CHAPTER III

RESEARCH METHODOLOGY

Research methodology is the set of logical and systematic methods that researchers use to gather and analyze data in order to answer various research questions (Pandey & Pandey, 2021). Choosing the right research methodology is crucial in ensuring that each aspect is addressed properly and that there is little to no misrepresentation or incomplete information which could lead to significant elements that might have been important for providing a comprehensive view of the research problem being left out. Moreover, deciding on a research methodology is pivotal in determining the reliability and validity of the obtained solution. Research methods are the foundation that holds the whole research process. It includes the systematic framework and principles that govern the research process along with methods, techniques, and tools that are accurately chosen to facilitate data collection, analysis, and interpretation. Their role is crucial in keeping the research findings reliable and valid, ensuring that research remains relevant to its overarching objectives and has a solid basis for conclusions. This chapter will reveal an in-depth explanation of the methods used for the study in terms of research paradigm, research approach, reasoning approach, research design, and research strategy. Next, details about the population, sample size, and sampling methods will be shared along with the questionnaire development process. Besides, the conceptual framework and the hypotheses based on the framework that will be tested here to be discussed in great depth. Finally, different moral principles that were followed to make sure that no participant was harmed during the procedure will be covered.

3.1 Justification for the paradigm and methodology

3.1.1 Research Philosophy

Positivism is a paradigm for research, which is based on the idea that empirical observations and measurable events should be considered as primary sources of knowledge. Objectivity, quantification, and use of scientific methods to investigate and explain phenomena are among the key features highlighted by positivism. Positivism's dependency on a structured format for data enables extensive analysis and thus the research gets a higher potential for making a significant contribution to the understanding of the Adoption of Sustainability in Indian banks issue (Laskowska, A. 2018). Researchers who use a positive approach endeavor to find causal relationships through intensive data collection and data analysis. This model is usually linked to deductive reasoning, in which hypotheses are developed and verified through quantitative data. Empirical research is generalization-oriented and it tries to find universal laws or principles that govern the phenomena under study (Fraccascia, 2018).

Sustainability, by its complex nature, demands a rigorous and empirical evaluation, and positivism, which depends on complex data and quantifiable indicators, is the most appropriate framework for this purpose. It aids in gathering data that can be analysed and compared in a systematic manner, thus allowing a thorough evaluation of sustainability practices in different banks. Moreover, a study that is focused on discovering causal relationships and evaluating the far-reaching effects of the implementation of sustainability, demands a method which can deal with the complexity of causality. Positivism is perfect in this respect as it offers a well-organized framework through which researchers can test models and make generalisable inferences from empirical data (Hossain, 2020). Such generalization is particularly crucial for the Indian banking sector where, by grasping the wider effects of eco-friendly practices, policy alterations and interventions throughout the industry may become foreseeable. Additionally, the issue of data availability is one of the most important aspects in this case and positivism fit nicely into the context of the banking industry.

Empirical research is grounded in structured and quantitative data which is quite straightforward to obtain from banking performance and sustainability reporting. The availability of data significantly eases the empirical study of the adoption of sustainability, thus paving the way for a thorough and detailed understanding of the phenomenon.

Moreover, apart from these facets, the main goal of the study is to provide evidence-based policy proposals that would foster the implementation of sustainability measures in the banking sector while also stressing the aspect of realization. Positivism, through its characteristic focus on empirical data and quantitative measures, offers a firm ground for the generation of information, which can then be utilized for making policy decisions. It is instrumental in fleshing out data-based suggestions, thereby giving them substance and trustworthiness, at the same time, ensuring that the policy interventions are well-informed and accurately targeted (Jayadatta, 2017).

3.1.2 Research Approach

In line with the positivist paradigm, a Quantitative research approach, which is in line with the ideas of Bauer et al. (2021) and Ahmad et al. (2019), has been chosen for the present investigation. The quantitative research approach involves primary data collection and the analysis from objectively conducted surveys and questionnaires. The core feature of quantitative study is that it results in an close-ended conclusion but presents specific elements that can be examined using statistical tools to extract insightful information. Quantitative research helps in the analysis of objective data to uncover trends and relationships through statistical inference. Using this method researchers are able to better understand what drives customers' intention to adopt Sustainable banking services at a national level. Additionally, quantitative research can also capture the views of those who are in favor as well as those who are against and thus provide unbiased evidence, hence, it is more appropriate than the qualitative research approach and open-ended questions.

The most significant rationale behind the decision to use a quantitative approach is probably the aim of the study - to measure the level and impact of sustainability adoption in the banking sector in an unbiased way (Mitra, 2019). As a complex system, sustainability needs to be assessed in a rigorous and empirical way. Quantitative research is the best choice here as it involves structured data collection, numerical metrics, and statistical analysis. The use of these quantitative procedures makes it possible to carry out the systematic measurement of sustainability practices, thus different banks can evaluate and quantify their level, importance, and impact. This research is primarily focused on understanding the cause-and-effect relationships and evaluating the far-reaching consequences of the sustainability adoption in the Indian banking sector. The employment of quantitative research is the most appropriate in this case. It offers various methods and

instruments to investigate the causal relationships by looking at the correlations, associations, and the statistical significance. The generalizability of the findings is equally significant.

This abundance of data ensures that researchers are in a good position to undertake a challenging research project that requires detailed analysis and interpretation (Nizam, 2019).

The use of quantitative research methods is guided by logic rather than chance and it is in line with the objectives of the study to focus on objective measurement, causality exploration, and generalizability. Quantitative research offers the tools and methodologies needed to conduct a thorough study on the Adoption of Sustainability in the Indian banking sector. This strategy, through the use of well-organized data and statistical analysis, makes it possible for research to draw evidence-based conclusions that contribute to policy recommendations and efficiently communicate to sustainable banking strategies. By this, it helps in the ongoing banking sector revolution towards a greener and socially beneficial future.

3.2 **Research Design**

Descriptive research will primarily help the researchers to understand and to establish an accurate account of phenomena that are not necessarily to be involved in cause-and-effect relationship or explanation of why this kind of patterns exists. usually, it focuses on collecting quantitative data that can be gotten from surveys, observations, or content analysis that is used to produce a general picture of the current state. The goal of descriptive research is accomplished by using different measurement tools to characterise phenomena, identify trends, or summarise data. The research design, however, is not equipped to probe the ground reasons behind the trends or to determine the contributing factors.

Explanatory research locates cause-and-effect relationships and provides reasons why certain phenomena take place (Nuryakin,2020). Such a research plan normally entails the process of hypothesis testing and the use of statistical tools for the identification of the relations among variables. Explanatory research is a good choice when a research team is eager to know more about the underlying causes that have led to the phenomena they have observed. Descriptive research designs equip researchers with the means to gain a

profound and detailed understanding of these intricate dynamics. The paper argues that the research goes beyond mere descriptions, which helps to uncover the subtle and multifaceted aspects that characterize sustainable banking practices. Based on such an argument, the current study has adopted an exploratory research design to address the research question.

An Explanatory research design has been adopted in the current study based on the argument presented by Asenahabi (2021) and Toyon (2019). Explanatory research design aids in unravelling why a particular phenomenon occurs, or here, why bankers and customers are willing to adopt or not adopt Sustainable banking practices in their daily transactions. Explanatory research is also conducted when limited research information is available regarding the topic, which also suits the aspect of the current study. As there is limited information from prior studies regarding how bankers and customers utilise Sustainable banking practices and the difference between public and private banking institutions, this research design can be considered suitable for the current study. Additionally, an explanatory research design also aids in conducting a "Cause and effect" analysis, which will help the present study to understand how awareness and other aspects like Perceived Ease of Use and Perceived Usefulness can influence Actual Use, which will aid in answering the research questions.

For this study on the adoption of sustainability in the Indian banking sector, an explanatory research paradigm was chosen for several compelling reasons (Park, 2020). The explanatory research paradigm fits best as it locates direct relationships between causes and effects as well as identifies the underlying mechanisms and variables that determine sustainability practices in banks (Prasanth, 2018). This is a way of explaining why banks pick certain sustainable practices and hence gain important insights into the motivations of these decisions. Next, implementing Sustainability in the banking sector is a multifaceted issue that is affected by various factors. Moreover, the use of explanatory research design is instrumental in line with the study's ultimate goal of providing a solid foundation to the drafting of policy recommendations aimed at the promotion of Sustainability in the banking sector. It enables investigators to pinpoint the main reasons for the adoption of green measures and thus facilitate the evaluation of their significance. Lastly, the predictive validity is of great importance. Typically, this research approach is associated with the testing of hypotheses and the establishment of cause-and-effect

relationships, thereby leading to the provision of the most relevant information regarding how changes in certain variables can bring about specific results (Rehman, 2021).

3.2.1 Research Locale

The research concentrates on the implementation of sustainable measures within Indian banks, the thriving and vital part of the nation's financial system. When India, being one of the biggest and fastest-growing economies in the world, is experiencing a complete change in corporate and financial practices, the focus on sustainability is becoming more and more evident. Being the backbone of the financial system, the banking sector is the mainstay that determines the economic policies, has the power to influence the businesses, and by its very nature, adds to the well-being of the society. The Indian banking sector has the essence of the intermediation bank of the economy which consists of institutions like public-sector banks, private-sector banks, cooperative banks, and foreign banks. They provide economic activities across various sectors with the funds needed through financial intermediation. The question is are banks merely the guardians of financial assets, or are they the powerhouses which synergistically create the path to the country's economic development? The answer is given by their strategic position. Therefore, their sustainability initiatives impact the ESG factors, thus, Environmental, Social, and Governance (ESG) considerations, becoming the biggest beneficiaries of the ripple effect.

This research is based on the whole of India, where all 28 states are involved in the study, each state was selected to thoroughly study the Sustainable banking practices. Moreover, 1150 customers and 850 bankers were taken from different places, and in order to ensure the good representation of each of the genders in the study, both male and female members were combined. These questionnaires which were given to bank managers and bank customers from July 2023 to August 2024 both online and in person aimed at the measurement of the adoption of sustainable practices in the banks across India.

However, the main data collection method was through virtual communication mediums like email to reduce the time constraints involved in physically surveying such an extensive population. The study was conducted in the months of August and September 2023. Two months have been selected for the study to ensure accurate and sufficient data is collected from members throughout the country. The entire survey was conducted in English to account for differences in traditional languages. At the same time, information regarding banking institutions was kept from all members to reduce misrepresentation of

data. The selection of such an extensive database is based on the attribute that will provide a clear idea regarding different aspects of adopting Sustainable banking practices in other institutions. A larger sample size will also ensure that biases are minimised, and each bank is considered adequately.

3.2.2 Population of the study

The population for the current study has been selected as all banking employees and customers of that banking institution. Ten major public and private banking institutions have been selected based on market capitalisation, business volume, and presence of branches throughout the country. Three aspects have been combined to establish major banking institutions that will represent the state of the banking system throughout the economy. For this aspect, the entire customer base throughout India has been selected as the population for each banking institution. From the chosen population above, sample respondents were selected, of which 850 bank branches (bank managers), and 1150 customers were selected throughout the country. (Table No: 3.1, Table No: 3.2, and Table No:3)

It should be noted that such a sample has been chosen to represent the opinions of all bank customers and bank branches in different banking institutions. The primary focus of the researcher was to collect data from samples from other banking institutions across various states in an equal manner; however, a specific deviation has been noted due to the presence of more banking institutions in specific regions and more customers at particular institutions in each area. To account for such differences, slight variations exist in each bank and region's total sample count.

Table No. 3.1 Top 10 Banks in India selected by their Market CAP

Sector	Banks	Market Capitalisation (In lakh crore INR)
Public Sector	State Bank of India	7.5
	Bank of Baroda	1.3
	Punjab National Bank	1.2
	Canara Bank	0.94
	Indian Overseas Bank	1.0
Private Sector	HDFC	13.8
	ICICI	8.9
	Axis	3.6
	Kotak Mahindra	3.5
	IndusInd	0.82

Source: Annual reports FY 2022-’23 and forbesIndia.com

Table No. 3.2: Population- Respondents from Bank branches

Bank	Number of Branches (28 states)
State Bank of India	28,446
Punjab National Bank	12,123
Bank of Baroda	9,464
Canara Bank	11,171
Indian Overseas Bank	3,511
HDFC	9,558
ICICI	6,537
Kotak Mahindra	2,195
Axis	5,582
IndusInd	2,087
	90,674

Source: Annual report FY 2022-'23

Table No:3.3 Population- Respondents from Bank customers

Bank	Number of Customers (in Cr.)
State Bank of India	45.0
Punjab National Bank	18.0
Bank of Baroda	13.2
Canara Bank	10.8
Indian Overseas Bank	3.5
HDFC	6.8
ICICI	5.2
Kotak Mahindra	2.7
Axis	0.9
IndusInd	2.5
	108.6

Source: Annual report FY **2022-'23**

3.2.3 Sampling technique

The sample sizes for the current study have been selected using a proportionate stratified sampling technique method. Proportionate stratified sampling is a type of probability sampling in which the sample is divided into subgroups (strata), and the sample size from each stratum is proportional to the stratum's size in the overall population. This sampling process ensures that the selection of elements is proportional to their prevalence in each stratum (Wiradendi et al., 2020; Tulu et al., 2020). This approach aims to maintain the representative distribution of subgroups, contributing to a more accurate refelction of the population's characteristics in the final sample; hence; it has been considered appropriate to be adopted in the current study. Ten banks and 28 states were selected to have a sample of banks.

The respondents from banks are the managerial-level employees. Each state is represented in the final sample (important for national generalizability). To ensure statistical validity and national representativeness, Cochran's formula was applied to determine the required sample size based on the total number of bank branches (for an institutional perspective) and the total number of bank customers (for an individual perspective). A final sample size of 850 banks and 1150 customers was achieved using proportionate stratified sampling across all Indian states, ensuring adequate representation from each region." Only operating branches are considered as of 2022-'23 were considered. Banking companies that are not traded publicly are excluded.

Initially, the bank branchesand the customers in banking institutions are selected. After this, all members are divided into different subgroups based on location in the country and the bank where the customer has an account or the manager works. For managers, each manager works in a specific banking institution; however, for customers, those customers who have primary tabs in a particular banking institution have been selected. Members who have two or more accounts in different institutions with regular usage are not chosen to reduce misinformation, which may happen due to customers using multiple services from multiple banking institutions simultaneously. The stratified random sampling strategy has been adopted to ensure that random selection occurs. Still, at the same time, it ensures that different bank institutions throughout the country and other customers are covered. In the original aspect, random sampling may have led to limited representation for one institution or negligible representation in a specific area.

