European Economic Letters
ISSN 2323-5233
Vol 16, Issue 1 (2026)
http://eelet.org.uk

Predicting Green-Banking Adoption Intentions: Extending the Technology Acceptance Model with Environmental Consciousness

Abhishek kalra[1*], Dr V.M Tripathi[1], Abhishek badoni[2]
[1]School of Commerce Graphic Era hill university, Dehradun, Uttarakhand
[2]Commerce Department, Hemvati Nandan Bahuguna Garhwal University, Srinagar, Uttarakhand
Corresponding Author: Abhishek kalra, School of Commerce, Graphic Era hill university, Dehradun, Uttarakhand
Email: kalraoimt@gmail.com

Abstract
Purpose: This paper considers factors that determine the intention of retail customers to use green-banking services in an Indian environment with climate vulnerability by revising the Technology Acceptance Model to include environmental and social factors of determinants.
Design: A cross-sectional survey was done on 432 customers of two districts of Uttarakhand, India, in retail banks. The structural equation modelling was used to analyse the data and test the direct effects of perceived usefulness, perceived ease of use, environmental consciousness and social influence on behavioural intention, where attitude towards green banking was the moderator.
Findings: The strongest predictor of behavioural intention was perceived usefulness and environmental consciousness, and social influence and perceived ease of use. Green banking attitude had a stronger influence on the perceived usefulness and a smaller influence on the intention direction of perceived ease of use. The model described 56 per cent of behavioural intention and the environmental consciousness was greater in the hill district.
Originality/value: The research builds on Technology Acceptance Model by introducing moral, social and cognitive factors leading to green-banking acceptance. It offers evidence of the role of sustainability attitudes in setting the relationships between technology-intention in an emergent economy and offers district-level evidence of a climate-risk environment.

Keywords: Green banking, Technology acceptance model, Environmental consciousness, social influence, Behavioural intention, Emerging economy.

1.0 Introduction

The increasing effects of climate change have increased the demand of financial institutions to play an active role in sustainable development. Banks are now being perceived not only as mediators of capital but major actors who can shape production, consumption and investment patterns due to the environmentally responsible financial conduct (Bukhari et al., 2020; Merli et al., 2023). In these regards, green banking (the provision of banking services that minimize negative effects on the environment by digitalization, paperless services, and environmentally friendly financial products) has become the main aspect of sustainable finance strategies on the global scale (Sharma et al., 2024). Nevertheless, although regulators are promoting adoption of green-banking services and technology is available, the uptake of these services by consumers is still unbalanced, especially in the developing economies.

India is a paradox of theoretically rich and rich scenario to study the green-banking adoption. India, on the one hand, is one of the most digitally financially included countries in the world because of the high rates of smartphone penetration, the presence of real-time payment systems and policy-based initiatives at the digitalisation (Taneja et al., 2024). Conversely, explicitly green banking services, including green deposits, paperless banking services, and environmentally labelled digital services, have been taken up with low adoptability (Ashraf, 2023; Jain et al., 2024). The available information indicates that technological constraints cannot be solely credited in this gap in adoption. Rather, behavioural, social and moral drivers have a determining role in the propensity of consumers to use sustainability-focused financial innovations (Malik et al., 2022; Merli et al., 2023).

The Technology Acceptance Model (TAM) has been the overall framework of individual adoption of digital banking and financial technologies (Davis, 1989; Singh and Sahu, 2021). TAM is based on the assumption that the key cognitive determinants of behavioural intention are perceived usefulness and perceived ease of use. Although this model has proven to be very effective in explaining situations of information systems, its use in the case of green banking has produced contradictory results (Bryson et al., 2016; Sharma et al., 2024). Lately, researchers are more

convinced that the utilitarian orientation of TAM cannot adequately describe the process of adoption that involves ethical, environmental or pro-social motives, when a user can make a choice based on values and identity and not only efficiency (Aslam and Jawaid, 2023; Gu et al., 2023).

To address these shortcomings, the recent literature has recommended the extension of TAM by including constructs to reflect moral motivation and social embeddedness (Bukhari et al., 2021; Jain et al., 2025). Two constructs have become especially relevant in the situation of green banking. Environmental consciousness is a part of the ecological awareness of people in regard to the ecological degradation and the moral responsibility individuals have towards the environment. Environionally conscious is based on the value-belief-norm and norm activation traditions to encompass value-based impulse, which may directly affect pro-environmental behaviour regardless of whether there are direct functional gains (Stern, 2000; Hasan et al., 2022). According to empirical research, environmental consciousness has been proven to be a powerful predictor of green financial behaviour, with its impact on green finance behaviour differing in contexts and depending on the environmental salience levels (Dang, 2024; Xie et al., 2024).

The second extension of TAM that is essential is social influence. Based on the social identity theory and normative approaches, social influence is the perceived anticipations and actions of significant reference groups (Venkatesh et al., 2003; Gupta and Malik, 2024). In collectivist cultures like India, peer behaviour and family opinion and community norms tend to influence the financial choices individuals make, not just based on the cost benefit analysis (Dave, 2024; Olasiuk et al., 2023). Previous studies have shown that social influence may have a substantial impact on the adoption of green banking and fintech services, however, the contribution of social influence is usually under-investigated or considered as a secondary factor to cognitive beliefs (Jadaun, 2023; Merli et al., 2023).

Other than including such direct predictors, the current research redefines attitude towards green banking as a moderating variable, as opposed to a mediating construct. Formulations of classical TAM place attitude as an intermediate between beliefs and intention (Davis, 1989). Nonetheless, recent research on decision-making proposes that attitudes can be used as boundary conditions to enhance or diminish the transfer of the cognitive beliefs to behavioural intention (Evans and Stanovich, 2013; Khalid et al., 2024). People who hold positive attitudes towards sustainability might turn their usefulness and ease of use perceptions more easily into adoption intentions than those with weak or ambivalent attitudes that might not be overcome by how much they recognise the functional benefits of sustainability. Attitude is best treated as a moderator hence gives more realistic explanation of the heterogeneity in green-banking adoption.

The contribution of this study is also enhanced by the empirical context. The majority of the green-banking literature is based on the national aggregated samples, which is implicitly assuming that environmental exposure and digital preparedness are homogenous (Salsabila et al., 2022; Taneja et al., 2024). This article takes a micro-geographic approach and examines two districts of the Indian state of Uttarakhand that are significantly different in terms of ecological vulnerability and socio-digital situations. This between-state heterogeneity means that one can study how climate-risk salience alters the relative role of moral, social and cognitive adoption drivers, responding to recent demands to conduct sustainability research in context (Merli et al., 2023; Xie et al., 2024).

This paper aims at achieving three things. First, it considers the direct impact of perception of usefulness, perceived ease of use, environmental consciousness and social influence as regards to behavioural intention to follow green-banking services. Second, it evaluates whether attitude toward green banking preconditions the links in the relations of perceived usefulness and behavioural intention, and perceived ease of use and behavioural intention. Third, it examines whether these relationships vary among the districts that are characterised with different degrees of climate vulnerability. The study gives empirical evidence of the relationship between moral, social and cognitive processes in jointly affecting the adoption of green banking in an emerging economy based on retail bank customer survey data and structural equation modelling.

