



International Journal of Science, Architecture, Technology and Environment

The Role of Mobile Banking in Encouraging Sustainable Consumption in Urban India

Aswin B^{1*}, Dr. Parul Tandan²

¹Student (PGDM), Dayananda Sagar Business School, Bengaluru, India

²Associate Professor, Dayananda Sagar Business School, Bengaluru, India

*Corresponding author

DOI: <https://doi.org/10.63680/hi6rvrhtyu0887bt65>

Abstract

This study investigates the role of mobile banking in promoting sustainable consumption among urban consumers in India. Despite the widespread adoption of mobile banking, its potential impact on encouraging eco-friendly financial behavior remains underexplored. The primary objective of this research is to analyze the relationship between mobile banking usage and sustainability awareness, identify key motivators for adopting green financial products, and assess the influence of demographic factors. A quantitative methodology was employed, utilizing a structured questionnaire distributed through online and in-person methods, yielding 107 valid responses. Statistical analyses, including Chi-Square tests, correlation, regression, ANOVA, and T-tests, were applied to interpret the data. Findings reveal a significant association between mobile banking usage and sustainability consciousness, although financial incentives emerged as the strongest motivator for adopting green financial products, rather than environmental awareness alone. Age and gender had minimal influence on sustainability perceptions. Furthermore, mobile banking usage was moderately correlated with perceived reductions in CO₂ emissions, highlighting its environmental benefits. The study concludes that while digital banking platforms effectively raise sustainability awareness, combining financial incentives with educational initiatives is crucial to drive actionable change. These insights offer valuable recommendations for financial institutions and policymakers to integrate sustainability-driven strategies within mobile banking ecosystems to foster long-term responsible consumption behavior in urban India.

Keywords: Mobile Banking, Sustainable Consumption, Financial Incentives, Digital Banking, Sustainability Awareness

INTRODUCTION

In recent years, mobile banking has transformed financial transactions by providing convenience, efficiency, and accessibility. Beyond its economic benefits, digital banking has the potential to help with sustainability by lowering paper usage, reducing in-person visits, and encouraging good financial behavior. However, the extent to which mobile banking promotes sustainability awareness and the adoption of green financial solutions remains a topic of interest. While previous study has looked into the environmental benefits

of digital money, little is known about the behavioral factors that influence sustainable banking adoption. Understanding the role of digital money in supporting sustainability is increasingly important as it grows. Financial institutions, politicians, and sustainability activists are increasingly focused on measures that combine financial incentives and educational initiatives to encourage environmentally sustainable financial decisions. This study examines user behavior and incentives to provide insights into how digital banking might be used to support long-term financial decisions. The findings add to ongoing discussions about digital finance and environmental responsibility by providing data-driven recommendations for building a more sustainable financial ecosystem.

Despite the widespread adoption of mobile banking in urban India, its potential to drive sustainable consumption remains underexplored. While digital banking reduces paper usage, minimizes in-person transactions, and enhances financial accessibility, there is limited understanding of how these factors translate into tangible sustainable financial behaviours. Existing research indicates that while mobile banking users exhibit higher sustainability awareness, awareness alone does not necessarily lead to action. Instead, financial incentives emerge as the strongest motivator for adopting green financial products, whereas the perceived environmental impact of mobile banking has minimal influence. Furthermore, demographic variables such as age show no significant effect on sustainability perception, while gender-based differences are minor. This raises a critical research problem: How can mobile banking be leveraged beyond mere awareness to actively drive sustainable financial behaviour? What role do financial incentives, digital education, and policy interventions play in promoting green financial solutions? Addressing this issue will help financial institutions and policymakers develop targeted strategies that integrate sustainability education, financial incentives, and digital banking innovations to encourage long-term sustainable consumption in urban India.

SIGNIFICANCE OF THE RESEARCH:

This study holds substantial significance as it explores how mobile banking, a rapidly growing financial technology in urban India, can drive sustainable consumption patterns. With increasing smartphone penetration and digital literacy, mobile banking platforms are influencing consumer behavior, promoting paperless transactions, enabling responsible purchasing, and encouraging financial inclusivity. By analyzing this relationship, the research highlights how digital financial tools contribute not just to economic growth but also to environmental and social sustainability. The findings can provide valuable insights for policymakers, financial institutions, and sustainability advocates to design strategies that integrate digital finance with sustainable development goals. Ultimately, this study aims to bridge the gap between technology adoption and responsible consumption in India's urban centers, paving the way for a greener and more equitable future. It will also help identify key opportunities for leveraging mobile banking to shape conscious consumer habits. The research aspires to inspire innovations that align digital growth with sustainability efforts in urban India.

