Dhandabani, 2010).

“Age” is one of the important factors that affect the selection of services (Thakur, 2011), and also the customers' geographical location affects service choice. Banks are now updating and modifying their services and working toward providing customers with relevant services at various levels of the trends by changing their infra-work according to the customers' satisfaction, by delivering different services and value-added services to manage the relationship. Information system quality, customer service quality, and banking service quality have an impact on banking service quality (Kheng, 2010).

Objective

The objective of this study is to identify the bank services that are used and liked most by the customers and to identify the services that are less utilized by customers so that the bank can improve the quality of the service.

Methodology

This study is based in India. The data consisted of customers who have accounts with private as well as public sector banks.

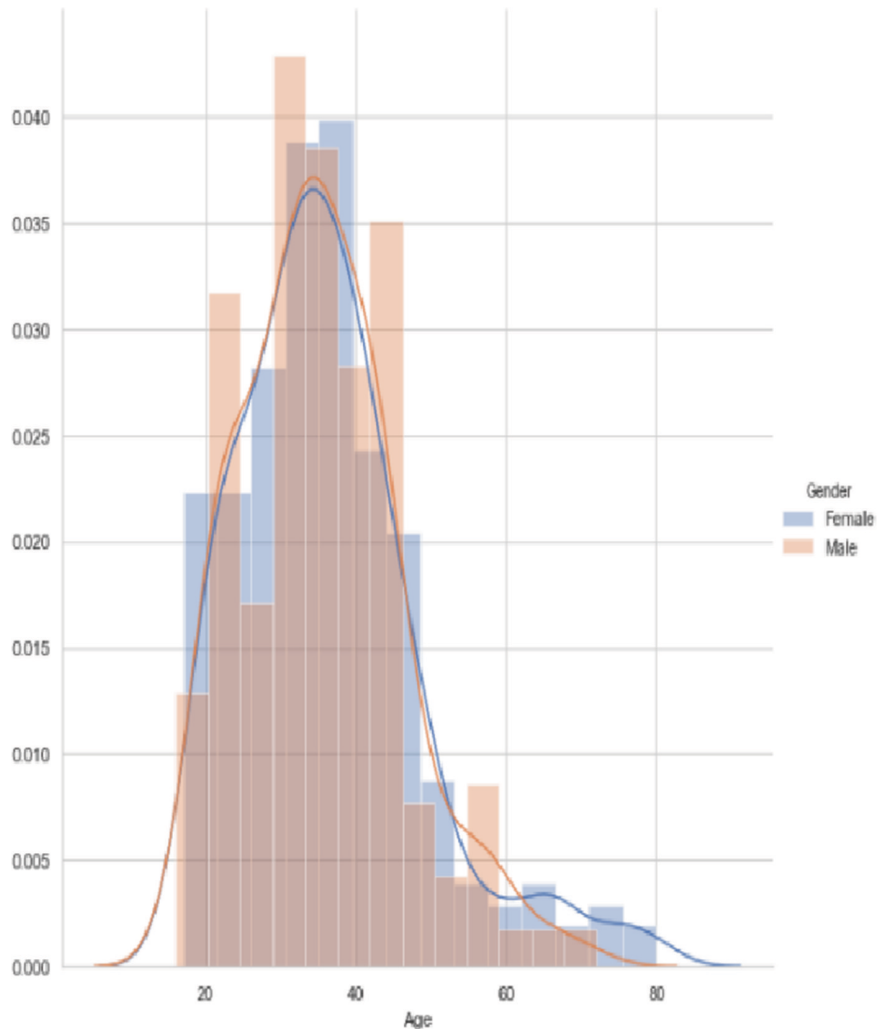


FIGURE 1 |

The data were collected through a convenience sampling method. The questionnaires were distributed to the bank customers. The aim of the research was described to the customers. The questionnaire consisted of the geographical location of the bank, which bank used, and the bank services they used and liked. The customers provided their likings through ratings of various services.

We analyze the data that were collected through a questionnaire. To analyze the data, we used Python and its libraries, and for prediction, we used machine learning algorithms.

Software and hardware specifications

Anaconda Navigator with Jupyter notebook and its various libraries such as Numpy, Pandas, and Windows operating system are used in this project.

Analysis and interpretation

This study is a high-level analysis of the factors that come into the performance of banking services. There are many areas where an analysis of each of the factors can be made. We analyzed data for 500 people.

We considered 10 services that are provided by the bank: ATM service, accepting deposit, cheque/check payment, credit cards, current account services, debit cards, foreign currency exchange, home banking, mobile banking, and online banking.

- Check/cheque payment

Check books are provided by banks to account holders. Account holders can pay money with a check drawn from the bank.

- Foreign currency exchange

Banks are in charge of dealing with foreign currency. Banks convert foreign currency into local currency.

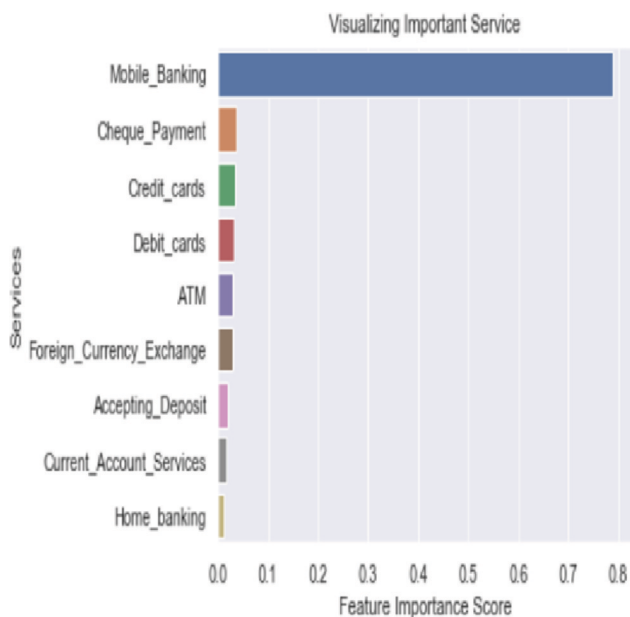


FIGURE 2 |

	precision	recall	f1-score	support
0	0.00	0.00	0.00	4
1	0.00	0.00	0.00	5
2	0.00	0.50	0.00	8
3	1.00	1.00	1.00	65
4	0.50	1.00	0.67	14
5	0.00	1.00	0.00	39
accuracy			0.92	105
macro avg	0.50	0.50	0.50	105
weighted avg	0.68	0.92	0.80	105

FIGURE 3 |

- Credit cards

A credit card is a type of payment card that allows its owner to make purchases and pay for them later.

- ATM services

ATM helps customers withdraw cash from their account with the following features:

- 24-h availability.
- Elimination of labor costs.
- Convenience of location.
- Debit cards

Debit cards are used to make electronic withdrawals from cardholders' accounts.

- Home banking

Home banking is the process of completing the whole banking process in offline mode. Customers visit the branch and solve their queries through offline mode.

- Online banking

Online banking is a service provided by banks that allows customers to access their account information from any device. Internet banking is another name for online banking.

- Mobile banking

Mobile banking is the use of a mobile device to do balance checks, account transactions, payments, credit applications, and other financial transactions.

- Accepting deposit

Banks accept deposits from people who have money to save but are unable to invest it in profitable ventures.

Interpretation of the analysis

The age versus gender graph shows the relationships between the number of males and females with their respective ages.

Visualizing the services that are predicted by the reviews on the basis of services and analyzing the data for the most popular services used by customers.

On behalf of these services, our model accuracy prediction is 92%.

Conclusion

The most liked service by customers is mobile banking, and the least used service is home banking or at branch. For prediction, we used the Random Forest regression for our model, which predicts accuracy at a 92% level. This prediction is totally based on customer reviews.

Long-term success for any bank cannot be achieved without the development of services and an intense focus on customers. Banks have to provide a positive and consistent customer experience that can transform them into trusted advisers.

Finding and suggestions

This study can be performed on a large number of customers. The customer's review variable may change the value of the prediction and affect the accuracy; it considers only limited variables, and in the future, variables of all kinds could be considered.

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