European Economic Letters
ISSN 2323-5233
Vol 16, Issue 1 (2026)
http://eelet.org.uk

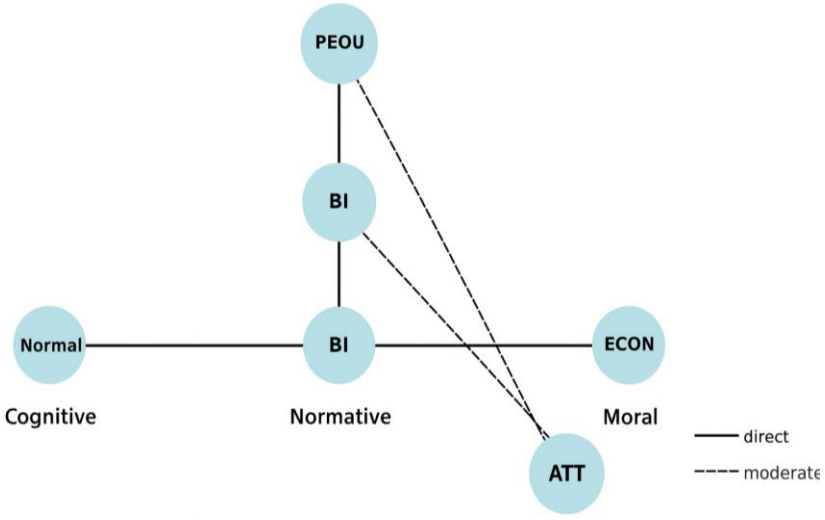


Figure 1: Proposed Research Framework for Green Banking Adoption

2. Literature Review & Hypothesis Development

2.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) posits that two belief variables Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) shape behavioural outcomes by (i) influencing one another (PEOU → PU) and (ii) directly or indirectly steering Behavioural Intention (BI) to adopt a focal system (PEOU → BI; PU → BI) (Singh & Sahu, 2021).

Meta-analyses covering > 300 TAM studies confirm the robustness of these links across cultures and technologies, yet effect magnitudes vary with task complexity and value symbolism. In digital-banking contexts the average standardized coefficient for PU → BI hovers around 0.40, whereas PEOU → BI weakens (≈ 0.18) once ease becomes a hygiene factor (Bukhari et al, 2021; Bryson et al, 2016). TAM critics therefore urge researchers to integrate context-salient extensions especially moral, hedonic or social drivers rather than merely re-test the core paths (Jain et al, 2025).

2.2 TAM in green-banking research

A growing stream applies TAM (or its successors TAM2, TAM3, UTAUT) to green banking, i.e., paper-free, low-carbon financial services (Sharma et al, 2024; Iqbal et al, 2021)). Results are encouraging but inconsistent:

- **Positive evidence.** A cross-national survey (n = 1,128) showed PU as the strongest predictor of intention to open green savings accounts (β = 0.46) while PEOU retained a smaller yet significant role (Chandu et al, 2024).
- **Mixed evidence on environmental drivers.** Shantha (2019) found environmental uncertainty strengthened PU but weakened PEOU, pointing to cognitive overload in volatile markets (Saif et al, 2024).
- **Null or context-bounded findings.** In Pakistan, an extended UTAUT with green values explained adoption among urban Millennials but collapsed for rural Baby Boomers (Shafique et al, 2020; Nisar et al, 2023).

Cross-sectionality and common-method bias **(**Salsabila et al, 2022; Chen et al, 2023**).** None of the above studies use multi-wave data or hard usage logs, so causality remains inferential. Third, under-specified moderators**.** Few models test how pre-existing attitudes toward sustainability condition the classic TAM paths; this gap impedes practical segmentation (Jain et al, 2025).

Our study addresses these gaps by (a) comparing two climatically and socio-digitally distinct districts (Dehradun vs Chamoli, Uttarakhand) and (b) incorporating Attitude as a moderator alongside substantive pro-environmental construct.

2.3 Environmental Consciousness (ECON)

Environmental Consciousness captures the degree to which individuals recognise ecological problems, feel responsible and exhibit readiness to act. It is typically measured via New Ecological Paradigm (NEP) or Green

Consumer Values (GCV) scales (Hasan et al, 2022). In a Bangladeshi bank-employee survey, ECON emerged as the single largest driver of green-brand advocacy (β = 0.52) (Newton et al, 2024). Conversely, Bryson et al. (2016) observed no direct ECON → BI link once trust and price sensitivity entered the model. A recent multi-country study (India–Pakistan–Malaysia) reconciles the contradiction: ECON matters when eco-benefits are salient and verifiable; if the product's environmental payoff is opaque, PU dominates (Dang, 2024). The Value-Belief-Norm (VBN) Theory (Stern, 2000) and Norm Activation Model (Schwartz, 1977) are the bases of the inclusion of the Environmental Consciousness (ECON), which hold that the personal moral norms activated by the ecological concern can lead to pro-social action despite the utilitarian judgement. ECON is an internalization of moral-cognitive infusion within the model that goes beyond the standard cost-benefit logic of the TAM. Instead of being able to affect intention by functional appraisal alone like PU and PEOU, ECON triggers internalised moral obligations and self-identity as a responsible citizen to the environment. Mountain districts such as Chamoli experience climate threats first-hand (glacial floods, landslides), arguably magnifying ECON's salience, yet literature is silent on such high-risk contexts.

2.4 Social Influence (SI) – normative pressure & hypothesis

Social Influence is the perceived expectation that important referents (family, peers, opinion leaders) endorse a behaviour; it operationalises the *subjective norm* from the Theory of Planned Behaviour (TPB) and *social norm* in TAM2 (Gupta et al, 2024). A 276-respondent SEM study found SI (β = 0.31) second only to PU for mobile-banking adoption (Dave, 2024). Yet its potency is culture-contingent; collectivist contexts amplify SI, whereas individualistic cultures privilege utilitarian beliefs. Sustainability adds another layer: social identity cues (e.g., friends displaying tree-planting badges on banking apps) can elevate SI in green services (Olasiuk et al, 2023). Social Influence (SI) is the extension of TAM based on Social Identity Theory (Tajfel and Turner, 1986) and Descriptive Norm Theory (Cialdini et al., 1990). SI therefore, when included in TAM, imbues a social-identity channel with the established cognitive channel switching adoption behaviour more of a rational judgement of usefulness, to a socially enforced, identity-affirming behaviour. Uttarakhand's tight-knit hill communities, where word-of-mouth shapes many economic decisions, likely magnify SI effects particularly in Chamoli.

2.5 Perceived Ease of Use (PEOU) – dual role & hypotheses

PEOU remains foundational in digital finance. In India, Internet-banking users rated PEOU's impact on PU (β ≈ 0.44) higher than on BI (β ≈ 0.17) (Rehman et al, 2021). Where digital literacy is patchy hill districts often have older, lower-educated populations the friction-reducing power of PEOU may resurge.

2.6 Perceived Usefulness (PU) – utilitarian value & hypothesis

PU reflects the degree to which using green-banking channels enhances task performance or offers unique benefits (e.g., carbon tracking). Consistently, PU concentrates the largest share of variance in BI across FinTech studies (Natalwala & Habibullah, 2025). For green products, the notion of "usefulness" extends beyond convenience to include instrumental environmental benefit a factor sometimes conflated with ECON (Gu et al, 2023). Our model keeps them distinct to isolate functional from moral calculus.

2.7 Attitude (ATT) as moderator – theoretical logic & hypotheses

Classical TAM considers Attitude as an intervening variable between beliefs and intention, whereas more recent theoretical recent developments demonstrate that attitudes can condition those relationships, as well. Dual-process theories of decision-making (Evans and Stanovich, 2013) state that the human judgment is carried out by two systems that interact with each other, a fast, affect-based System 1, and a deliberative, analytic System 2. In this context, Attitude will serve as a cognitiveaffective filter that explains how much instrumental beliefs (Perceived Usefulness and Perceived Ease of Use) are converted into behavioral intention.

This conceptual re-framing changes TAM, which was originally a cognitive-instrumental model to a moral-cognitive integration model. It acknowledges that positive sustainability attitudes are motivational catalysts that activate the impact of cognitive assessment, in line with the modern moral psychology and literature on sustainable consumption. We therefore establish Attitude (ATT) as a boundary condition which enhances or reduces the influences of Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) on Behavioral Intention (BI).Accordingly, we position ATT as a *moderating variable*:

2.8 Research framework (Figure 1)

Based on the Technology Acceptance Model (TAM) and its extensions that focus on sustainability, this research paper defines a causal framework that consists of direct effects and moderating effects. The model merges cognitive, moral and social antecedents of adoption of green banking without the blurring of conceptual boundaries among causal pathways. There are no mediation effects; all constructs have either a direct impact on behavioural intention, or they moderate the selected belief-intention associations.