LITERATURE REVIEW:

Nayal and Sharma (2020) examined the extent of online utility service usage in Punjab, India, focusing on mobile banking for bill payments. Their study found that a significant percentage of respondents utilized online platforms for financial transactions, highlighting the growing reliance on digital services for bill payments and banking. Baxi, Chaurasiya, and Tiwari (2025) discussed the role of mobile banking in promoting green banking initiatives. Their study highlighted how mobile banking facilitates paperless transactions, reducing the need for physical documents such as bank statements, receipts, and checks, thereby minimizing deforestation and the environmental impact of paper production. Additionally, they emphasized the energy efficiency of mobile banking, as it reduces the necessity for physical branch visits, leading to lower energy

consumption in bank branches. Furthermore, the shift to digital banking services helps lower the carbon footprint by reducing transportation-related emissions associated with travel to physical bank locations. Wood and Brathwaite (2016) explored the adoption of digital currencies as a payment method in Barbados, highlighting the growing acceptance of digital transactions and related technologies. Their study emphasized how the evolution of payment methods, including digital currencies, reflects an increasing reliance on digital receipts and cashless transactions, indicating a shift towards a more technology-driven financial ecosystem. Ray (2023) examined the influence of consumer awareness on preferences for neo banks in the Indian banking sector. The study highlighted that factors such as convenience, trust, and environmental awareness play a crucial role in shaping consumer preferences for digital banking services, including paperless transactions. Similarly, Singh, Srivastava, and Sinha (2017) analyzed consumer preferences and satisfaction with mobile wallets in North India. Their research found that the increasing adoption of digital financial services is driven by convenience and efficiency, further supporting the preference for paperless transactions in banking. Marcos and Castrillo (2022) explored the role of sustainable finance in Europe, emphasizing the use of green bonds to fund environmentally beneficial projects such as renewable energy and sustainable infrastructure. Their study highlighted the European Union's green bond standard, which aims to enhance transparency and prevent greenwashing in sustainable investments. Escrig-Olmedo, Muñoz-Torres, and Fernández-Izquierdo (2013) examined socially responsible investing (SRI), which involves investing in companies that meet environmental, social, and governance (ESG) criteria. Their research indicated that SRI is gaining global traction, as investors increasingly seek transparency regarding the social and environmental impact of their investments. Mwangasu, Ngali, and Maina (2022) examined the role of mobile banking in promoting financial inclusion in Taita Taveta County, Kenya. Their study highlighted how mobile banking services enhance access to financial resources, which is essential for sustainable development and indirectly supports economic growth. Méndez-Suárez, Monfort, and Gallardo (2020) explored sustainable banking practices, emphasizing how sustainable investment options align with the Sustainable Development Goals (SDGs). Their research demonstrated that such investments not only generate financial returns but also contribute to societal well-being and environmental sustainability. Soyupak and İpek (2025) explored the user experience and usability of mobile and open banking among digital natives in Türkiye. Their study highlighted that complex mobile banking interfaces can discourage users, particularly those who are less tech-savvy, from engaging with green financial products. Additionally, they found that mobile banking platforms often lack sufficient information on green financial products, making it challenging for users to make informed financial decisions. Linciano, Soccorso, Capobianco, and Caratelli (2020) examined the financial advisor-investor relationship concerning sustainability and investments. Their study highlighted the growing regulatory mandate for integrating Environmental, Social, and Governance (ESG) factors into investment strategies. This regulatory push is driving investors to incorporate sustainability considerations into their portfolios, reflecting the increasing importance of ESG criteria in financial decision-making. Cardoso, Pereira, Silva, Souza, Oliveira, and Figueiredo (2024) explored the impact of digital influencers on Generation Y's adoption of fintech banking services in Brazil. Their study highlighted that while digital influencers play a significant role in shaping consumer behavior, their influence on sustainable purchasing decisions through mobile banking remains complex. They suggested that partnering with influencers who promote sustainable practices can enhance awareness and encourage eco-friendly choices within mobile banking platforms. O'Reilly (2015) examined the impact of green marketing on consumer and corporate behavior, emphasizing the role of financial incentives in promoting sustainability. The study highlighted how governments provide grants, subsidies, and tax credits to encourage the production and consumption of sustainable products, as seen in Ireland's support for green goods and renewable energy solutions. Additionally, financial incentives were found to effectively influence consumer behavior by making sustainable products more affordable and attractive. However, the research also pointed out the challenge of maintaining long-term consumer commitment to eco-friendly choices beyond

