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## Signaling Green: An Empirical Study of Green Loans Visibility in Private Sector Banks

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### Abstract

The vision of Visit Bharat requires a strong institutional framework to achieve sustainable development outcomes. Environmental sustainability is one of the three core pillars, as given by the Brundtland Report in 1987, to ensure a balanced relationship between nature and human activities. In contemporary times, visualising the rise in environmental sustainability concerns, the banking sector has assumed responsibility by ensuring mobilisation of requisite capital to finance sustainable projects. Despite this, the accessibility of green loans in Private Scheduled Commercial Banks (SCBs) remains largely overlooked. Based on signalling theory, the present study insists that banks should provide differentiated, solely branded green loans rather than associating them with conventional loans, which will send robust, reliable signals to borrowers, eventually increasing transparency and accessibility of green loans. The present study uses secondary data collected by the official website of RBI and all 21 private SCBs. The findings reveal that 14 banks out of 21 private SCBs (67%) provide green loans. While 7 banks (33%) do not provide recognisable green loans. Among these 14 banks (67%) that are providers, 7 banks (33%) offer green loans by relying on both government schemes and individual branding, 5 banks (24%) depend only on individual banners and 2 banks (10%) on government schemes only. This study shows that a large number of Indian private Banks have introduced green loan products under different banners. This increases their availability, transparency and accessibility by clearly indicating the effectiveness of green financing in India. However, an adroit analysis reveals certain shortcomings that need to be addressed to encourage green financing all across. Findings such as these assist in formulating effective regulations, enhancing banks' transparency in lending green loans and bringing to fore the contribution of the financial sector to green financing.

**Keywords:** Private Sector Banks, Green Loans, Sustainable Development, Green Finance, Government Schemes.

## **Introduction**

In the current era, countries around the globe are facing a problem of environmental degradation with respect to clean water, air and land, etc. However, initiatives taken to deal with the degradation are named under a blanket, termed “Sustainable Development”, for which finance is required. Banks are the key factors driving this transition by coming up with various innovative ideas in both developed and developing countries. In India, RBI and SEBI regulate all the green activities done by banks, in which green loans are one of main initiatives provided by banks.

In India, there are a total of 128 banks distributed in 8 categories (Public Sector Banks, Private Sector Banks, Local Area Banks, Small Finance Banks, Payments Bank, Financial Institutions, Regional Rural Banks and Foreign Banks), capturing different segments of the market. The 21 Private Banks also promote green loans by formulating specified segments on their official loans page, which increases their visibility among the borrowers and addresses the problem of information asymmetry. Hence, secondary sources have been used to assess the availability level of green loans, respectively, which will classify private banks as providers and non-providers of green loans, map the green loans product diversity, analyse the support system of the providing banks and measure the green signal scores by binary coding (1 and 0).

## **Literature Review**

Sustainable development has been gradually pushed by the global financial sector in which green banking is developed as an important instrument for aligning environmental considerations into banking operations, products and lending decisions (Panse & Sharma, 2923). In India, commercial banks are also mobilising funds into environmentally beneficial projects, due to which green banking has gained momentum in India as well (Devi & Uma, 2025; Upadhyay & Kurmi, 2025). Such innovations show an actual shift in channelisation of loans in which banks developed green loan products to integrate regulatory standards and borrowers’ demand with sustainable considerations (Jain, 2024).

However, green loans and various other green products will be highly effective when there is a specified green taxonomy having dedicated bodies to regulate the green economy, making it easier for borrowers, regulators and investors to check whether that particular product is “green” or not (Majdu, 2925). This raises a concern for India, where the regulatory framework for the green economy is still evolving. The modern banking system of India also requires disclosure and standard reporting mechanisms with green loan products to facilitate the evolution of green products and their impacts (Gupta & Parwej, 2024). Similarly, the sustainable reporting by banks must be done in such a way that it communicates the observable impact of the green lending activities for their estimated environmental impact (Patel & Desai, 2025).