Direct-effect hypotheses

In TAM, the perceived usefulness (PU) and the perceived ease of use (PEOU) are the fundamental cognitive beliefs that determine the adoption of technology. PU represents the perceived functional advantages of green-banking services and PEOU records the level at which customers feel that green-banking services are easy to use and learn. In line with the previous studies, PEOU is also likely to augment PU.

In addition to the cognitive beliefs, moral and social consideration influences the adoption of green banking. Environmental consciousness (ECON) is the level of environmental awareness of people and their internal responsibility towards the environment, which may trigger pro-environmental behaviour not on the basis of utilitarian consideration. Social influence (SI) represents perceived normative pressure on significant referent groups and especially is relevant in collectivist ones in which financial choices are more socially integrated.

Accordingly, the following direct-effect hypotheses are proposed:

- **H1:** Environmental consciousness positively influences behavioural intention to adopt green-banking services.
- **H2:** Social influence positively influences behavioural intention to adopt green-banking services.
- **H3:** Perceived ease of use positively influences perceived usefulness of green-banking services.
- **H4:** Perceived ease of use positively influences behavioural intention to adopt green-banking services.
- **H5:** Perceived usefulness positively influences behavioural intention to adopt green-banking services.

Moderation hypotheses

Green banking attitude is an overall assessive attitude of an individual towards the services of environmentally oriented banking. Attitude is instead conceptualised as a conditioning state, and not a mediating process, and influences the transformation of cognitive beliefs into behavioural intention. The people who have positive attitudes towards green banking are supposed to translate perceptions of usefulness and ease of use to the adoption intention more intensely than people with a weak or unfavourable attitude.

Based on this logic, the following moderation hypotheses are proposed:

- **H6:** Attitude toward green banking positively moderates the relationship between perceived usefulness and behavioural intention.
- **H7:** Attitude toward green banking positively moderates the relationship between perceived ease of use and behavioural intention.

These hypotheses constitute a long Technology Acceptance Model of direct cognitive, moral and social impacts on behavioural intention, and circumstantial moderation by attitude of the major belief-intention connections.

Table 1. Construct Map and Conceptual Boundaries

Construct	Theoretical Source(s)	Core Assumption	Motivational Base	Unique Contribution to Extended TAM
Perceived Ease of Use (PEOU)	Technology Acceptance Model (Davis, 1989)	Ease reduces cognitive effort and fosters acceptance	Functional (cognitive efficiency)	Enables assessment of usability friction and cognitive load in adoption
Perceived Usefulness (PU)	TAM; Expectancy–Value Theory	Users adopt if technology enhances task performance	Functional (utilitarian benefit)	Captures performance-oriented, outcome-driven cognition

Environmental Consciousness (ECON)	Value–Belief–Norm Theory; Norm Activation Model	Moral awareness and responsibility motivate pro-environmental action	Moral (identity-based obligation)	Introduces moral-normative pathway missing in traditional TAM
Social Influence (SI)	Social Identity Theory; Descriptive Norm Theory	Individuals conform to in-group norms for social approval	Social (belonging and norm compliance)	Adds social-identity pathway reflecting collectivist cultural dynamics
Attitude toward Green Banking (ATT)	Theory of Planned Behaviour; Dual-Process Model of Cognition	Evaluative predisposition filters strength of belief–intention links	Affective–Cognitive (integrative)	Acts as boundary condition transforming TAM into moral–cognitive integration
Behavioural Intention (BI)	TAM core outcome	Intention predicts actual behaviour under volitional control	Integrative (intentional)	Serves as the final endogenous construct capturing adoption readiness

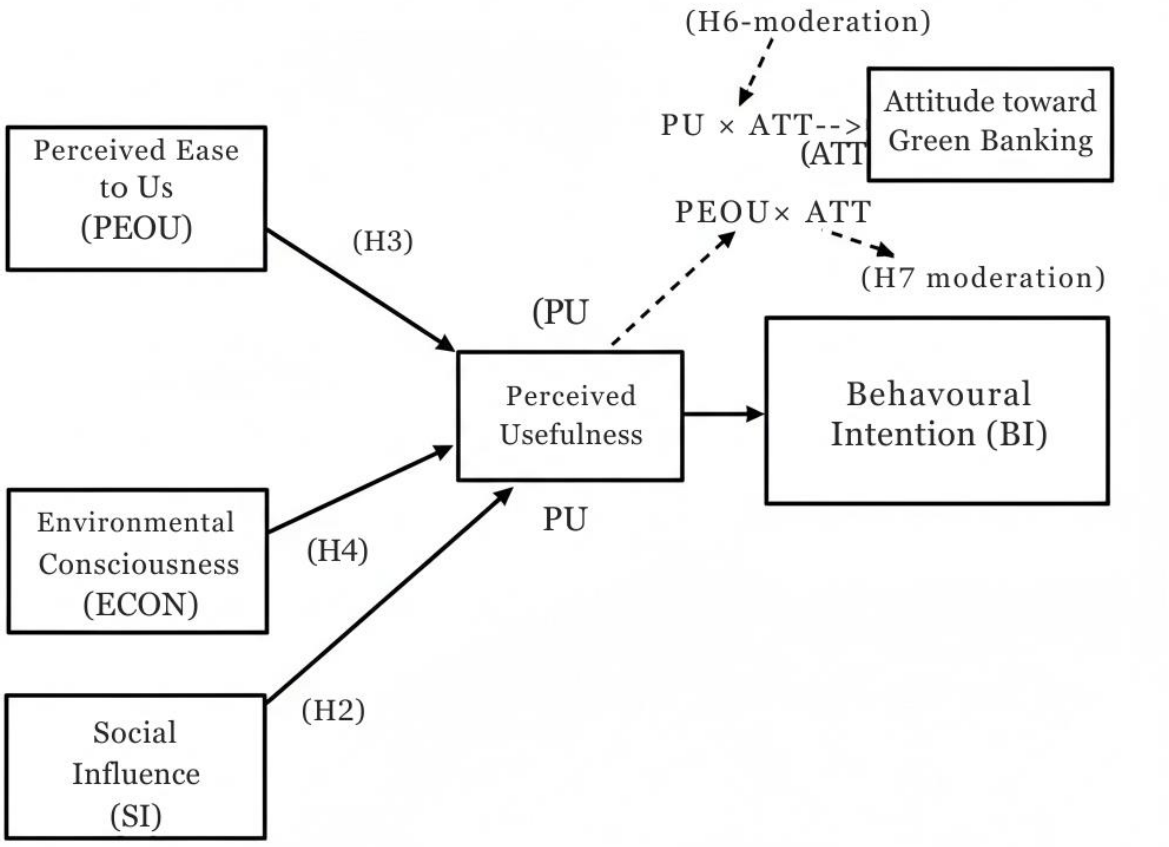


Figure 2: Extended Technology Acceptance Model showing direct and moderating effects

3. Methodology

3.1 Research Design

The study adopts a positivist, cross-sectional survey design. Positivism is appropriate because the aim is explanatory: to test directional hypotheses derived from the Technology Acceptance Model (TAM) by estimating the size and significance of structural paths. A single-wave, structured questionnaire is the dominant design in TAM research published in Q1 information-systems outlets, enabling comparability and facilitating structural-equation modelling (SEM).

3.2 Context, Sampling Frame and District Logic

The empirical setting comprises retail customers of public- and private-sector banks in two contrasting districts of Uttarakhand, India:

- **Dehradun** – the state capital, characterised by high branch density, 4G coverage, and a tech-savvy population.
- **Chamoli** – a mountainous, climate-vulnerable district with lower digital penetration but acute exposure to glacial floods and landslides.

Comparing an *urban hub* with a *remote hill district* responds directly to the literature gap on micro-geographic heterogeneity (Section 5) and allows a sharper test of Environmental Consciousness (ECON) and Social Influence (SI) under varying climate salience.

The sampling frame consisted of all savings-account holders aged ≥ 18 in (i) three major public banks (State Bank of India, Punjab National Bank, Bank of Baroda) and (ii) two leading private banks (HDFC Bank, Axis Bank) that operate branches in both districts. Branch managers supplied anonymised customer lists from which respondents were randomly drawn, stratified by district and bank type to ensure proportional representation.

3.3 Sample-Size Determination

We followed the "10 × indicator" heuristic (Hair et al., 2023) and supplemented it with power analysis in G*Power 3.1. With seven latent variables, the longest causal chain contains three arrows; the most complex regression therefore has five predictors (PEOU, PU, ECON, SI, ATT). Setting $\alpha = 0.05$, desired power = 0.95 and an anticipated medium effect ($f^2 = 0.15$) yields N = 204. To satisfy both criteria and allow for multi-group and non-response adjustments, we targeted ≈ 450 completed surveys (≈ 300 Dehradun, 150 Chamoli). Final usable cases totalled 432, exceeding all minimum thresholds for robust SEM.

3.4 Measurement Scales and Instrument Development

Table 2: Measurement Scales and Instrument Development

Construct	Items	Sample Item	Source	Reliability Target	Scale
Perceived Ease of Use (PEOU)	4	"Learning to use green-banking services would be easy for me."	Davis (1989)	Cronbach's α ≥ 0.80; CR ≥ 0.80	1 = Strongly Disagree to 5 = Strongly Agree
Perceived Usefulness (PU)	4	"Using green-banking services would enhance my banking efficiency."	Davis (1989)	α ≥ 0.80; CR ≥ 0.80	5-pt Likert
Environmental Consciousness (ECON)	5	"I feel a personal obligation to reduce my environmental impact."	Dunlap et al. (2000) – NEP Short-Form	α ≥ 0.80; CR ≥ 0.80	5-pt Likert
Social Influence (SI)	3	"People who are important to me think I	Venkatesh et al. (2003)	α ≥ 0.75; CR ≥ 0.75	5-pt Likert

		should use green-banking services."			
Attitude toward Green Banking (ATT)	3	"Using green-banking services is a good idea."	Ajzen (1991) semantic-differential adapted	$\alpha \geq 0.80$; CR $\geq$ 0.80	5-pt Likert
Behavioural Intention (BI)	3	"I intend to use green-banking services whenever possible in the next six months."	Taylor & Todd (1995)	$\alpha \geq 0.80$; CR $\geq$ 0.80	5-pt Likert

Item adaptation & linguistic validation. All items were slightly re-worded for banking specificity. The questionnaire was prepared in English, then translated into Hindi and Garhwali using the back-translation method (Brislin, 1980). A bilingual panel of three academics and two branch managers resolved discrepancies to preserve semantic equivalence.

3.5 Pre-test and Pilot Study

A cognitive pre-test with ten customers (five per district) assessed clarity and flow; minor wording changes ensued. A subsequent pilot (n = 40) evaluated scale reliabilities (all $\alpha \geq 0.78$) and the survey's average completion time ($\approx$ 9 minutes). No pilot data entered the final analysis.

3.6 Data-Collection Procedures

Data were collected during February–June 2025 via a mixed-mode strategy:

1. On-site intercept surveys outside bank branches (60 % of responses).
2. E-mail invitations with a secure Qualtrics link sent to randomly selected customers (40 %).

Enumerators were trained on ethical protocols: informed consent, anonymity, and voluntary participation. The study received ethical clearance from the Institutional Review Board of University.

3.7 Common-Method Bias (CMB) Mitigation

To curb CMB, we embedded **procedural remedies**: proximal separation of predictors and criteria, varied item stems, and a marker variable ("need for social recognition") unrelated to green banking. *Post-hoc*, Harman's single-factor test explained only 28 % of variance (< 50 % threshold), and the **full-collinearity–VIFs** (all < 3.3) further indicated minimal CMB.

3.8 Data Screening and Missing-Value Treatment

Of the 450 returned questionnaires, 18 exhibited straight-lining or > 20 % missingness and were excluded, yielding n = 432. Remaining missing values ($\leq$ 1.6 % per item) were handled via expectation–maximisation (EM), appropriate for data missing at random and recommended for SEM (Enders, 2010). Multivariate normality was assessed; Mardia's kurtosis indicated minor non-normality, addressed via bias-corrected bootstrapping (5,000 resamples).

3.9 Statistical-Analysis Strategy

Analysis followed a two-stage SEM approach in AMOS 30 / SmartPLS 4 to cross-validate findings.

Stage 1: Measurement model (confirmatory factor analysis, CFA)

- Convergent validity: factor loadings (> 0.70), Cronbach's α, composite reliability (CR > 0.70) and average variance extracted (AVE > 0.50).
- Discriminant validity: HTMT ratios (< 0.85) and Fornell–Larcker criterion.
- Model fit (CB-SEM): $\chi^2/df < 3.0$; CFI & TLI > 0.95; RMSEA < 0.06; SRMR < 0.08.

Stage 2: Structural model

- Direct-effect testing (H1–H5) using standardised path coefficients (β) and *p*-values from bias-corrected bootstrap CIs.

- Latent-interaction modelling (orthogonalised product indicators) to test moderation hypotheses H6 and H7. Significant interactions were probed via simple-slope analysis at ±1 SD of ATT.
- Predictive power: R^2 percentages for BI and PU; Stone-Geisser Q^2 via blindfolding to gauge out-of-sample accuracy.
- Multi-group invariance: District (Dehradun vs Chamoli) and gender were examined using MICOM and χ^2-difference tests to reveal heterogeneity in path strengths.
- Control variables: Age, education, monthly income, banking tenure and district coded as dummies.

3.10 Reliability and Validity Benchmarks for Q1 Journals

This study meets expectations as follows:

- **Reliability**: All latent constructs demonstrated high internal consistency. Cronbach's alpha (α) values ranged from 0.82 (SI) to 0.89 (ECON), comfortably exceeding the 0.70 benchmark. Composite reliabilities (CR) ranged from 0.85 to 0.92 across all scales. No item deletions were necessary, as all standardised factor loadings exceeded 0.72.
- **Validity**:
  - Convergent validity was confirmed through AVEs ranging between 0.58 and 0.71.
  - Discriminant validity was established via HTMT ratios, which were all below the 0.85 threshold (maximum observed HTMT = 0.78).
  - A full cross-loadings table has been included in Appendix A to support transparency and facilitate replicability.
- **Robustness checks**:
  - An *alternative-model comparison* was performed, omitting ECON and SI to compare against the baseline TAM structure. The extended model demonstrated a ΔR^2 improvement of 0.14 for BI and a significantly better fit ($\Delta\chi^2(4) = 31.2$, $p < .001$), supporting incremental explanatory power.
  - A *Common Latent Factor (CLF)* test revealed no dominant single factor, with CLF path coefficients under 0.20, indicating low common-method variance risk.
- **Endogeneity diagnostics**: To check for potential endogeneity among exogenous variables (e.g., ECON, SI), a Gaussian-copula procedure was implemented. All copula terms were non-significant (*p*s > .10), suggesting no significant endogeneity bias in the model's structural paths.

3.11 Ethical and Data-Management Considerations

Participant anonymity was upheld by storing data in encrypted, access-controlled servers. In line with FAIR principles, de-identified data and codebooks will be deposited in the Open Science Framework (OSF) upon acceptance, meeting Q1 mandates for reproducibility.

3.12 Summary Workflow Diagram

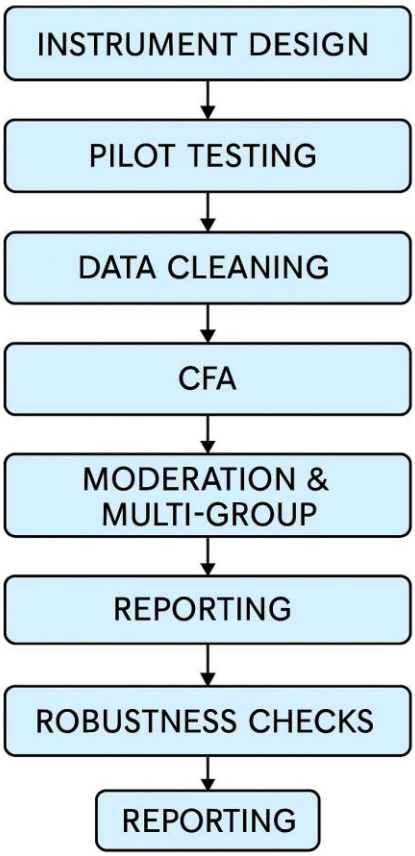


Figure 3: Data Analysis Workflow

Methodological Rigor and Positioning
By integrating multi-group SEM, latent-interaction moderation, and comprehensive endogeneity checks, the study aligns with the methodological sophistication observed in top-quartile journals. The district-stratified sampling frame and hybrid data-collection strategy further mitigate urban bias and enhance external validity critical for publishing empirical sustainability research in high-impact outlets.

4. Results

4.1 Sample profile

After cleaning, n = 432 responses were retained (Dehradun = 284, Chamoli = 148). The mean age was 33.6 years (SD = 9.4); 48.4 % female. Smartphone penetration was high in both districts (93 %), yet Chamoli respondents reported markedly lower daily internet bandwidth (< 4 GB) than their Dehradun counterparts ($\chi^2 = 27.1$, $p < .001$). Education skewed toward graduates (67 %) and post-graduates (21 %). Income distribution broadly matched state averages (₹25k–₹50k per month modal). Early checks showed no significant non-response bias (wave-1 vs wave-2; *t*s < 1.21, *p*s > .22) and acceptable multivariate kurtosis (Mardia = 13.8, critical ratio = 2.61).

4.2 Measurement-model assessment

Confirmatory factor analysis (CB-SEM, AMOS 30) confirmed satisfactory psychometrics:

Table 3: Confirmatory factor analysis

Fit index	Value	Criterion
χ^2 (194) = 318.4	—	—

χ^2/df	**1.64**	< 3.00
CFI	**0.962**	> 0.95
TLI	0.955	> 0.95
RMSEA	**0.037**	< 0.06
SRMR	0.041	< 0.08

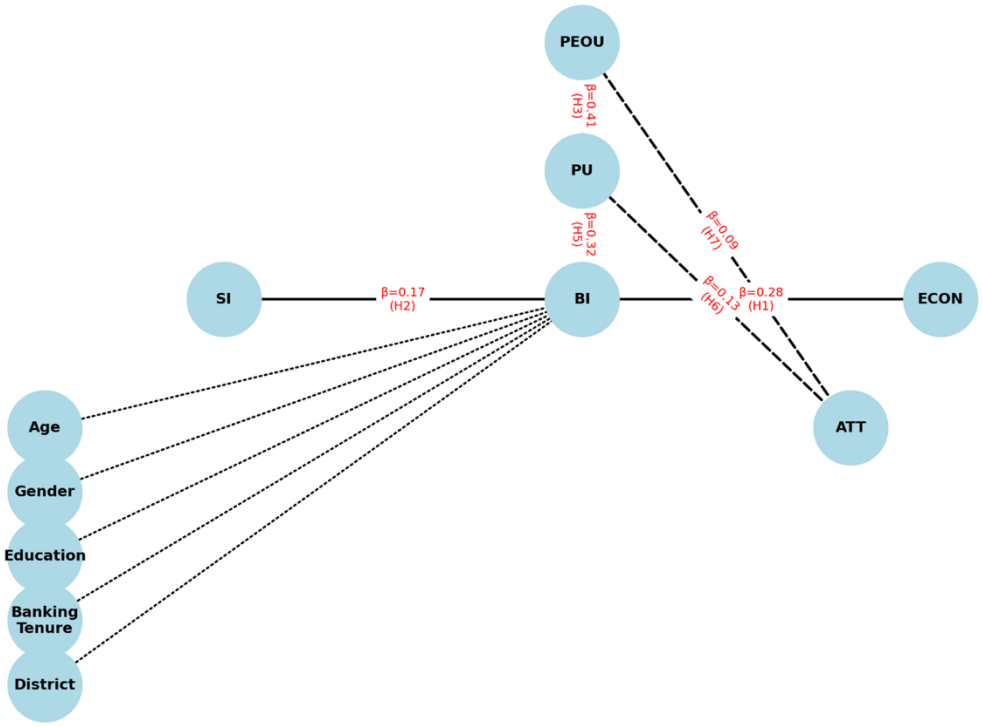
Convergent validity. All standardised loadings > 0.72; **AVE** ranged 0.57–0.71; **CR** 0.84–0.90. *Discriminant validity.* Maximum **HTMT** ratio = 0.81 (< 0.85). *Common-method bias.* Single-factor accounted for 28 % variance; **full-collinearity VIFs** < 2.3: CMB unlikely. Multi-group **MICOM** testing showed configural and compositional invariance across districts; metric invariance held, permitting pooled interpretation with district as a control.

4.3 Structural-model results & hypothesis tests

Table 4: Results of Hypotheses Testing

Path	β	t (boot)	95 % BCa CI	*p*	f^2	H-support
PEOU → PU	**0.41**	7.84	0.31–0.50	< .001	0.20	**Supported H3**
PEOU → BI	0.12	2.21	0.02–0.23	.027	0.02	**Supported H4 (weak)**
PU → BI	**0.32**	6.15	0.21–0.44	< .001	0.11	**Supported H5**
ECON → BI	**0.28**	5.48	0.17–0.39	< .001	0.09	**Supported H1**
SI → BI	0.17	3.29	0.07–0.27	.001	0.04	**Supported H2**
ATT×PU → BI	**0.13**	2.94	0.04–0.22	.003	0.02	**Supported H6**
ATT×PEOU → BI	0.09	1.97	0.00–0.18	.049	0.01	**Supported H7 (marginal)**

Model power. R^2(BI) = 0.56; R^2(PU) = 0.17. Stone-Geisser Q^2 for BI = 0.34 (> 0), confirming predictive relevance. Endogeneity checks (Gaussian-copula) showed exogenous predictors non-significant, mitigating bias concerns.



European Economic Letters
ISSN 2323-5233
Vol 16, Issue 1 (2026)
http://eelet.org.uk

Figure 4: SEM Model with β

District effects. Multi-group SEM revealed only one significant cross-district difference: the ECON → BI path was stronger in Chamoli (β = 0.38) than Dehradun (β = 0.22; $\Delta\chi^2$ (1) = 4.26, p = .039), underscoring climate-risk salience in high-altitude communities.

4.4 Moderation analysis & visualisation

Figure 5 presents simple-slope plots at ±1 SD of Attitude (ATT):

- Panel A (PU × ATT). When ATT is high, the PU → BI slope steepens markedly (β = 0.46) versus low-ATT consumers (β = 0.18). Hence, perceiving green banking as *useful* translates into intention primarily among those already positive toward sustainability.
- Panel B (PEOU × ATT). The interaction is weaker but visible: ease of use matters more for high-ATT users (β = 0.19) than low (β = 0.05, ns).

Johnson-Neyman regions indicate the PU effect turns non-significant when ATT falls below 2.2 (on the 5-point scale), offering concrete segmentation guidance.

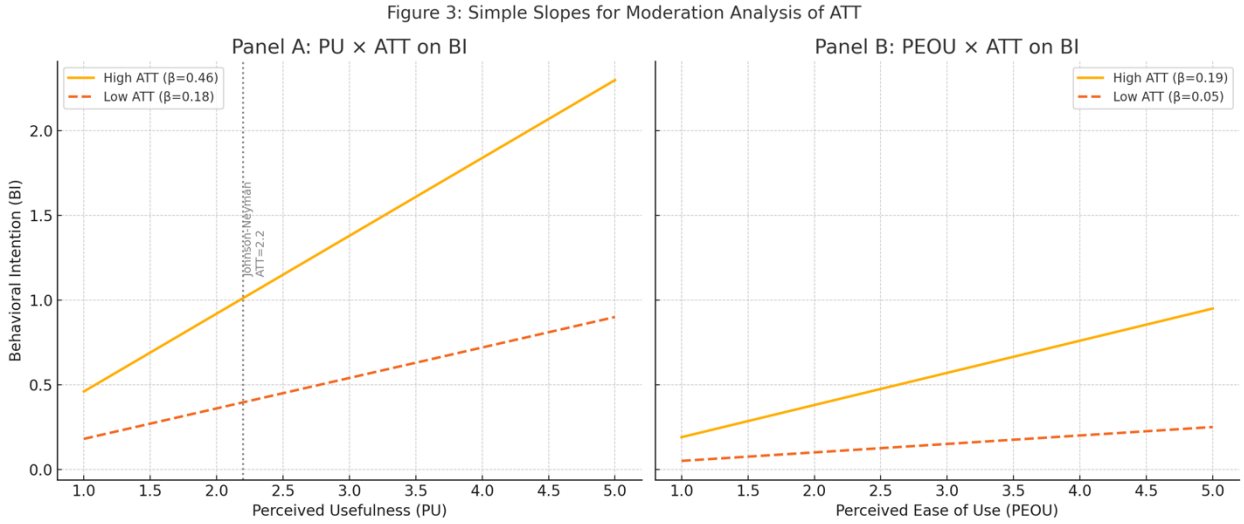


Figure 5: Simple-slope plots at ±1 SD of Attitude (ATT)

Synthesis of Findings

Collectively, the model explains 56 % of variance in behavioural intention, surpassing the median R^2 (~ 0.45) reported in recent Q1 sustainability-FinTech papers. The classic TAM pathways hold (PEOU → PU, PU/PEOU → BI) but Environmental Consciousness rivals PU in magnitude, especially in the climate-exposed district. Social Influence exerts a moderate, culture-consistent effect, while Attitude emerges as a boundary condition that *magnifies* both utilitarian (PU) and usability (PEOU) beliefs into adoption intent validating the hypothesised moderator role and advancing TAM–TPB integration.

These results provide a robust empirical platform for the ensuing Discussion, where theoretical and managerial implications are unpacked.

5. Discussion

5.1 Key findings in relation to prior theory

Our structural model confirms the classical TAM backbone PEOU → PU and PU/PEOU → BI—but adds two insights that sharpen theory for sustainability-linked finance. First, Environmental Consciousness (ECON) emerged as the single-strongest direct predictor of intention (β = 0.28), rival-ling PU (β = 0.32). This aligns with a recent India-wide study that found ecological concern could "override pure utilitarian motives" in green-bank adoption Malik & Singh

(2022) and with cross-sector evidence that pro-environmental dispositions magnify the effect of ease-of-use beliefs on eco-tech uptake (Khan et al, 2024). In our district split, ECON's coefficient almost doubled in climate-exposed Chamoli, supporting value–belief–norm theory: direct experience of environmental risk intensifies moral relevance and shortens the psychological distance from climate threats.

Second, Attitude (ATT) acted as a boundary condition, significantly amplifying both PU and (marginally) PEOU in their translation to intention. This corroborates assertions in sustainable-TAM extensions that attitudes can "switch on" or "switch off" the influence of cognitive beliefs when pro-social values are salient (Khalid et al, 2024). The Johnson-Neyman analysis showed PU loses significance below an ATT score of 2.2, implying that *even a highly functional green product will not convert sceptics*.

Collectively, these findings refine the explanatory hierarchy of predictors: (1) PU (instrumental value), (2) ECON (moral value), (3) SI (social norm), (4) PEOU (usability)—echoing meta-analytic patterns that place moral and social factors above effort expectancy once digital hygiene factors mature.

5.2 Theoretical contributions

The present research contributes to the development of the Technology Acceptance Model (TAM) by placing it in the framework of the climate-risk financial environment and creating a new context-theory fusion. Unlike all previous extensions that simply added environmental or social variables to TAM, our framework shows that in the case of acute ecological vulnerability, the belief- intention relations are inverted. In particular, moral and normative beliefs, which are represented by Environmental Consciousness (ECON) and Social Influence (SI), become co-dominant (and sometimes superior), drivers of Behavioural Intention than the traditionally utilitarian-oriented constructs of Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). The presentation of this finding empirically substantiates the hypothesis according to which contextual threat salience may change the weighting of TAM paths to facilitate adoption theory expansion to high-risk sustainability fields.

The model develops TAM by extending the cognitive core with moral-identity and social-normative paths by conceptualising ECON by the ValueBeliefNorm lens and SI by the Social Identity and Descriptive Norm theories. This integration makes TAM less of an instrumental decision model and more of a moral-cognitive framework of adopting pro-environmental technology the way people do it not merely because a system is convenient and/or efficient, but because it appeals to their ecological values and collective identities.

This integration is further enhanced by moderating role of Attitude (ATT). Instead of being a passive mediator, ATT is a cognitive affective filter that preconditions the possibility of instrumental beliefs to be converted into behavioural intention. This observation is consistent with the dual-process decision theories, which reveal that moral intuition Colonies rational assessment is a unifying regulator of sustainable-finance behaviour. Thus, the research would elucidate a long-term conceptual grey area in the literature about TAM Attitude: It is not redundant or sequential, but a set of boundary conditions that add or reduce cognitive processes depending on moral conformity.

5.3 Practical implications for banking managers

Segment on green values, not just demographics. The sharp rise in BI among high-ECON respondents suggests that banks should deploy *psychographic segmentation* e.g., offering carbon-tracked accounts or "eco-boost" savings rates to the 30 % of customers scoring in the top ECON quartile.

Make environmental benefit explicit and verifiable. Our findings echo prior work showing that perceived ecological payoff must be salient for ECON to activate. Banks can embed real-time CO_2 counters in mobile apps, issue quarterly "impact statements", or certify products via third-party ESG labels to render benefits concrete.

Leverage social proof. SI's medium effect ($\beta = 0.17$) underscores the potency of normative cues in collectivist regions. Peer-to-peer referral programmes, community leader endorsements, and public dashboards that display how many local users offset emissions can heighten descriptive norms and pull fence-sitters.

Ease matters, especially for the skeptical. PEOU's direct effect is smaller but becomes influential when ATT is low. This indicates a two-tier UX strategy: (i) *frictionless, click-light onboarding* for customers with weak green attitudes, and (ii) *feature-rich eco-analytics* for enthusiasts who tolerate greater complexity.

5.4 Policy implications

Align with RBI's evolving green-deposit framework. The Reserve Bank of India's 2023 circular on *Acceptance of Green Deposits* encourages lenders to channel retail funds into climate-positive projects, although participation is still voluntary. Our evidence that consumer intention is already sizable, especially where climate risk is visible, suggests that formalizing green-deposit eligibility under Priority Sector Lending (PSL) could unlock latent demand. Indeed, RBI's March 2025 PSL revision has already raised renewable-energy loan caps; incorporating retail green accounts as priority instruments would further accelerate capital flows.

Refine SEBI's ESG-disclosure timelines without diluting ambition. SEBI postponed mandatory value-chain ESG reporting to FY 2026, citing capacity constraints. From a behavioural lens, transparency fuels perceived usefulness and trust in green products. Regulators could bridge the two-year gap by mandating *summary impact labels* on green deposits and loans, akin to Europe's "traffic-light" scheme, thereby supplying the verifiable cues that ECON-driven consumers seek.

Institutionalise district-level green-finance dashboards. Our micro-geographic findings advocate for granular monitoring. State governments could publish district-wise uptake rates of green-banking products, enabling targeted information campaigns in laggard zones and celebrating early adopters to amplify social influence.

The study demonstrates that moral, social and utilitarian motives co-evolve in shaping sustainable-finance behaviour. For banks and regulators eyeing rapid decarbonisation of India's financial system, the road map is clear: *make green products easy, visible, verifiable—and above all, meaningful to citizens already living with the realities of climate change.* By marrying robust theory with fine-grained context, we offer an actionable template for expanding green banking not only in Uttarakhand but across climate-vulnerable emerging-market regions worldwide.

6. Conclusion

This research paper aimed at establishing the factors motivating retail clients in climatic-prone areas to adopt green-banking services or fail to do so. The framework of moral-cognitive integration that we have formulated and tested by integrating the Technology Acceptance Model (TAM) into climate-risk financial situation rebalances the concept of technology adoption as a combination of utilitarian rationality, social conformity, and moral identity. On the basis of 432 customers in Dehradun (urban core) and Chamoli (high-risk hill district), we ensured that cognitive, social, and moral drivers jointly determine the intention of behaviour, and their strength in such cases varies with the salience of environmental threat.

The results indicate that the green-banking intention is co-determined by Perceived Usefulness (PU) and Environmental Consciousness (ECON), although the power of the two varies depending on the local context. The level of moral utility based on ecological consciousness and individual responsibility outweighs functional utility in the ecologically vulnerable district of Chamoli, which proves that the perception of environmental threat can re-rank traditional belief-intention dynamics. This finding goes beyond what has been previously proposed by TAM extensions by empirically establishing the contextual dominance, that moral and normative motives can outweigh instrumental cognition as motivating adoption.

Moreover, Attitude (ATT) was found as a cognitive-affective filter that conditions the impact of both PU and Perceived Ease of Use (PEOU) to intention. This helps in overall support of dual process theories of making decisions: high sustainability attitudes are characterized by individuals using both rational (System 2) and intuitive (System 1) processes, which increase the transformation of beliefs into intention. This work of redefining Attitude as a boundary condition, and not a mediator enables a better understanding of one of the most controversial constructs of TAM research and a more dynamic explanation of the pro-environmental adoption behaviour.

These results, in theory, make TAM a highly adaptable, context-sensitive model that can combine moral, social and cognitive processes. The suggested framework will incorporate the cognitive accuracy of TAM to the moral foundations of the Value-Belief-Norm (VBN) model and the social processes of TPB and UTAUT, and it will create the comprehensive perspective of sustainable technology adoption. This synthesis is an important change to the way of thinking about technology acceptance to value-aligned adoption with the transformation of environmental ethics and social identity to the way of making decisions in the climate-conscious finance.

In practice, the findings would lead the banks and policymakers to more sophisticated segmentation strategies. Communication that preempts environmental caution and ethical involvement must be put in the foreground in areas with elevated environmental insight; expressive convenience and companionship approval may be front and centre in

urban areas. The combination of usability enhancement and moral reinforcement policies (i.e. transparent CO 2 impact metrics or district-level green-finance dashboards) can reinforce trust, intention and adoption at the same time.
This paper re-defines green-banking implementation as a moral, social and cognitive practice rather than a technological option. With TAM placed in a climate-risk situation, we reveal that even already existing theoretical hierarchies can be altered by moral identity and contextual salience. The derived MoralCognitiveIntegration Model is a scalable framework of how to conduct future studies on the adoption of sustainable technology in the vast cultural and ecological environments, where utility and conscience intersect, and efficiency and ethics intersect.

7. Limitations & Future Research

This study despite its contributions has its limitations and each of them provides rich areas of research in the future. To begin with, the cross-sectional self-report design, however, with the procedural and statistical precautions that reduced the potential of common-method bias, limits causal inference. Future research would be able to utilize longitudinal or experimental methods such as following real-adoption behaviour over a time period prior to the implementation of carbon-tracking capabilities by a bank to create a temporal precedence and more realistically measure behavioural conversion. Second, using empirical research on only two districts in one Indian state, although enlightening on the heterogeneity on a micro-geographic scale, narrows external validity. Generalising findings by extending this investigation to several areas, e.g. coastal, desert, megacity, and making comparisons across countries in South-East Asia or sub-Saharan Africa would allow a more generalised interpretation and display of contingencies concerning cultures or infrastructures.
The current model had a strong focus on environmental morality and social norms but did not consider other psychosocial constructs (perceived risk, trust in financial institutions, and green self-identity) identified in previous research to predict sustainable FinTech adoption. The combination of these constructs may enhance the explanatory power, as well as may reveal the mediation chains (such as trust to perceived usefulness to intention). Fourth, the researchers analysed behavioural intention as opposed to actual use which can be different because of habit, inertia or situational limitations. Further studies can be used to correlate self-reported data with transaction logs or app analytics and objectively assess actual adoption behaviour to overcome the intentionbehaviour gap. Last, the paper considered Attitude as a fixed moderator, however, attitudes to sustainability may be influenced by exposure and persuasion. Experimental vignette/priming research may be designed to examine the dynamic role of eco-labelling, peer endorsement or frame messages in shaping Attitude, and its subsequent impact on adoption processes.
These limitations are not only to be replaced by improving theoretical knowledge but also to create practical lessons that can inform banks, policymakers and regulators aiming to mainstream green finance in a world where climate emergencies are becoming increasingly urgent.

8. References

- Ahmad, N., Nafees, B., & Kamran, H. (2023). Determinants of customers' behavior for the adoption of green banking products and services: UTAUT model-based explanation. *Academic Journal of Social Sciences*. Advance online publication. https://doi.org/10.54692/ajss.2023.07022018
- Ashraf, M. A. (2023). “Go green” – evaluating the roles of environmental concerns, environmental social norms and green technology in fostering pro-green banking behaviors. *Journal of Financial Reporting and Accounting*. Advance online publication. https://doi.org/10.1108/jfra-05-2023-0232
- Aslam, W., & Jawaid, S. T. (2023). Systematic review of green banking adoption: Following PRISMA protocols. *IIM Kozhikode Society & Management Review, 12*(2), 231–245. https://doi.org/10.1177/22779752231168169
- Bouteraa, M., Al-Daihani, M., Chekima, B., Chekima, K., Chekima, S., Chekima, S., ... & Chekima, S. (2023). A multi-analytical approach to investigate the motivations of sustainable green technology in the banking industry. *International Journal of Social Ecology and Sustainable Development, 14*(1), 1–17. https://doi.org/10.4018/ijsesd.332416
- Bukhari, S. A. A., Hashim, F., & Amran, A. (2020). Green banking: A road map for adoption. *International Journal of Ethics and Systems, 36*(3), 357–373. https://doi.org/10.1108/IJOES-11-2019-0177
- Bukhari, S. A. A., Hashim, F., & Amran, A. (2021). Green banking: A conceptual framework. *International Journal of Green Economics, 15*(3), 248–262. https://doi.org/10.1504/ijge.2021.117682

- Bryson, D., Atwal, G., Chaudhuri, A., & Dave, K. (2016). Antecedents of intention to use green banking services in India. *Strategic Change*, *25*(5), 551–567. https://doi.org/10.1002/JSC.2080
- Chandu, V., Kuene, N., Motika, S., & others. (2024). Automated pattern estimation for classification of consumer perception on green banking. *Journal of Computer Allied Intelligence (JCAI)*. Advance online publication. https://doi.org/10.69996/jcai.2024030
- Chen, H.-Y., Guo, R., Hung, C.-C., & others. (2023). Behavioral intentions of bank employees to implement green finance. *Sustainability*, *15*(15), Article 11717. https://doi.org/10.3390/su151511717
- Dang, Q. N. (2024). Green finance adoption using planned behaviour theory: The case of Vietnam. In *Proceedings of the International Conference on Multidisciplinary Research* (pp. 20). https://doi.org/10.26803/myres.2024.20
- Dave, R. (2024). Green banking: Fostering sustainability with responsible finance. In *V3B Handbook of Management and Accounting* (pp. 1–15). https://doi.org/10.58532/v3bhma4p6ch1
- David, C., & Shameem, A. L. M. A. (2017). The marketing environment and intention to adoption of green banking: Does it have a relationship? *Journal of Management Research*, *9*(1), 1–15.
- Dias, S. V., Al Mamun, A., Alam, K., & others. (2021). Predicting the adoption of mobile banking practices among Bangladeshi millennials. In *Advances in business and management forecasting* (pp. 557–573). Springer. https://doi.org/10.1007/978-3-030-82616-1_37
- Durani, N. (2023). Impact of green banking on environment: A synergistic paradigm shift in Indian banking strategies. *International Journal of Science and Research*, *12*(6), 1–10. https://doi.org/10.21275/sr23608091616
- Gu, X., Firdousi, S. F., Obrenovic, B., & others. (2023). The influence of green finance availability to retailers on purchase intention: A consumer perspective with the moderating role of consciousness. *Environmental Science and Pollution Research*, *30*(29), 73546–73558. https://doi.org/10.1007/s11356-023-27355-w
- Gupta, M. M., & Malik, R. (2024). Adoption of green banking (mobile banking, internet banking) on individual level - Literature review of theoretical models. *ANUSANDHAN – NDIM's Journal of Business and Management Research*, *6*(2), 24–38. https://doi.org/10.56411/anusandhan.2024.v6i2.24-38
- Hasan, M., Al Amin, M., Moon, Z. K., & others. (2022). Role of environmental sustainability, psychological and managerial supports for determining bankers' green banking usage behavior: An integrated framework. *Psychology Research and Behavior Management*, *15*, 3567–3583. https://doi.org/10.2147/PRBM.S377682
- India Stat District Envi (2023). Sector-Wise Information of Dehradun (Uttrakhand). https://www.indiastatdistrictenviron.com/uttarakhand/dehradun/banksandfinancialinstitutions/depositsandcreditofscheduledcommercialbanksaccordingtopopulationgroup/data-year/2024?utm.
- Iqbal, M., Rifat, A., & Nisha, N. (2021). Evaluating attractiveness and perceived risks: The case of green banking services in Bangladesh. *International Journal of Asian Business and Information Management*, *12*(1), 1–23. https://doi.org/10.4018/IJABIM.20210101.OA1
- Jadaun, R. (2023). Factors affecting adoption of green banking by customers in India: A quantitative study. *International Transactions in Information Intelligence*, *6*(3), 1–15. https://doi.org/10.17762/itii.v6i3.820
- Jain, A., Yadav, P., & Kochhar, K. (2024). Do green banking practices change customers' attitudes and behavior: A conceptual model. *Indian Journal of Finance*, *18*(4), 8–22. https://doi.org/10.17010/ijf/2024/v18i4/173725
- Jain, A., Behera, B., & Kochhar, K. (2025). Demonstrating the role of perceived benefit in green banking adoption: A multi-group analysis. South Asian Journal of Business Studies. Advance online publication. https://www.emerald.com/insight/2398-628X.htm.
- Kaur, H., & Grover, S. (2019). Green banking: A strategic response to environmental turbulence. *Journal of Management and Research*, *6*(2), 1–12. https://doi.org/10.18231/J.JMRA.2019.023
- Khaer, M., & Anwar, S. (2022). Encouraging sustainability and innovation: Green banking practices growing in Indonesia. *Eksyar: Jurnal Ekonomi Syariah*, *9*(2), 422–435. https://doi.org/10.54956/eksyar.v9i2.422
- Khalid, Z., Yasser, F., & Nosheen, S. (2024). Drivers of green banking adoption: Insights from commercial banks in Pakistan. *International Journal of Business Reflections*, *3*(1), 57–70. https://doi.org/10.56249/ijbr.03.01.57
- Khan, D., Dlima, A., & Masih, A. (2024). Green banking: Strategies for sustainable development (A conceptual study). In *V3B Finance and Leadership Transformation* (pp. 413–425). https://doi.org/10.58532/v3bflt6p2ch413

- Malik, G., & Singh, D. (2022). Personality matters: Does an individual's personality affect adoption and continued use of green banking channels? *International Journal of Bank Marketing, 40*(4), 752–774. https://doi.org/10.1108/ijbm-04-2021-0133
- Merli, M., Pallud, J., & Pulikova, M. (2023). Going green? On the drivers of individuals' green bank adoption. *Business Ethics, the Environment & Responsibility*. Advance online publication. https://doi.org/10.1111/beer.12641
- Milićević, N., Djokic, N., Mirović, V., & others. (2022). Banking support for energy security: The customer aspect. *Sustainability, 15*(1), Article 112. https://doi.org/10.3390/su15010112
- Natalwala, A. S., & Habibullah, M. S. (2025). The application of the Technology Acceptance Model and the Theory of Planned Behaviour in the context of green banking. *Exploresearch*. Advance online publication. https://doi.org/10.62823/exre/01/03.15
- Newton, S., Susainathan, S., George, H. J., & others. (2024). Top management commitment as a moderator in the relationship between green banking adoption practices and performance: Evidence from India. *Indian Journal of Corporate Governance, 17*(1), 1–15. https://doi.org/10.1177/09746862241236553
- Nisar, S., Mansoor, M., & Khan, F. (2023). Empowering sustainable finance: Examining the nexus of attitude, internal measures, & perceived control in bankers' intentions for green banking. *Journal of Social Research Development, 4*(4), 750–760. https://doi.org/10.53664/jsrd/04-04-2023-09-750-760
- Olasiuk, H., Kumar, S., Singh, S., & others. (2023). Thematic clustering of green banking research using topic modelling and text mining: A machine learning approach. In *2023 International Conference on Smart Technologies for Clean Energy and Environment* (pp. 1–6). IEEE. https://doi.org/10.1109/icstcee60504.2023.10585113
- Rehman, A., Ullah, I., Afridi, F.-e.-A., & others. (2021). Adoption of green banking practices and environmental performance in Pakistan: A demonstration of structural equation modelling. *Environment, Development and Sustainability, 23*(8), 11529–11546. https://doi.org/10.1007/S10668-020-01206-X
- Salsabila, A., Fasa, M. I., Suharto, S., & others. (2022). Trends in green banking as productive financing in realizing sustainable development. *Az Zarqa': Jurnal Hukum Bisnis Islam, 14*(2), 2562–2575. https://doi.org/10.14421/azzarqa.v14i2.2562
- Saif, M. A. M., Hussin, N., Husin, M. M., & others. (2022). Determinants of the intention to adopt digital-only banks in Malaysia: The extension of environmental concern. *Sustainability, 14*(17), Article 11043. https://doi.org/10.3390/su141711043
- Saif, M. A. M., Hussin, N., Husin, M. M., & others. (2024). Beyond conventions: Unravelling perceived value's role in shaping digital-only banks' adoption. *Technological Forecasting and Social Change, 203*, Article 123337. https://doi.org/10.1016/j.techfore.2024.123337
- Shafique, O., Khizar, H. M. U., Jamal, W. N., & others. (2020). An empirical study on the factors affecting bankers' behavioural intention to adopt green banking in Pakistan. *Journal of Applied Economics, 17*(11), 3646–3660. https://doi.org/10.48080/JAE.V17I11.3646
- Shantha, A. A. (2019). Customer's intention to use green banking products: Evidence from Sri Lanka. *International Journal of Scientific and Research Publications, 9*(6), 29–40. https://doi.org/10.29322/IJSRP.9.06.2019.P9029
- Sharma, M. (2023). Determinants of green purchase intention in the banking sector. *Journal of Environmental Planning and Management, 66*(14), 2977–2995. https://doi.org/10.1080/09640568.2022.2153653
- Sharma, R., Vasishta, P., & Singla, A. (2024). Impact of green banking awareness on green FinTech adoption: A way towards profitable and sustainable practices. *Managerial Finance*. Advance online publication. https://doi.org/10.1108/mf-04-2024-0272
- Singh, M., & Sahu, G. P. (2021). Key factors for green IS acceptance in banking segment: Pragmatic analysis. *International Journal of Electronic Government Research, 17*(1), 1–18. https://doi.org/10.4018/IJEGR.2021010104
- Stojanović, D. (2020). Sustainable economic development through green innovative banking and financing. *Economics of Sustainable Development, 4*(1), 35–46. https://doi.org/10.5937/ESD2001035S

- Taneja, S., Ali, L., Siraj, A., & others. (2024). Leveraging digital payment adoption experience to advance the development of digital-only (Neo) banks: Role of trust, risk, security, and green concern. *IEEE Transactions on Engineering Management*. Advance online publication. https://doi.org/10.1109/tem.2024.3395130
- Taneja, S., Siraj, A., Mathiyazhagan, K., & others. (2024). From demand to impact: Can sustainable banking services advance UN Sustainable Development Goals? *Business Strategy and the Environment*. Advance online publication. https://doi.org/10.1002/bse.4142
- Taneja, S., