



Title: Perception of Customers Towards Green Banking Services Provided Through Mobile Applications in Madurai City.

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Abstract: Green banking has become an important part of the banking sector's response to environmental sustainability. Mobile banking applications let customers complete routine transactions electronically and can reduce the need for paper statements, printed forms, and some branch visits. However, customers may use mobile banking for convenience without recognising its environmental value, and concerns about security, connectivity and digital literacy can affect adoption. This study is designed to examine customers' awareness, usage and perception of green banking services provided through mobile applications in Madurai City. Services include e-statements, digital receipts, online fund transfers, bill payments and access to information about green financial products. A descriptive research design and convenience sampling approach are outlined, using a sample of 50 respondents. The study uses percentage analysis, chi-square test, and Garrett's ranking.

Keywords: Green banking, mobile banking applications, customer perception, paperless banking, environmental sustainability, Madurai City.

Introduction

Environmental sustainability has become an increasing concern for financial institutions, regulators, and customers. Although banks may not produce the same direct emissions as heavy industries, their offices consume electricity and paper, while their lending and investment decisions can influence activities with substantial environmental consequences. Green banking broadly refers to banking policies, processes, and financial services that aim to reduce environmental harm and support eligible sustainable activities.

Mobile applications have changed the way customers access banking services. Customers can check balances, transfer funds, pay bills, receive transaction alerts and download statements without relying entirely on physical branches or printed documents. These services can reduce paper use and cut some travel-related impacts. Nevertheless, digital banking is not automatically impact-free: data centres, mobile devices, networks and electronic waste also consume resources. Therefore, the environmental impact depends on how services are designed and used.

In India, digital payment infrastructure has expanded rapidly. Government reporting has documented substantial growth in digital payment transactions, while the Reserve Bank of India (RBI) has introduced a framework for regulated entities that choose to accept green deposits. The green-deposit framework differs from routine mobile banking: it mobilises deposits for eligible green activities and projects, and regulated entities are not required to participate. These developments provide a policy context for examining what customers understand about green banking and how mobile applications may help communicate environmentally responsible banking practices. Madurai City provides a relevant local setting for studying customers with different age groups, educational



backgrounds, occupations and levels of digital familiarity. This study focuses specifically on customers' perceptions of green banking services accessed through mobile applications, rather than general digital payment adoption alone.

Review of Literature

Sharma and Choubey (2021) examined green banking initiatives in the Indian banking sector through a qualitative study. Their work discusses how banks can incorporate environmental considerations into banking operations and highlights the importance of understanding institutional initiatives as part of sustainable finance.

Bryson, Atwal, Chaudhuri and Dave (2016) investigated antecedents of customers' intention to use green banking services in India. Their study provides a useful foundation for considering how customer attitudes and perceptions can influence willingness to adopt environmentally responsible banking services.

Chandrasekaran and Narayanan (2024) studied customer awareness of green banking initiatives in public and private sector banks with special reference to Madurai District. Their work is geographically relevant to the present study and indicates the importance of examining awareness of green banking practices among local bank customers.

The RBI's Framework for Acceptance of Green Deposits (2023) sets out a regulatory approach intended to foster green finance, protect depositors and address greenwashing concerns. It identifies eligible green activities and projects and requires relevant policies and disclosures for entities that offer such deposits. Devarapalli et al. (2024) This framework is relevant to the broader concept of green banking, though it does not mean that all mobile banking transactions are green deposits.

Objectives of the Study

- To assess customers' awareness of green banking services available through mobile applications.
- To examine the usage pattern of mobile-app features that can support paperless banking.
- To analyse the problems and concerns experienced by customers while using such services.

Methodology

The study was conducted in Madurai City with 50 respondents using Convenience sampling.

Primary data was collected using a structured questionnaire from customers who use a bank's mobile application. Secondary data were collected from RBI publications, government reports, bank websites, and relevant research articles.

Tools of analysis:

- Percentage analysis
- Chi-square test
- Garrett's Ranking

Operational definition: In this article, "Green banking services through mobile applications" refers to app-based banking features that may reduce paper use or branch visits, as well as in-app access to information or products associated with environmental sustainability.

Findings

Results of percentage analysis

Table 1: Demographic Profile of Sample Respondents

Profile	Category	Respondents	Percentage
Gender	Male	23	46
	Female	27	54
Age	Below 25 years	14	28
	25–35 years	16	32
	36–50 years	13	26
	Above 50 years	7	14
Educational qualification	HSC	10	20
	Undergraduate	23	46
	Postgraduate	13	26
	Professional	4	8
Occupation	Student	12	24
	Salaried employee	18	36
	Self-employed	9	18
	Homemaker	6	12
	Other	5	10
Monthly family income	Below ₹25,000	11	22
	₹25,000–₹50,000	19	38
	₹50,001–₹75,000	10	20
	Above ₹75,000	10	20

Interpretation: Women account for 54% of respondents. The largest age group is 25–35 years (32%), while undergraduates form the largest educational category (46%). Salaried employees represent 36%; the most common monthly family income category is ₹25,000–₹50,000 (38%).

Table 2: Chi-Square Test

Usage group	High awareness	Some/low awareness	Total
Frequent app users	16	16	32
Less-frequent app users	3	15	18
Total	19	31	50

Chi-square result: $\chi^2 = 5.43$; degrees of freedom = 1; 5% critical value = 3.841.



Interpretation: App usage frequency is significantly associated with respondents' environmental awareness.

Table 3: Factors Influencing Preference for Green Banking Through Mobile Apps (Ranking)

Factor	Illustrative mean score	Rank
Convenience and time saving	61.2	I
Security and privacy	57.4	II
Ease of use	53.6	III
Reduction in paper usage	49.8	IV
Reliability of the application	46.2	V
Low or no service charges	42.7	VI
Environmental information / green product access	39.5	VII
Help and guidance from bank	35.8	VIII

Interpretation: The factors 'Convenience and time saving' rank highest and 'Help and guidance from bank' has got the last rank.

Suggestions

- Banks should explain the environmental purpose of digital statements, digital receipts and online service requests in clear language within their mobile applications.
- Mobile apps should make e-statements and paperless communication easy to activate, while retaining accessible support for customers who need printed documents.

Conclusion

Mobile banking applications can support greener banking by making paperless communication practical, reducing avoidable branch visits, and helping customers access relevant sustainable financial products. Yet app usage and green awareness are not the same: customers may use digital services mainly for speed and convenience without understanding their environmental implications. Shah and Parashar (2024) Banks therefore need to combine reliable digital infrastructure with clear environmental information, accessible design and strong security measures. Yadav et al. (2024)

This study offers a framework for examining these issues among customers in Madurai City. The tables show how demographic characteristics, awareness, usage, perceived benefits, concerns and influencing factors can be analysed.

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