To reduce information asymmetry and lack of transparency, the signalling theory expects the party with more information to send messages in such a way that they create symmetry in information, which should also be done in context of green loans that will increase the willingness of customers to engage in green products by making environment more credible (Berger, 2019). The green innovations done by

the company can be upgraded by clearly communicating their commitment towards environmental regulatory standards (Li et. al., 2025). Due to this, the banks will distinguish green loans from conventional loans, which will foster the trust of the customers and make green loans more credible, which will also develop their own recognisable identity (Lapinskienė et al., 2025).

Despite such theoretical efforts, the Indian Banking system still faces structural barriers such as uneven green banking adoption, lack of distinction of green loans and limited awareness among borrowers (Duddala & Srinivas, 2025). Indian renewable energy sector financing is mainly concentrated among large institutional borrowers, and retail borrowers are neglected (Perwez & Safiuddin, 2025). However, the banks are supported by government schemes mainly related to solar energy and electric vehicle financing, which increased the green lending activities and also the amount of available green products (Himashi, 2025). The banks must have clear environmental mandates, which will also make a distinction between the banks that provide green loans as a differentiated product from those that do not (Saxena & Fauzdar, 2024). The scale and scope of green loans with the involvement of the banks in sustainable lending are dependent upon the ownership of the bank (Zhou et. al., 2020).

The existing studies address the concepts of green banking, regulatory standards in green finance, necessity of green taxonomy and macro-level trends. The following research gaps were identified:

- The available literature examines the green banking products of some banks and provides a collective view on green loans without considering each one systematically.
- Prior studies mainly classify different sectors of banks (mainly Public vs Private), but none have classified them as providers or non-providers of green loans using Signalling Theory as the basis.
- There is a lack of studies available on the analysis of the green loans that are backed by government schemes or individual branding of the banks, due to which they cannot be examined on the basis of their proactive efforts and extent of support provided by the government.
- The Signalling Theory itself addresses the problem of information asymmetry. Despite its application in green finance to increase the transparency, awareness and make green instruments readily understandable by borrowers, this dimension is overlooked in Indian studies, through the question of whether a green loan provided by the banks is easily identifiable and accessible like conventional loans whenever a borrower visits a bank's website.

This study addresses these gaps by analysing 21 private SCBs to provide insights related to availability of green loans, government schemes support and individual branding. Hence, contributing to the section of specified green taxonomy, signalling theory and accessibility by the Indian private banking sector.

## Research Methodology

The study is based on secondary data, which is collected from the official website of respective private banks.<sup>1</sup> The study aims to examine the current accessibility of green loans. The analysis outlines these three insights:-

- **Availability of retail green loans:** It shows the basic appearance of green loan products offered by the banks. It also differentiates the banks that provide green loans from those that do not.
- **Government Policy Support:** It reflects the regulatory and institutional backing for the respective green loan, which is also mentioned in the prescribed green loans page of the banks.
- **Individual banners:** It shows proactive efforts done by banks on their own, whether supported by government schemes or not. It also includes the efforts done by banks after getting backed by a government scheme (for example, loan for buying solar equipment is an individual bank effort in the PM Surya Ghar Scheme, which is only for installation of solar rooftop systems).

In this study, only those banks that provide green loans explicitly and have dedicated green loan products like solar loans, electric vehicle loans and other such loans will be counted as prevailing providers of green loans.

On the other hand, all the banks that offer loans for sustainable purposes under the segment of standard/general loan categories only and do not have designated pages for green loans on their official platform, will not be considered as prevailing providers of green loans.

This is because many studies identified that the banks who have specified platforms for green loans are more likely to increase transparency by making information more readily available if we see them through the perspective of signaling theory and follow Green Loan Principles (GLPs), as they adhere to stricter norms regarding screening of a project and reporting criteria which may not apply to conventional loans thereby making it easier to establish green taxonomy (Berger, 2019; Zhou et. al., 2020; Patel & Desai, 2024; Lapinskienė et al., 2025; Majdu, 2025; Li et al., 2025).