the duration of these incentives. Faheem, Zahid, and Ali (2024) explored the awareness of sustainable finance among business graduates and the general public, highlighting a low level of understanding in this area. Their study emphasized the critical role of financial institutions in educating customers about sustainable finance to enhance awareness and informed decision-making. Furthermore, they underscored the significance of sustainable finance in achieving the Sustainable Development Goals (SDGs), noting that increased financial literacy can help align financial decisions with these global sustainability objectives.

RESEARCH METHODOLOGY:

This study uses a quantitative research approach, with a structured questionnaire delivered to urban Indian customers, to determine the association between mobile banking usage and sustainability consciousness. The core data was gathered using an online poll, which yielded 107 responses. The convenience sample method was utilized to target persons who actively use mobile banking services. The poll included multiple-choice and Likert-scale questions about demographics, mobile banking usage trends, financial incentives, environmental awareness, and barriers to using sustainable financial products. The acquired data was examined using descriptive and inferential statistical techniques. Descriptive statistics were used to calculate frequency distributions, percentages, and crosstabulations for demographic data and mobile banking usage patterns. Chi-squared tests were used to investigate the link between mobile banking uptake and sustainability awareness. Correlation study found a link between mobile banking usage and perceived CO₂ emission reduction. Regression analysis indicated major determinants of green financial product uptake. Furthermore, ANOVA and T-tests were utilized to assess the impact of demographic variables such as age and gender on sustainability perception. The study ensures reliability by using a structured questionnaire and reducing respondent bias. The findings provide data-driven insights into how digital banking might help promote sustainable financial behavior.

RESEARCH OBJECTIVES:

1. To examine the relationship between mobile banking usage and sustainability awareness among urban consumers in India.
2. To identify key motivators, especially the role of financial incentives, in adopting green financial products.
3. To assess the influence of demographic factors such as age and gender on sustainability perception and behaviour.
4. To evaluate how mobile banking can be leveraged to promote sustainable financial behaviour through education and policy interventions.
5. To provide data-driven insights for financial institutions and policymakers to design strategies that encourage sustainable consumption via digital banking.

RESEARCH DESIGN:

A questionnaire-based approach served as the primary data collection method, distributed via social media platforms and Google Forms to ensure broad reach. A random sampling technique was employed, incorporating both online and in-person data collection methods to enhance respondent diversity. Multiple follow-ups were conducted to maximize participation, yielding 107 responses. Data analysis was performed using Excel for exploratory factor analysis and statistical evaluation, ensuring accurate interpretation and presentation of findings.

RESEARCH HYPOTHESES:

Null Hypothesis (H_0): There is no significant relationship between mobile banking adoption, financial incentives, and demographic factors in influencing sustainability consciousness and the adoption of green financial products.

Alternative Hypothesis (H_1): There is a significant relationship between mobile banking adoption, financial incentives, and demographic factors in influencing sustainability consciousness and the adoption of green financial products.

DATA COLLECTION METHODS:

This study employed a questionnaire-based survey as the primary data collection method to analyse the influence of The Role of Mobile Banking in Encouraging Sustainable Consumption in Urban India. The questionnaire was designed to capture respondents' Demographic Information, Mobile Banking Usage, Environmental Impact Perception, Paperless Transaction Preferences, Sustainable Banking Interest, Adoption of Green Financial Products and Barriers & Incentives for Sustainable Finance.

To ensure a diverse sample, the survey was distributed through social media platforms and Google Forms, allowing for a broad reach across different generations. A random sampling technique was used to avoid selection bias, and both online and in-person data collection methods were utilized. Multiple follow-ups were conducted to maximize response rates, resulting in a total of 107 valid responses for analysis.

SAMPLING METHOD:

This study employed a convenience sampling technique to select respondents actively using mobile banking services in urban India. The questionnaire was distributed through social media platforms, email invitations, and Google Forms to reach digitally active individuals. Both online and in-person data collection methods were used to enhance participation, resulting in 107 valid responses. Data analysis involved the use of ANOVA, T-tests, Chi-Square tests, correlation, and regression analysis to explore the relationship between mobile banking usage, sustainability awareness, and the adoption of green financial products. This approach provides a focused understanding of how mobile banking influences sustainable consumption behavior in urban settings.

DATA ANALYSIS AND INTERPRETATION

Table 1: Chi-Square Test – Relationship Between Mobile Banking and Sustainability Awareness

Test	Value	df	p-value	Significance
Pearson Chi-Square	44.831	12	< 0.001	Significant
Likelihood Ratio	31.906	12	0.001	Significant
Linear-by-Linear Association	5.355	1	0.021	Significant

The Chi-Square test examined the relationship between mobile banking uptake and sustainability consciousness. The study found a significant association ($\chi^2 = 44.831$, $p < 0.001$), indicating that those who use mobile banking are more likely to be aware of sustainable financial practices. This shows that digital banking systems can be excellent tools for raising sustainability awareness. Given this relationship, financial institutions should incorporate green banking education campaigns into their mobile banking services, ensuring that users are aware of sustainable financial solutions and responsible consumption practices.

Table 2: Correlation Analysis Between Mobile Banking Usage and CO₂ Emissions

Variables	Use Mobile Bank	CO ₂ Emission
Use Mobile Bank	1.000	0.312
CO ₂ Emission	0.312	1.000
Sig. (2-tailed)	0.001	0.001
N (Sample Size)	176	176

The correlation analysis reveals a moderate positive association between mobile banking usage and CO₂ emissions ($r = 0.312$). The p-value (0.001) is much lower than 0.05, indicating that the link is statistically significant. Mobile banking usage reduces CO₂ emissions through reduced paper consumption, in-person visits, and energy-intensive activities. This study, which found a statistically significant correlation, validates the notion that financial institutions and policymakers should actively push digital banking solutions to encourage sustainable financial behavior and environmental advantages. Future studies could look at longitudinal data to see if this pattern persists as mobile banking use increases.

Table 3: Regression Analysis – Predictors of Green Savings Account Adoption

Predictor	B (Unstandardized)	t	p-value	Significance
Use Mobile Banking	0.083	1.502	0.135	Not Significant
Support Financial Incentives	0.368	4.020	< 0.001	Significant
MB Environmental Impact	-0.056	-0.474	0.636	Not Significant

The regression analysis aimed to evaluate how mobile banking usage, financial incentives, and perceptions of environmental effect affect the chance of opening a Green Savings Account for rewards. The model was

statistically significant ($F = 6.137$, $p < 0.001$), suggesting that at least one predictor variable had a substantial influence. Financial incentives were found to be the best predictor of Green Savings Account adoption ($B = 0.368$, $p < 0.001$), indicating that individuals are more likely to adopt sustainable banking when real benefits are available. However, mobile banking use ($p = 0.135$) and perceived environmental impact ($p = 0.636$) were not significant predictors. This suggests that, while people appreciate the importance of mobile banking in promoting sustainability, their adoption of green financial solutions is mostly motivated by financial benefit rather than environmental concerns.

Since the p-value is significant ($p < 0.05$), we reject the null hypothesis (H_0) and accept the alternate hypothesis (H_1). This means that there is a significant correlation between mobile banking usage and CO₂ emissions. The positive correlation suggests that as mobile banking adoption increases, there is a reduction in CO₂ emissions due to decreased paper usage, fewer in-person banking visits, and lower energy consumption in traditional banking activities.

RESULTS AND DISCUSSION:

The study found a strong association between mobile banking usage and sustainability awareness, indicating that digital banking can be leveraged to promote sustainable financial behavior. However, financial incentives, such as cashback and tax benefits, emerged as the primary motivator for adopting green financial products, rather than environmental awareness alone. Age did not significantly impact sustainability perception, suggesting that sustainability initiatives should target all age groups equally. While minor gender-based differences were observed, they were not substantial enough to necessitate gender-specific strategies. Additionally, mobile banking usage contributes to CO₂ emission reduction by minimizing paper consumption and in-person bank visits. Given these findings, the study highlights the need for banks to integrate sustainability education with financial incentives to encourage meaningful behavioral change.

INTERPRETATION OF RESULTS

The hypothesis testing results provide insight into the association between mobile banking use and sustainable financial behavior. The findings suggest that financial incentives are the most important motivators for adopting green financial products, as people are more willing to engage in sustainability-driven banking when actual benefits are presented. On the other hand, mobile banking usage and environmental effect awareness alone have no substantial influence on the decision to adopt sustainable financial habits, implying that knowledge and convenience must be supplemented with financial incentives to achieve real behavioral change. These findings suggest that age has no major impact on sustainability perception, validating the idea that sustainability initiatives should target individuals of all ages equally. A statistically significant gender-based difference in sustainability perception was found, while the effect size was small, indicating that gender-neutral sustainability methods are still successful in promoting sustainable financial behavior.

The significant association between mobile banking use and sustainability awareness demonstrates digital banking's potential as an effective instrument for raising sustainability consciousness. Individuals who actively use mobile banking are more likely to be aware of sustainable financial solutions, emphasizing the necessity for banks to incorporate educational activities into their digital platforms. These findings have significant policy implications for financial institutions, policymakers, and environmental organizations. Banks should prioritize financial incentives as a primary method for increasing involvement in green financial products, given their proven success in influencing user behavior. Additionally, digital banking platforms should be used as instructional tools to ensure that users understand the significance of sustainability in responsible financial consumption. A collaborative approach that integrates financial incentives and

sustainability education into digital banking ecosystems is critical for developing a more sustainable financial future.

IMPLICATION OF THE STUDY:

The findings of this study have significant implications for financial institutions, policymakers, businesses, and consumers, highlighting the potential of mobile banking in promoting sustainable consumption in urban India.

1. Implications for Financial Institutions

- **Promoting Green Financial Products:** Banks and fintech companies can introduce and market sustainable financial products like Green Savings Accounts, ESG funds, and digital-only banking services to encourage eco-friendly financial behaviours.
- **Enhancing User Awareness:** Financial institutions can integrate sustainability education within mobile banking apps, providing insights on carbon footprints, paperless transactions, and responsible spending habits.
- **Incentive-Based Sustainability Programs:** Banks can implement cashback rewards, tax benefits, or higher interest rates for users engaging in sustainable financial activities such as paperless banking and green investments.

2. Implications for Policymakers

- **Regulatory Support for Sustainable Banking:** Policymakers can introduce incentive-driven regulations to encourage financial institutions to offer eco-friendly banking solutions and reward users for sustainable transactions.
- **Digital Payment and Sustainability Integration:** Encouraging government-backed initiatives that integrate mobile banking with sustainable spending habits can lead to long-term financial and environmental benefits.
- **Awareness Campaigns on Sustainable Finance:** Public-private partnerships can be leveraged to educate urban consumers on the role of mobile banking in reducing environmental impact and promoting responsible financial behaviour.

3. Implications for Businesses & E-Commerce

- **Encouraging Paperless Transactions:** Retailers and e-commerce platforms can collaborate with banks to promote digital receipts and eco-friendly payment options through mobile banking.
- **Integration of Green Financing:** Businesses can partner with banks to offer interest-free EMI schemes for eco-friendly products, encouraging sustainable consumer choices.

4. Implications for Consumers

- **Adoption of Sustainable Banking Practices:** Consumers can make conscious financial decisions by opting for digital statements, green investments, and digital payment solutions that reduce their carbon footprint.

- **Informed Financial Decisions:** With increased awareness through mobile banking platforms, users can better understand sustainable investment opportunities and integrate them into their financial planning.

RECOMMENDATIONS:

Future research should explore longitudinal studies to determine whether sustainability awareness and financial incentives lead to lasting changes in financial behavior. Comparative studies across different regions and income groups would provide insights into the varying impacts of mobile banking on sustainability. Additionally, behavioral research is needed to understand psychological factors influencing the adoption of green financial products. Evaluating the effectiveness of digital financial literacy programs can help assess how well sustainability education is integrated into mobile banking applications. Expanding the sample size to include more diverse populations will enhance the generalizability of findings. Lastly, further studies should assess the real-world impact of policy measures and bank-led sustainability initiatives to refine strategies for promoting environmentally responsible financial choices.

CONCLUSION:

Mobile banking in urban India demonstrates strong potential to encourage and support sustainable financial behaviour. The increasing use of digital platforms for banking reduces the need for paper, travel, and in-person transactions, which contributes positively to environmental goals. However, the study reveals that while many mobile banking users are aware of sustainability issues, this awareness does not always translate into action. Instead, practical motivators like financial incentives—such as cashback offers, rewards, and tax benefits—play a much more powerful role in influencing users to adopt green financial products. Furthermore, demographic factors like age and gender were found to have limited impact on sustainability perceptions, indicating that sustainability-focused strategies should be inclusive and targeted broadly, rather than tailored to specific groups. These findings highlight the importance of combining digital accessibility with meaningful incentives and education to drive real, long-term sustainable consumption behaviour.

Declaration of Conflicting Interests

The authors declare no potential conflicts of interest with respect to the research, authorship and publication of this article.

Funding

The author received no financial support for the research, authorship and publication of this article.

References

- [1] Nayal, A., & Sharma, P. (2020). An analysis of extent of use of online utility services in Punjab, India. *Current Journal of Applied*.
- [2] Tandan, P. (2025). *AI and Business Administration*. Scientific International Publishing House. ISBN: 978-93-6674-419-3. Dayananda Sagar Institutions.

- [3] Baxi, B., Chaurasiya, H., & Tiwari, S. (2025). Green banking: A timely imperative. *Emerging Frontiers in Management and Leadership*.
- [4] Wood, A., & Brathwaite, R. (2016). Exploring the use of digital currencies as a form of payment in Barbados. *Journal of Payments Strategy & Systems*.
- [5] Ray, A. (2023). To what extent does consumer awareness influence the preferences of individuals towards neo banks in the Indian banking sector? *International Journal of*.
- [6] Singh, N., Srivastava, S., & Sinha, N. (2017). Consumer preference and satisfaction of M-wallets: A study on North Indian consumers. *International Journal of Bank Marketing*.
- [7] Marcos, S., & Castrillo, M.-J. (2022). Sustainable finance in Europe. *Advances in Finance*.
- [8] Escrig-Olmedo, E., Muñoz-Torres, M., & Fernández-Izquierdo, M. A. (2013). Sustainable development and the financial system: Society's perceptions about socially responsible investing. *Business Strategy and the Environment*.
- [9] Mwangasu, G. W., Ngali, R., & Maina, K. E. (2022). Mobile banking services and financial inclusion in Taita Taveta County, Kenya. *International Journal of*.
- [10] Méndez-Suárez, M., Monfort, A., & Gallardo, F. (2020). Sustainable banking: New forms of investing under the umbrella of the 2030 agenda. *Sustainability*.
- [11] Soyupak, O., & İpek, H. (2025). Exploring user experience and usability of mobile and open banking for digital natives in Türkiye. *Qualitative Research in*.
- [12] Linciano, N., Soccorso, P., & Caratelli, M. (2020). Financial advisor-investor relationship: Mirroring survey on sustainability and investments. *Social Science Research*.
- [13] Tandan, P., & Makkalageri, S. (2024). Artificial intelligence and machine learning and its application in financial accounting. *Business and Economics Research Journal*.
- [14] Cardoso, A., Pereira, M., & Figueiredo, J. (2024). The influence of digital influencers on Generation Y's adoption of fintech banking services in Brazil. *Sustainability*.
- [15] O'Reilly, T. (2015). The effect of green marketing on consumer and corporate behaviour. *Environmental Science, Business*.
- [16] Faheem, M., Zahid, M., & Ali, S. E. A. (2024). Sustainable development goals, sustainable finance, and financial inclusion: An awareness perspective of business graduates. *Natural Resources Forum*.