Using Cochran's Formula for a Finite population:

$$n_0 = \frac{z^2 \cdot p \cdot (1-p)}{e^2}$$

$$n = \frac{n_0}{1 + \frac{n_0 - 1}{N}}$$

Table No:3.4 Calculation of sample size

Calculation of sample size		**Bank branches**	**Customers**
Step 1: Calculation of sample size using Cochran's formula for ideal sample size			
z	Z value extracted from the z-table	1.96 Table value- 95% confidence interval	1.96 Table value- 95% confidence interval
P	Assumed proportion (population proportion)	0.5 is for 50%	0.5 is for 50%
e	Margin of error	**0.0335 (3.35% margin of error)**	0.03 (3 % margin of error)
n_0	Cochran's sample size was computed using the formula for the ideal sample size.		
$n_0 = \frac{z^2 \cdot p \cdot (1-p)}{e^2}$		855.75	**1067.1**
Step 2: Calculation of sample size using Cochran's modified formula for a finite population			
N	The size of the population	90,674	108,60,00,000 (1.086 billion)
$n = \frac{n_0}{1 + \frac{n_0 - 1}{N}}$		**847.5 Final sample size=848**	**1067**

By adjusting the z score and margin of error according to the population size in the Cochran formula, the sample size mentioned is obtained approximately. The study's data originated from bankers and customers of the same branch. This measurement guarantees the conformity of their shared contextual comprehension and working surroundings, as both collectives are in the same institutional setting. The study, by homing in on the same branch, furnishes a reliable means of contrasting the viewpoints of bankers and customers, thereby permitting accurate and profound insight into their opinions and experiences.

Sample sizes for the study were obtained through the use of Cochran's formula for finite populations with proportionate stratified sampling technique, which ensures representative samples of both the bankers and customers. The approach was implemented to ensure that the final sample subgroups were correctly represented while at the same time the populations of a large but finite nature were adjusted.

Cochran's formula is aimed at determining sample sizes for finite populations through consideration of factors like population size (N), confidence level (indicated by the z-score), margin of error (ε), and the estimated proportion of the population exhibiting the characteristic of interest (p□). The process achieves sample sizes that are statistically valid and at the same time pragmatically feasible.

In case of bankers, Cochran's formula eventuated an approximate sample size of 850 with a population size of 99,392, an estimated proportion (p□) of 93 percent, a margin of error of 2 percent, and a z-score of 2.33 (corresponding to a 98% confidence interval). For customers with a population of 1,204,000,000, an assumed proportion of 90 percent, the same margin of error of 2 percent, and a z-score of 2.33, Cochran's formula yielded a sample size of around 1,150. The sample sizes were calculated to guarantee statistically significant and reflective study results of each subgroup's characteristics.

In order to carry out the sample sizes that are illustrated, the proportionate stratified sampling technique was used by the study. This method divided the total populations of bankers and customers into distinct strata based on relevant characteristics such as location (states) and banking institution. The proportionate stratified sampling technique determined the number of participants to be selected from each subgroup in proportion to its representation within the population. For example, the study sample

consisted of 10 banks across 28 states, with participants distributed according to each bank and states' share in the total population. Selecting participants within each stratum thus minimized selection bias and ensured that each subgroup within the banker and customer populations was fairly represented. The method also addressed the geographic and institutional diversity, which facilitated the final sample to reflect differences across various regions and types of banks. The use of a proportionate stratified sampling technique within each stratum prevented the study from potentially over-representing a single institution or region, which could have been the case with simple random sampling.

3.2.4 Sampling design

The study discovered that the banking industry consists of different types of players, public and private ones, who are located in several Indian states. In order to get the opinions of customers and bank branches (bank managers), a proportionate stratified sampling technique will be employed.

The proposed study plans to gather data from 1,150 customers and 850 bank branches (bank managers), thus creating a sample of 2,000 respondents. The sample size is aimed at generating a sufficiently large dataset that would be able to yield statistically significant results and allow for a meaningful analysis. It considers the requirement for the representation of different types of banks (public and private) and the geographic diversity (28 states), thus making it possible to generalize the results for the customer and bank manager populations. By choosing five public sector banks and five private sector banks from 28 states, the Indian banking sector aims to capture the most varied perspectives of the banking sector. The selection of public and private banking segments ensures their full representation and also considers the geographic diversity of different states' unique characteristics and customer bases. The population, sampling method, and study scale were all decisions that were made with great precision to ensure a comprehensive and representative data set. This study aims to target customers and bank branchesfrom different types of banks and states to capture various perspectives on adopting Sustainability in the Indian banking sector.

3.2.5 Sample size

The table No: 3.5 and 3.6 represent the sample size for the study

Table No: 3.5 Determination of Sample Size (Respondents from Bank)

Bank	Number of Branches	Proposed Sample Size (28446/90674) *848	Resulted Sample size
State Bank of India	28,446	266	206
Punjab National Bank	12,123	113	112
Bank of Baroda	9,464	89	84
Canara Bank	11,171	104	84
Indian Overseas Bank	3,511	33	56
HDFC	9,558	89	84
ICICI	6,537	61	56
Axis	5,582	52	56
Kotak Mahindra	2,195	21	56
IndusInd	2,087	20	56
Total	**90,674**	**848**	**850**

Source: Secondary data

Table No. 3.6 Determination of Sample Size (Respondents from Bank customers)

Bank	Number of Customers (in Cr.)	Proposed Sample size (68000000/108,000,000)*1150	Resulted Sample size
State Bank of India	45.0	442	394
Punjab National Bank	18.0	117	168
Bank of Baroda	13.2	130	140
Canara Bank	10.8	106	112
Indian Overseas Bank	3.5	34	56
HDFC	6.8	67	56
ICICI	5.2	51	56
Axis	0.9	9	56
Kotak Mahindra	2.7	27	56
IndusInd	2.5	24	38
	108.6	**1007**	**1150**

Source: Secondary data

3.2.6 Research Strategy and Data Collection Method:

Data collection is vital to any research effort as it serves as the base of research findings and conclusions. Data collection assist researchers to gather empirical evidence, test hypotheses, or draw meaningful insights. Effective data collection, in the case of this study, is crucial in a fair measurement of the extent and impact of the sustainability adoption in the Indian banking industry, thus enabling the facilitation of the analysis of evidence-based research questions.

The present research is dependent on primary quantitative data. A survey is an effective tool as per the argument put forward by Nayak Narayan (2019) and Ahmed et al. (2021). Surveys have been regarded as a research strategy and an efficient tool to collect data in comparison with other tools.

This method entails the creation of a structured questionnaire to gather data regarding sustainability practices, banking operations, and other relevant variables. Respondents, typically professionals in the Indian banking sector, will provide quantitative answers to the survey questions (O'Sullivan, 2015). The survey is considered less time-consuming and more straightforward to collect data than quantitative interviews over a larger population in the current study, consisting of bank branchesand customers throughout the country.

Further, a survey also allows for the collection of detailed and systematic data in objective data, which is considered more efficient than an accurate questionnaire or interview, which is not considered a feasible option for such a large population. It should be noted that, for a similar reason, the qualitative interview has not been selected since such would not allow data collection from a larger population. A larger population was considered essential for the current study, as banking institutions have been established throughout the country, with several branches from each institution. Adopting a method would make the entire research process both costly and time-consuming; hence, survey has been considered an adequate tool.

The choice of a primary data collection single strategy based on a quantitative survey instrument derived from standardized scales is a well-established methodological rigor and aligns with the research objectives. By employing standardized questions with predetermined response options, limits the freedom of interpretation of the answers given

by the respondents and increases the reliability of the data on sustainability adoption, it ensures accuracy and objectivity. The focus of the study on measuring the extent and the impact of sustainability adoption in the Indian banking sector is in complete agreement with the quantitative measurement capabilities of this approach, thus allowing for in-depth statistical analysis and the creation of measurable indicators.

The survey's efficiency and scalability are extremely valuable as it allows data to be gathered from a large number of respondents in a short period of time, thus increasing the study's statistical power and the possibility of findings' generalization to the whole Indian banking sector. Moreover, the quantitative survey's ability to provide comparable data is essential for the comparative study, as it facilitates the collection of data in a uniform manner and the recognition of differences in the implementation of sustainability practices in various banks. Finally, using standard scales in survey development provides a recognized and validated framework for measuring variables. It ensure that the data collected is reliable and valid, thus, the findings of the study become more credible. To state briefly, this specific data collection method based on methodological principles serves as a main factor for the study to be precise, quantifiable, efficient, scalable, and capable of comparative analyses. With such a method, the research is able to systematically collect empirical evidence to show how far and what the effects of the incorporation of sustainability in the Indian banking sector are, thereby, making a significant contribution towards a powerful and evidence-based analysis of the research questions.

3.2.7 Administration of instruments or procedures for data collection

Data for the current study have been collected with the aid of a survey questionnaire instrument, which is based on tools and critical aspects covered in prior studies conducted by Puri & Garg (2023), Aracil et al. (2021), Al-Amin et al. (2019), and Gupta et al. (2023). The questionnaire has been developed primarily as a 5-point Likert scale based on the argument presented by Taherdoost (2019). Five response options are provided to the respondents, from solid disagreement to neutral opinion to substantial agreement. Such a questionnaire pattern has been selected to allow respondents to present their views while having objective responses that can be used to collect and analyse data according to research objectives.

The development of the questionnaire for this study involved a phased approach, which was based on a thorough review of the literature. This review covered peer reviewed articles, academic research, sector reports, and survey items. Based on this, the researcher identified several factors such as Perceived Usefulness, Perceived Ease of Use, sustainability practices, and demographic variables, to fit in with the theoretical framework of the Technology Acceptance Model (TAM) and to provide answers to the research questions.

The questionnaires were sufficiently detailed to capture the perceptions, attitudes, and behaviours of the respondents concerning the implementation of sustainability in Indian banks through scaling, existing constructs, and newly created elements wherever necessary. To ensure content validity, expert committees from the fields of sustainability, banking, and survey methodology thoroughly deliberated the survey items and provided their comments and suggestions for refining the question wording and improving question clarity.

Two well-structured questionnaires using a Likert scale are prepared. One is to get the perception of the Bank (institutional perspective) , and the other is for the bank customers (individual perspective). Relevant literature was gathered regarding the constructs in the proposed model -Perceived ease of use, Perceived usefulness and Perceived environmental commitment and demographic profile of the respondents were included in the questionnaire.

The questionnaires were validated by five experts, consisting of 2 Academic experts from the Higher education industry (Professors who have expertise in the field of sustainable banking), 2 managerial-level employees from Banks (one from a public sector bank and one from a private sector bank) and one statistical analyst (who possesses a PhD in statistics), suggested that the questionnaires are reliable and the data collected can be utilised to answer the Research questions and examine the Hypothesis.

A pilot study, with about hundred respondents, including bank employees and customers, was conducted before the main data collection. Their primary objectives were to assess the clarity, understandability, and feasibility of the questions. The questionnaire was upgraded because of the feedback to the pilot study which emphasized the rephrasing and simplifying of questions and the confirmation of the questionnaire's manageable length and methods (Raut, 2017). These questionnaires were administered among the bank

managers and bank customers to measure the adoption of sustainability in the banks across India from July 2023 to August 2024, both online and in person. The final data collection activity has been spread over one year, primarily to have sufficient time to collect data from managers and customers. Having almost a year for the survey has allowed for data collection and provided respondents with sufficient time (5-7 days) to complete the survey. A longer timeframe is also permitted for selecting different respondents from each group if the primary respondent could not complete the survey within the provided timeframe or provided incomplete survey results. Additionally, customers with primary or same-frequency bank accounts in two major banking institutions were excluded. This led to the further need to identify and collect data from other customers. Thus, proper steps have been taken to ensure that sample respondents represent the opinion of the population being considered for the study.

3.2.8 Content Validity

Content validity was maintained through an extensive review of previous literature related to sustainable banking andtechnology adoption. Measurement items were taken from already established and confirmed scales that had been used in previous studies to ensure proper coverage of the constructs. The questionnaire was reviewed by subject experts and academicians to get their opinion on item relevance, clarity, and suitability of the context. With their input, small changes were made to the wording and more clarity was achieved by removing the ambiguity. The pilot study also helped to clarify the instrument and make it suitable for the target respondents.

3.2.9 Pilot study

Before the primary data collection phase, a pilot study was conducted to evaluate the reliability, validity, appropriateness, question clarity, understandability, feasibility, time taken to answer the questionnaire and confirm the questionnaire's manageable length. The pre-testing was performed using data collected from one hundred respondents (50 bank branchesand 50 customers). The pilot study led to improvements to the questionnaire, confirming to rephrase and simplify questions, to provide explanations in the questionnaire for the easy understanding of all the customers, to add additional questions developed to get a more layered idea for the research, and to plan the data collection period for the main study.

Pilot study results revealed that biodegradable cards have maximum implementation as a primary Sustainable banking product, followed by Green Channel counter, green home loans, internet banking and telebanking services. A T-test (t351.000= 4.979, $p < .001$) was conducted, validating the Hypothesis over a smaller population that a significant difference exists among Sustainable banking practices adopted by private and public sector banks. Similarly, the analysis of the data through one-way ANOVA ($F= 33.480$, $p < .05$, result for age) and ($F= 15.052$, $p < .05$, result for occupation group), as well as the Tukey post-hoc test, revealed that age, as well as occupation, are two major variables which do influence customer preference (both in the form of awareness as well as usage) towards the Adoption of different Sustainable banking services and products. Frequency tests also suggested that the ability to pay bills online, online fund transfer, and other operations like viewing statements anytime are major factors influencing the adoption of Sustainable banking practices.

Additionally, the pilot study gave very good and detailed feedback about the understanding and clarity of the survey items. Those who took the survey acknowledged that easy to understand and clear was the language used in the questionnaire, so that less misunderstanding or confusion could be encountered. This clarity is extremely significant since it makes sure that the respondents have the capacity to offer accurate and straightforward answers to the survey questions, which improves the quality of the data collected.

The practicability of the survey was another point that had been thoroughly looked into in the pilot study. Participants mentioned that the survey was short and that they could handle it well, with a reasonable length that did not take up their time or distract them (RBI, 2017). This statement was very helpful in ensuring that the survey could be done efficiently with a large sample of customers and bank brancheswithout the quality of responses or the overall research experience being affected. During the development of the questionnaire, the researcher also thought about whether the response choices provided to the participants were appropriate or not. The findings of the pilot research indicated that the response options were not only clear and relevant but also made it easier for the respondents to choose the most suitable response categories that accurately matched their viewpoints and experiences. This correlation between the responsiveness of the options and the participants' statements can assure the strength and functionality of the instrument.

3.2.10 Period of the study

The current study has been conducted across India from July 2023 to August 2024. The final data collection for the present study was conducted after the pilot study, April 2023-May 2023 and the trust suggested that the questionnaire was reliable. The data collected can be utilized to answer the Research questions and examine the Hypothesis. Data collection activity has been spread over one year, primarily to have sufficient time to collect data from bank branchesand customers. Data from bank branchesand customers were collected first in July-September 2023 and restarted after deciding there is a need to increase the sample size, from October 2023 to August 2024. Having a year for the survey has allowed for data collection and provided respondents with sufficient time (5-7days) to complete the survey. A longer timeframe is also permitted when selecting different respondents for each group if the primary respondent needs to complete the study within the provided time period or provide incomplete survey results. Additionally, customers with primary or same-frequency bank accounts in two major banking institutions were excluded. This led to the further need to identify and collect data from other customers. Thus, proper steps have been taken to ensure that sample respondents represent the opinion of the population being considered for the study. The data was collected from the respondents on convenience within the known circle.

3.2.11 Reliability and Validity Test

Two major strategies have ensured the reliability and validity of the study. Firstly, the Cronbach's Alpha test was conducted to establish the reliability of the questionnaire instrument to collect data from the given Instrument and selected respondents by a study conducted by Amirrudin et al. (2021). Cronbach's Alpha is a reliability test conducted within the SPSS to measure the internal consistency, i.e., the reliability of the measuring instrument. It is most used when the questionnaire is developed using multiple Likert scale statements to determine if the scale is reliable. The Cronbach Alpha test has been undertaken separately for both bankers and customers to assess the reliability of the questionnaire instrument for both groups. In the case of bankers (sample size - 850), a Cronbach Alpha value of 0.944 is derived to represent good internal consistency for the questionnaire. Similarly, for customers (Sample size- 1150), a Cronbach Alpha value of 0.759 is derived, representing good internal consistency. Thus, the questionnaire instrument for both demographic groups is Reliable and Valid.

Secondly, the entire research methodology developed has been derived from work conducted by prior scholars in similar domains in India and other regions worldwide to establish the relevance of the data collection and analysis method. Further, each hypothesis has been developed based on prior literature and inferences from major scholars in the past, which further improved the study's reliability and validity. Moreover, the study is valid as it has been facilitated through the adoption of different ethical considerations in the research and the non-harming of both the physical and mental health of the participants.

Assessing the reliability of each variable (DV & IVs) under investigation using Cronbach's Alpha is the aim of reliability analysis. Cronbach's Alpha has a range of 0 to 1. A gauge with a higher range score was made with greater accuracy. According to Revelle & Condon (2019), an alpha value greater than 0.7 is considered positive. The scale's good internal consistency for the sample under investigation is demonstrated by the present research's Cronbach's alpha, which varied from 0.746 to 0.910. The Cronbach Alpha test has been undertaken separately for both bankers and customers to assess the reliability of the questionnaire instrument for both groups. In the case of bankers (sample size- 850), a Cronbach Alpha value of 0.944 is derived to represent good internal consistency for the questionnaire. Similarly, for customers (Sample size- 1150), a Cronbach Alpha value of 0.759 is derived, representing good internal consistency. Thus, the questionnaire instrument for both demographic groups is Reliable and Valid.

A reliability test with SPSS was carried out to identify the most reliable measuring instruments. The main Cronbach's Alpha value derived from the test presents the degree of agreement between the different pieces of data that come from the raw data. This procedure is essential when one has several Likert scale questionnaires. Its function is to find out the scales' reliability that is used in research.

Reliability statistics for Bank Customers

The following table presents the reliability statistics of the sample sizes of 1150 respondents. The Cronbach's Alpha is 0.759, which indicates a good internal consistency.

Table No.3.9: Reliability Statistics- Bank customers

Reliability Statistics- Customer	
Cronbach's Alpha	N of Items
0.759	63

The reliability test on the 63-item customer questionnaire has led to a Cronbach's Alpha of 0.759, which is an indicator of a satisfactory level of internal consistency. Most of the items have positive and acceptable corrected item total correlations, which means that they significantly contributed to the scale. Nevertheless, some such as those related to solar finance, green domestic loans, and conservation practices having low or negative correlations that suggest these items may not be aligning well with the overall construct and hence need refinement or rewriting in the next studies. The overall scale is still sufficiently reliable for measuring customer awareness, usage, and attitudes toward sustainable banking practices in the context of exploratory research, notwithstanding the presence of a few inconsistencies.

Reliability statistics for Banks

The table below gives an overview of the reliability statistics of the sample data with 850 samples. One can notice that Cronbach's Alpha is 0.944 which is a bit more than 0.9 and therefore it is considered as good internal consistency. The 19-item instrument to understand bankers' perception towards the implementation of sustainable banking had a Cronbach's Alpha of 0.944, which is an exceedingly high internal consistency. The total correlations are all quite strong, with most of them being above 0.60, meaning that each item is a reliable contributor to the construct being measured. This elevated level of consistency suggests that the instrument is robust and reliable for measuring bankers' insights into environmental initiatives, operational challenges, and sustainable finance integration. The bankers' questionnaire is well-suited for advanced analysis and supports confident interpretation of the results in the study.

Table No. 3.10: Reliability Statistics- Bank branches

Reliability Statistics-Banks	
Cronbach's Alpha	N of Items
0.944	19

Upon examination of the table, it was identified that Cronbach's Alpha value indicates a good consistency in responses for all the specified items.

3.2.12 Normality Test

The normality of the data was ensured by the application of Skewness and Kurtosis. The values for asymmetry and kurtosis between -2 and +2 are considered acceptable to prove normal univariate (George and Mallery, 2010). Durbin–Durbin–Watson statistics are calculated. A rule of thumb is that test statistic values in the range of 1.5 to 2.5 are normal, and outside of this range could be cause for concern (Field, 2009). The Durbin-Watson statistics for all dimensions are of acceptable value. It is thus proved that all the indicators or questions reveal the assumptions that are required for SEM.

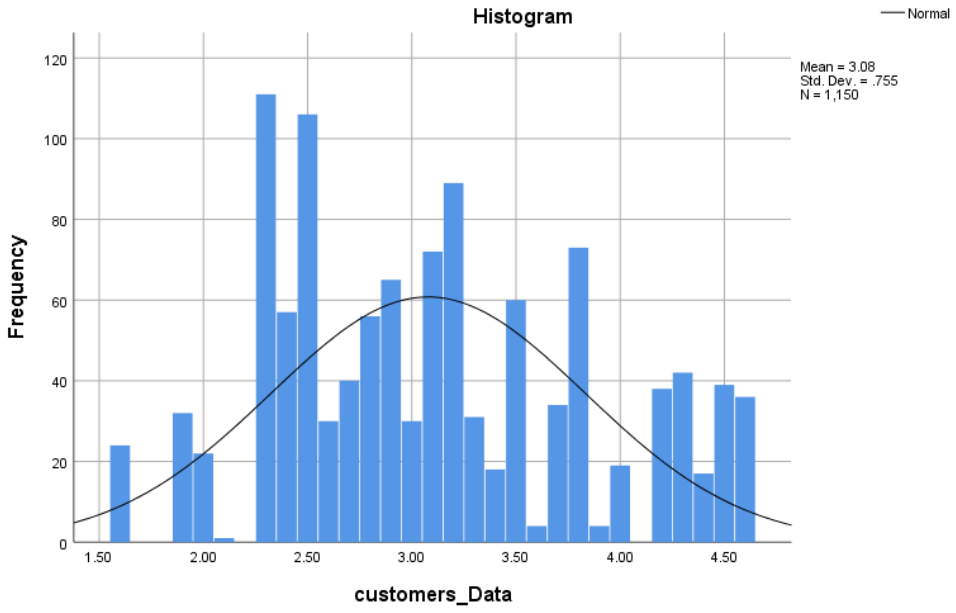

Figure 2. Normality curve

Source: Computed survey data

The histogram of customers data demonstrates a distribution that closely aligns with a normal pattern**,** as indicated by the bell-shaped normal curve overlay. The majority

of data points are centered around the mean (≈ 3.08), with a relatively balanced spread on both sides. Overall shape suggests the data is reasonably symmetric **and** approximates a normal distribution.

3.3 Development of Conceptual framework

3.3.1 Hypotheses development

The hypotheses are developed on the basis of the following research objectives:

- To identify the sustainable practices adopted by the select Indian commercial banks
- To assess customers' awareness and usage of Sustainable banking practices.
- To analyse the factors influencing the customer's behavioural intention to use and actual use of Sustainable banking practices.
- To examine the benefits of adopting sustainable banking practices for banks and customers.
- To understand the challenges banks and customers face in adopting sustainable banking practices.

❖ **Sustainable banking practices adopted by public sector and private sector banks:**

The Indian banking system can be broadly categorized into public and private banking institutions, providing similar functions but having different work processes. It can also lead to differences in adopting Sustainable banking processes, as Kumar Prakash (2019) argued. Here, the focus is not on the impact of banks' Adoption of Sustainable banking practices but on the difference in the adoption/provision of sustainable practices if such exist. The hypothesis above will explore the same aspect and examine whether any difference exists in the sustainable banking practices available in the private and public banking sectors.

$H_0$1: There is no significant difference in the sustainable banking practices adopted by public sector and private sector banks.

❖ **The socio-demographic profile of customers and their awareness of sustainable banking practices:**

According to Stauropoulou et al. (2023), customer awareness is essential to ensure the customer utilizes the services in regular operation. While Sustainability may be adopted,

making the customer aware of such aspects can influence usage. Hence, awareness is also an important variable to consider. Such awareness differs due to marketing aspects or management focus, which can show deviation based on whether the bank is private or public. Based on such a discussion, the hypothesis will attempt to examine whether there is a difference between awareness of Sustainable banking practices and services among customers of public and private banking institutions.

Demographic aspects are crucial factors that can influence an individual's awareness of various products or services, as asserted by Bouteraa et al. (2023). Four significant Socio-demographic variables that affect such understanding are gender, age, occupation, and educational qualification, as each determines the societal structure and regular interaction. The current study has attempted to evaluate this by considering all four aspects of the demographic variable and examining the influence on customer awareness regarding Sustainable banking practices in their banking institution (both public and private sector banks in India).

$H_0$2a: There is no significant difference between the socio-demographic profile of customers and their awareness of sustainable banking practices

- **The socio-demographic profile of customers and their usage of sustainable banking practices**:

Bank customers have been considered not to be actively utilizing Sustainable banking practices and services. It implies potential scepticism or a lack of Adoption among customers. The Hypothesis aims to explore statistical evidence supporting the notion that customers engage less with Sustainable banking practices.

While the prior Hypothesis tends to examine the influence of such demographic variables on awareness levels among users, the study conducted by Nweke et al. (2020) suggested that such variables also influence usage. It is based on a logical model: if members have distinct levels of awareness due to demographic factors, such can significantly influence the decision to use a product/service. Hence, demographic factors will be evaluated in both contexts. This hypothesis has been developed to assess the influence of four demographic factors (age, education, occupation, and gender) on the actual usage of Sustainable banking services.

$H_0$2b: There is no significant difference between the socio-demographic profile of customers and their usage of sustainable banking practices

- **Perceived usefulness and customers' behavioural intention to use sustainable banking practices:**

Customers will be willing to utilize such services if they perceive a service to help meet their needs. As observed by Nguyen et al. (2022), Perceived Usefulness as a variable may also significantly influence the behavioural Intention to use banking services. Hence, this aspect considers both the nature of the service and whether such service will meet customer needs. This aspect is being adopted in the current study as a hypothesis to evaluate customers' intention to utilize sustainable banking practices across the country's public and private banking institutions.

H3a: Perceived usefulness significantly influences the customers' behavioural intention to use sustainable banking practices

- **Perceived ease of use and customers' behavioural intention to use sustainable banking practices:**

Customers, while using any service, want the process to be simple and do not want to spend sufficient effort utilizing such a service. Hence, Perceived Ease of Use is also a significant variable (Hidayat, 2021). Customers wish to perceive Ease of use regarding bank services as well. Such is already a major aspect, which includes monetary factors, and hence, enjoy the process as simple and not entail any complex steps. This concept is being examined here to evaluate whether Perceived Ease of Use will influence the behavioural Intention to use Sustainable banking practices.

H3b: Perceived ease of use significantly influences the customers' behavioural intention to use sustainable banking practices

- **Perceived environmental commitment and customers' behavioural intention to use sustainable banking practices**:

Customers are rational beings and may make decisions based on environmental aspects and other variables, which have been established in the study by Bag et al. (2021). Banks are also important pillars of society, and the role of meeting social responsibility needs to be covered by banking institutions as well. Hence, banks are also attempting to introduce eco-friendly services in their portfolio. However, it should be noted that singular eco-friendly practices are different from the entire Sustainable banking framework, which is being evaluated using the hypothesis above to examine the behaviours of private and public bank customers.

H3c: Perceived environmental commitment significantly influences the customers' behavioural intention to use sustainable banking practices

- **Perceived environmental commitment and Actual use of sustainable banking practices:**

Customers who perceive that their bank is genuinely committed to environmental sustainability are more likely to use sustainable banking practices. This perception builds trust and motivates customers to engage in eco-friendly financial behaviors. When environmental commitment is clear, it encourages customers to align their banking choices with their personal values. Therefore, perceived environmental commitment can have a direct positive effect on the actual use of sustainable banking services. This hypothesis tests whether such commitment influences usage beyond just intentions or attitudes.

H3d: Perceived environmental commitment directly and significantly influences the Actual use of sustainable banking practices.

- **Behavioural Intention towards sustainable banking and the actual use of such practices:**

Behavioral intention reflects a customer's readiness and willingness to adopt sustainable banking services. According to behavioral theories, intention is a key predictor of actual behavior. If customers intend to use sustainable banking, they are more likely to follow through with their actions. This hypothesis examines whether a strong intention leads to real usage of sustainable banking products. Confirming this relationship helps validate the importance of fostering positive intentions to increase adoption rates.

H3e Behavioural Intention towards sustainable banking significantly influences the actual use of such practices

3.3.2 Theoretical framework

The Technology Acceptance Model (TAM):

The Technology Acceptance Model is a theoretical framework developed by Davis (1989). TAM offers a cognitive perspective, focusing on how individuals' internal evaluations influence adoption behaviour. TAM suggests that the decision to adopt sustainable banking practices is primarily shaped by two key perceptions: perceived usefulness and perceived ease of use. Extensions to TAM further consider external factors

such as regulatory influence and peer institutional behaviour, enhancing its relevance in complex adoption contexts (Venkatesh & Davis, 2000). TAM is the primary theoretical framework for this research. In the context of sustainable banking, the adoption and use of sustainable practices by customers is often driven by the belief that such actions align with their personal values, enhance their sense of social responsibility, and contribute to broader environmental goals.TAM accounts for functional aspects (e.g., Perceived Ease of Use and Perceived Usefulness).

The Value-Belief-Norm (VBN) Theory

The Value-Belief-Norm (VBN) is a psychological framework developed by Stern et al. (1999). VBN theory explains how personal values and moral beliefs influence pro-environmental behaviour. It adopts a normative perspective, suggesting that individuals' environmental concern, ethical and value-driven beliefs, such as awareness of environmental consequences and a sense of personal responsibility, activate personal norms, which in turn drive their actions, leading to a moral obligation to act environmentally responsibly. In the context of sustainable banking, VBN theory helps to explain why customers who perceive their bank to be environmentally committed may feel a moral duty to support its sustainable initiatives. This belief–norm pathway highlights how internalised values, beyond functional benefits, shape customers' behavioural intention to adopt and use sustainable banking practices. VBN adds a normative dimension, capturing the influence of environmental commitment and ethical responsibility. Compared to other prevalent behavioural theories, VBN provides the best available account of support for the environmental commitment. In this research, the conceptual model is extended by incorporating the Perceived Environmental Commitment construct, reflecting customers' recognition of their bank's environmental efforts. The inclusion of this factor reflects how individual environmental values and beliefs can influence the customers' values and ethical concerns in shaping adoption behaviour.

Constructs adopted:

Constructs	Sources
Perceived Usefulness	Ma, Y. J., Gam, H. J., & Banning, J. (2017). Perceived ease of use and usefulness of sustainability labels on apparel products: application of the technology acceptance model. Fashion and Textiles, 4(1), 3.
Perceived Ease of use	Ma, Y. J., Gam, H. J., & Banning, J. (2017). Perceived ease of use and usefulness of sustainability labels on apparel products: application of the technology acceptance model. Fashion and Textiles, 4(1), 3.
Perceived Environmental Commitment	Yadav, R., & Pathak, G. S. (2016). Young consumers' intention towards buying green products in a developing nation: Extending the theory of planned behavior. Journal of cleaner production, 135, 732-739.
Behavioural Intention to use Sustainable banking practices	Ma, Y. J., Gam, H. J., & Banning, J. (2017). Perceived ease of use and usefulness of sustainability labels on apparel products: application of the technology acceptance model. Fashion and Textiles, 4(1), 3.
Actual Use of Sustainable banking practices	Ma, Y. J., Gam, H. J., & Banning, J. (2017). Perceived ease of use and usefulness of sustainability labels on apparel products: application of the technology acceptance model. Fashion and Textiles, 4(1), 3.

Figure 3. Research constructs and sources

Source: Secondary data

3.3.3 Proposed Model for the study

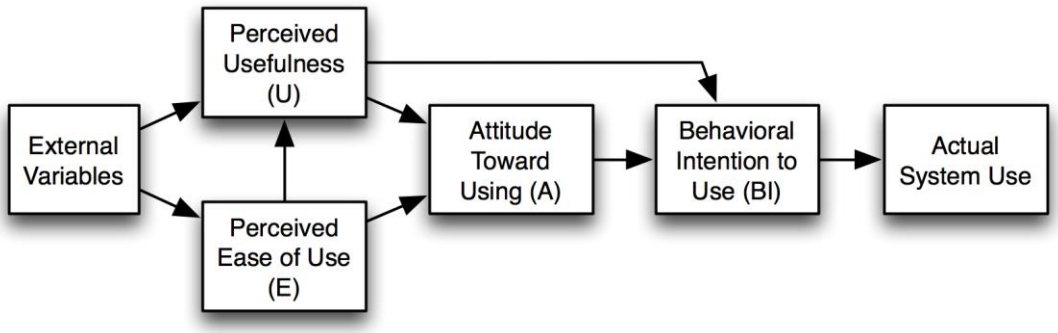

Figure 4. Proposed Model for the study

Source: The original Technology Acceptance Model (TAM), Davis 1989

3.3.4 Conceptual Framework

Acceptance of environmentally friendly measures in banking is primarily an attitudinal change rather than a technological one. To grasp the multidimensional motivations, this research uses the Technology Acceptance Model (TAM). As a theoretical framework, TAM is specifically designed to explain the adoption of technology. Nevertheless, it may be interpreted as a technological and operational change in this case. TAM offers a comprehensive way of understanding the factors that lead to the adoption of

new technologies or practices. The emphasis of TAM on perceived usefulness and ease of use is very compatible with how bank branchesmay evaluate the actual implementation of sustainable banking practices by the customers. This theoretical framework helps the research to be anchored in a recognized model which is still valid in the complex changes of integrating sustainability in the banking sector.

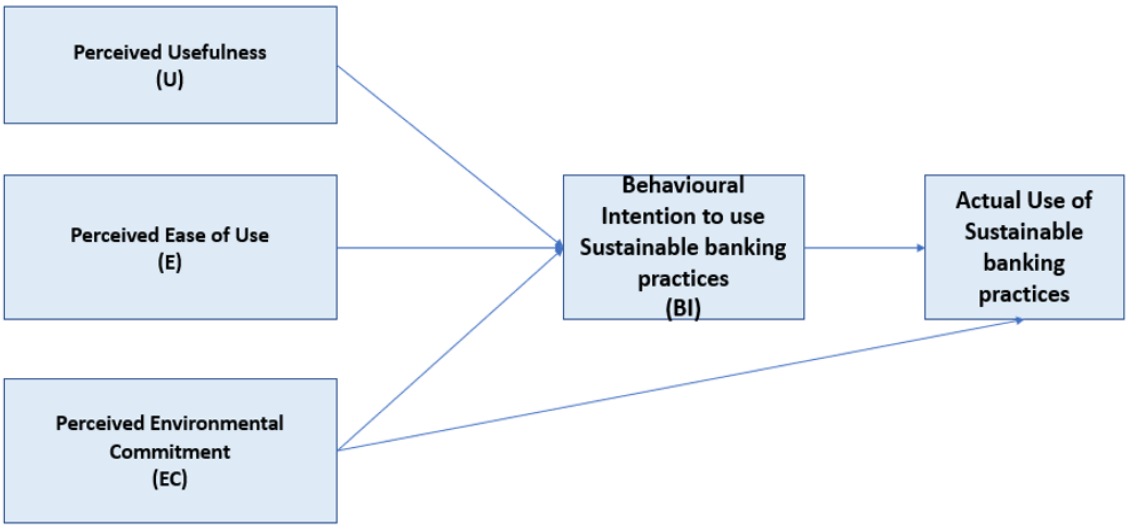

Figure 5. The Hypothesized Research Model

Source: Technology Acceptance Model (TAM) (Davis, 1989)

3.4 Framework of analysis

Frequency Analysis Frequency analysis is a process of creating a table that shows the frequency of similar responses that were common to all participants (Morales & Bowers, 2022). This method has been utilized in the current research to understand the overall breadth of knowledge of different practices and also to set the initial stage for other comments.

Factor Analysis Factor analysis is mainly employed to figure out the different variables and to investigate the relations which are not obvious (Shrestha, 2021). The current research has employed factor analysis to identify variables and the validity of the Hypothesis.

t Test The t test is an essential statistical instrument which can be used to determine whether data differences between groups result from a relationship between variances or simply by chance (Winter, 2019). This test enabled us to determine the fact that differences are due to relationships and those relationships need to be examined.

ANOVA The ANOVA Table test is helpful in finding out whether there is a connection between independent and dependent variables (Yu et al., 2022). This statistical instrument has been used in this research to explore the relationship between the various variables and also to verify the alternative or null hypothesis concurrently.

SEM (Structural Equation Modelling) Analysis SEM is one more major statistical instrument that is employed for measuring and evaluating the connection between observable variables (Guenther et al., 2023). The use of the SEM analysis in combination with the analysis of the ANOVA table enabled the adoption of the Hypothesis and responded to the research questions. The SEM analysis will uncover the causal links between Perceived Usefulness, Perceived Ease of Use and Actual Use of sustainability adoption practices by the customers. The interpretation will focus on determining the most necessary links, the robustness of the ties, and the consequences for the implementation of sustainable banking practices (LGT Capital Partners Ltd. 2019). The paper will then relate these results to the theoretical framework and objectives of the research, thus offering a deeper understanding of the factors influencing the behavioural Intention to use sustainable banking practices.

Structural Equation Modelling (SEM) is employed as it enables the examination by researchers of complex relationships among a number of variables, both observed (measured) and latent (unobserved) constructs, simultaneously. SEM combines factor analysis and multiple regression which makes it possible to evaluate the measurement validity and also test the theoretical models with both direct and indirect effects. This is what gives SEM exceptional power in the case of testing mediation, moderation, and overall model fit thus leading to a thorough understanding of the underlying processes in the data. In this instance, SEM was utilized to check the direct and indirect relationships among Perceived Usefulness, Environmental Concern, Intention to Use, and Actual Usage. This technique permits the assessment of interaction among these variables as well as the measurement of latent constructs with multiple indicators.

3.5 Operational definitions

Indian Commercial Banks: A bank here has been defined as a financial institution that collects deposits from people to mobilize capital and, at the same time, lends such money to different corporations and individuals to charge interest and provide specific interest to

depositors. This study focuses on the Indian commercial banking sector, comprising public sector and private sector banks, while foreign banks operating in India are excluded.

Sustainable banking Practices: Sustainable banking practices refer to those banking practices and services that are provided by banking institutions while not causing any environmental damage. Hence, Sustainable banking practices refer to the same banking activities while considering ESG (environmental, Social, and Governance Factors).

Customers - Customers here have been defined as regular users of different banking services. It should be noted that normal users (users who do at least 1-2 transactions weekly) are considered here. The primary reason behind selecting such customers is to ensure they use different services frequently.

Bank managers: The primary reason behind the selection of managers among all employees is that such managers have more knowledge regarding distinct functions and services incorporated in the institution than all employees who work in specific aspects of the banking institution.

Perceived Usefulness - Perceived Usefulness refers to the inherent belief among customers regarding how the Adoption of sustainability will help to meet different needs of the customer, and in the case of banking institutions, such can refer to improving the quality of the banking experience as well (Alqudah et al., 2023). Here, Perceived Usefulness has been taken from the content of the deployment of different Sustainable banking services, including accessibility to bank account details and conducting necessary transactions like deposits and withdrawals. Specific aspects like loan operation have also been adopted for the study to determine the Perceived Usefulness of such functions.

Perceived Ease of Use- Perceived Ease of Use refers to customer perception regarding how easy it is to use specific systems and services provided by banking institutions and reviewed for the study. Perceived Ease of Use in the banking system also considers the prospect of being used anywhere and anytime based on customer convenience (Prastiawan et al., 2021). In the current study, Perceived Ease of Use was considered the independent variable. It includes customer-centric, easy, quick, and convenient services for customers to use anytime and anywhere, which will aid them.

Perceived Environmental Commitment – Perceived Environmental Commitment in the banking sector may refer to practices like paperless statements or digital banking, allowing

the customer to perform the same function while causing minimal or negligible environmental damage (Ellahi et al., 2023). Eco-friendly practices have been considered a specific aspect, as such practices in a standalone manner are deemed to be different from the complete Adoption of a Sustainable banking ecosystem. Further, customers might prefer certain eco-friendly practices while not favoring a change in other practices. The current study also evaluated this to understand the influence on usage.

Behavioral Intention to use - The presence of services in the bank also contributes to usage; as such, it depends on the behavioral Intention to use banking services (Tran, 2021). The current study considers the behavioral Intention to use banking services as a mediating variable. The mediator variable is a variable that can aid in explaining the impact the independent variable has on the dependent variable. The present study refers to how independent variables, when combined to use Sustainable banking services, can impact the actual usage of Sustainable banking services by customers across the nation.

Actual Use - The actual Adoption and utilization of any service determines whether such a service has been able to change customer habits or has been accepted such service in their regular operations (Muthulakshmi & Vairavan, 2023). Here, the Actual Use of Sustainable banking services has been considered a dependent variable or a variable influenced by different independent variables. It should be noted that such has been considered for customers throughout different banks in various states of India to understand how different independent variables influence the actual usage of Sustainable banking services, and which variable has more influence.

3.6 Ethical Consideration

Ethical integrity played a major role in the execution of this research, and a strict framework of ethical considerations was put in place and followed very carefully in order to safeguard the rights and the privacy of the participants as well as to maintain the validity and the reliability of the study. The principles of privacy and confidentiality are observed through the rigorous implementation of the informed consent procedures under which the participants are given a full understanding of the objectives, procedures, and risks involved in the study. Customers and bank branches (bank managers), as participants, were informed that their involvement was free of any coercion and that it was their right to discontinue their participation at any time without any negative repercussions (Kumar, 2020).

Moreover, a strict commitment to the anonymity of participants is guaranteed, thus no personal identification information will be combined with the survey answers, which in turn ensures the confidentiality of the participants (Avrampou, 2019). The data that was gathered is kept in a safe place, only authorized individuals have access to it, and it is further protected by measures that prevent unauthorized access, disclosure, or breach. In brief, this research is predominantly driven by the institution's pledge to ethical considerations.

Proper measures were taken to ensure the anonymity and the confidentiality of the data. Every bit of data collected was housed in a secure digital storage system that was only accessible to the researcher during the period. This was done to make sure that the complete data was only accessible to the researcher. Further, managers from all banking institutions were requested to provide consent letters from their respective institutions to ensure that banking institutions had agreed to their managers being part of the research. Additionally, each respondent and the banking institution were given the right to revoke their consent and withdraw data during the research process. Further, it has also been ensured that the researcher does not misrepresent data to derive desired answers, and it has also been confirmed that no respondents were provided with knowledge regarding the other participants (whether managers in banking institutions or customers who answered the survey). Independent reviewers also reviewed the survey instrument to ensure no questions could negatively impact the participant's physical and mental health.

This study on "Evaluation of Banks' and Customers' Perception Towards the Adoption of Sustainable banking Practices in the Select Indian Commercial Banks" was conducted as per ethical guidelines and received approval from the Institutional Human Ethics Committee of **Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, India, dated 05th January 2023, (Approval No: AUW/IHEC/COM-22-23/XMT-08).** All research methodologies adhered to ethical standards, ensuring compliance with protocols for confidentiality, data protection, and informed consent.