In this study, the data is collected from individual banks' sites from December, 2025 to March, 2026. The data collection process involves navigating the loans section of the official platform of the respective private SCBs to identify loans with keywords such as "green", "environmental", "electric", "renewable", "sustainable" and "solar" to verify them for "individual initiatives" or "government schemes" and recording them in tabular format as binary codes. The study used a mixed-method approach as the qualitative data collected is displayed in a quantitative way. The data is analyzed using binary coding (providing "1" for "presence" and "0" for "absence") and thematic grouping (making groups of banks on the basis of the types of green loans provided).

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<sup>1</sup> List of 21 Scheduled Private Commercial Bank:  
<https://rbi.org.in/commonman/english/scripts/banksinindia.aspx>

## Results and Discussion

Nowadays, official online platforms of banks provide all the information regarding loan products and apply directly for them, acting as a primary contact between banks and customers. Hence, the accessibility of green loan products on these platforms is evidence of commitment of banks to green finance.

The research measures participation of banks in reducing information asymmetry of green loans by following the signalling theory. Table 1 is added, which shows detailed review derived from visibility (Availability of green loan), Subsidized (Support by the government scheme) and Branding (Individual banners dedicated to green loans used by the banks).

**Table 1: Green Loan Availability in Private SCBs**

S. No.	Name of bank	Loan Type*	A**	B**	C**	Signal Score (A+B+C)
1	Axis Bank	EV <sup>1</sup> , SF <sup>2</sup>	1	1	1	3
2	Bandhan Bank	- <sup>3</sup>	-	-	-	0
3	CSB Bank	- <sup>4</sup>	-	-	-	0
4	City Union Bank	- <sup>5</sup>	-	-	-	0
5	DCB Bank	- <sup>6</sup>	-	-	-	0
6	Dhanlaxmi Bank	SL <sup>7</sup>	1	-	1	2
7	Federal Bank	SBO <sup>8</sup>	1	-	1	2
8	HDFC Bank	EV <sup>9</sup> , SL <sup>10</sup>	1	1	1	3
9	ICICI Bank	EV <sup>11</sup> , SL <sup>12</sup>	1	1	1	3
10	Indusind Bank	EV <sup>13</sup> , SL <sup>14</sup>	1	1	1	3
11	IDFC First Bank	EV <sup>15</sup> , SL <sup>16</sup>	1	1	1	3
12	J&K Bank	EV <sup>17</sup> , SL <sup>18</sup>	1	1	1	3
13	Karnataka Bank	SL <sup>19</sup> (20)	1	1	-	2
14	Karur Vysya Bank	SF <sup>21</sup>	1	-	1	2
15	Kotak Mahindra Bank	SL <sup>22</sup>	1	1	-	2
16	Nainital Bank	SL <sup>23</sup>	1	-	1	2
17	RBL Bank	- <sup>24</sup>	-	-	-	0
18	South Indian Bank	- <sup>25</sup>	-	-	-	0
19	TamilNad Mercantile Bank	SBO <sup>26</sup>	1	-	1	2
20	Yes Bank	- <sup>27</sup>	-	-	-	0
21	IDBI Bank	SL <sup>28</sup>	1	1	1	3

\*Loan Type: EV = Electric Vehicle Loan, SL = Solar Loan, SF = Sustainable Farming, SBO = Sustainable Business Operations;  
 \*\*A = Green Loans Available, B = Linked Government Scheme, C= Individual Banner

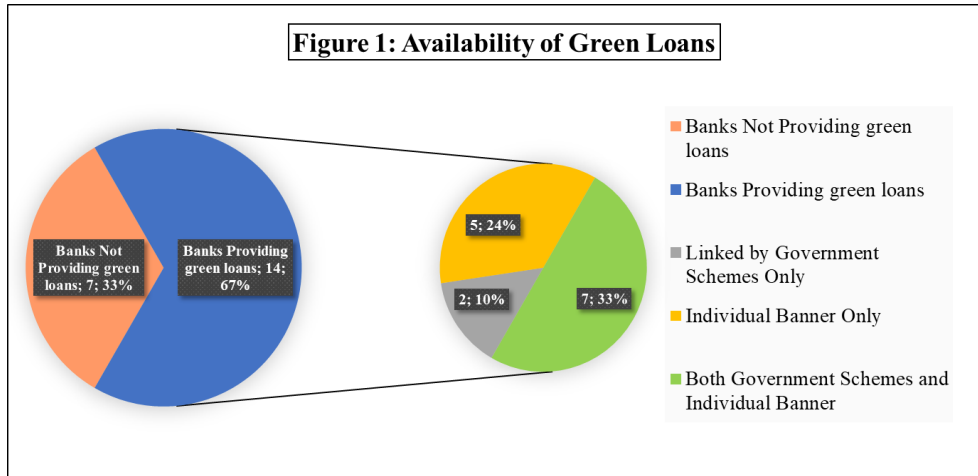
Note. From *Banks in India*, by Reserve Bank of India (n.d.). Retrieved from <https://www.rbi.org.in/commonman/english/scripts/BanksInIndia.aspx#IB>

**Table 2: Distribution in Private SCBs by Signal Score**

Signal Score	Number of Banks	Proportion of Banks (%)
3	7	33.33%
2	7	33.33%
0	7	33.33%
Total	21	100%

**Table 2** highlights absence of green loans in one-third of the private SCBs. While 7 private banks show the presence of all three - green loans, government schemes and individual banners.

So, the next figure is of the **availability of green loans** by Indian Banks:



**Figure 1: Overall availability of green loans in Private SCBs**

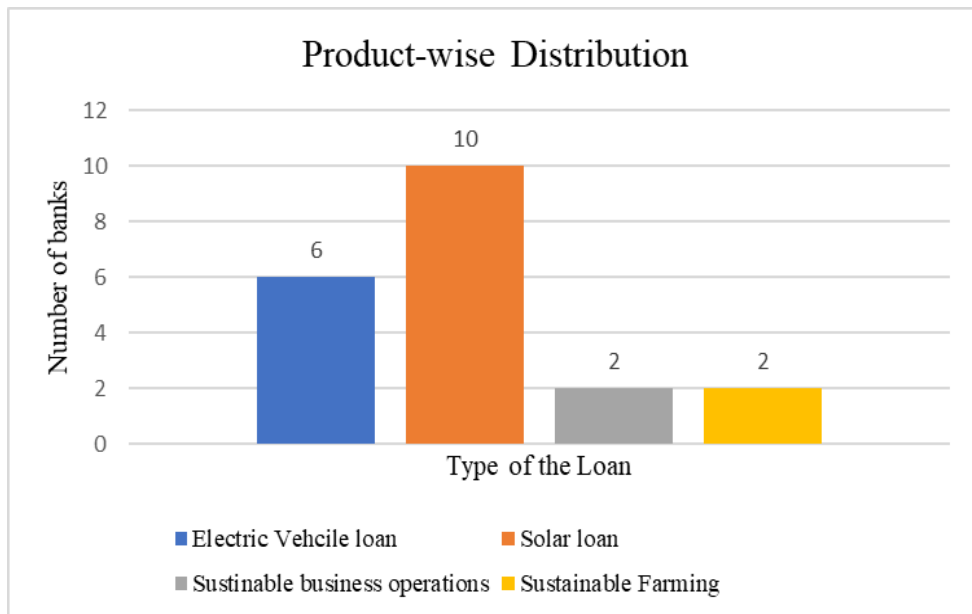
- As per **Figure 1**, nearly 67% of the private SCBs provide green loans as mentioned on their online platform, which highlights that green financing has evolved from being a niche to mainstream financial product. Whereas, 33% of the private banks still lack the availability of green loans.
- However, only 2 banks rely solely on government schemes to provide green loans, only 5 banks make provocative efforts by introducing their own banners, and total of 7 banks rely on both of them to make green loans available. This implies that most of the banks are limited to their own banners, showing lack of push by government schemes, which can further increase the availability of green loans by the banks.
- Moreover, from the viewpoint of signalling theory, **Figure 1** also highlights that a total of 7 private SCBs are unable to assign a dedicated page to green loans, due to which the potential borrowers of green loans are unable to reach them.

### Conclusion & Recommendation

The findings highlight that the majority of private banks are into green financing, as 67% of them provide green loans, while 33% still do not provide such loans, implying that these banks are either of small size or have less capital size for proactive efforts to be done in Green loans. Related studies also highlight that sustainable banking practices are in nascent stage and small private sector banks

underperform in sustainable banking practices (Kumar & Prakash, 2018)<sup>1</sup>. The private banks that do not provide green loans are Bandhan Bank, City Union Bank, DCB Bank, RBL Bank and South Indian Banks are also poor performers in sustainable banking practices as per prevailing studies (Kumar & Prakash, 2018)<sup>2</sup>. This highlights that the main challenge is at institutional-level which leads to poor green banking activities and less accessibility of green loans at the same time. However, Yes Bank is a top performer in sustainable banking practices, but does not provide differentiated green loans (Kumar & Prakash, 2018). This implies that there is a contrast observed when it comes to ESG practices done by the top-ranked banks and providing green loans. Hence, this shows that accessibility of green loans is a different dimension from green banking activities and ESG practices done by the banks, which is missing in even good banks. This highlights a gap in the internal sustainable performance of banks and external sustainability i.e its commitment to offer specified green loans.

Only 2 private banks (approx 10%) provide green loans by relying only on government schemes, and 5 (approx 24%) provide green loans by relying on individual schemes only. Therefore, the proactive efforts done by banks are more than government support. Hence, government intervention should be increased to make green loans available to banks that are non-providers of green loans. These findings are consistent with the results reported by Rahman et. al., 2023 conducted an analysis of green banking in India and Bangladesh, highlighting that in developing countries, governments should take a lead in such programs that will allow banks to offer various eco-friendly products to attract customers to sustainable options.



**Figure 2: Product-Wise Distribution of Green Loans**

<sup>1</sup> <https://www.emerald.com/sri/article/15/5/689/455652/Developing-a-framework-for-assessing-sustainable>

Most of the green loans provided by private banks only concentrate on solar loans (such as Karnataka Bank, J&K Bank and IndusInd Bank etc.) and on Electric Vehicle Loans (such as Axis Bank, HDFC Bank and ICICI Bank etc.) while there are other scope of green loans such as Green Home Loan and Green Personal Loan (loan for buying energy-efficient financing) left uncovered in the market. This is also highlighted in existing literature that adoption of green banking activities is still fragmented by only focusing on solar panels and electric vehicles (Sharma & Choubey, 2021)<sup>1</sup>. Hence, they must also focus on other sources such as Green Home Loan and Green Personal Loan (loan for buying energy-efficient financing), etc. This will increase their scope of green loan accessibility and create a holistic green eco-system of green loans.

Therefore, the findings imply that RBI must introduce guidelines for disclosure of each type of green loan, which will set a minimum standard for banks, so that they will not concentrate only on two types of green loans (Solar loans and Electric Vehicle loans) and disclose all of them in a systematic manner as well. After scrutinizing the official websites of 21 private banks, it was observed that none of them has a separate “green” or “sustainability” section. The author also observed the lack of a “Specified Green Dashboard” despite the presence of differentiated green loans. The results like these reveal the need to have a separate “Green finance” or “sustainability” section on the bank’s website, which will make green loans more readily available for customers. By a “Specified Green Dashboard”, banks will also be able to work more on promoting green loans, either by showing incentives provided under them or glorifying the environmental aspect of green loans. This will increase the awareness level of green loans and also the number of customers opting for them.

### Limitations and Future Directions

- The study is limited to 21 Private SCBs, excluding public sector banks, regional rural banks and other categories too. Further studies involving more banks are hence desirable.
- Other sector banks can be analysed, and a comparative analysis can be done between the sectors. It will provide the overall accessibility of green loans in the whole banking sector.
- With the signalling theory incorporated in green loans, subsequent studies may provide a clear impact of green-washing, mainly in the banking sector and also record the environmental impact of green loans.

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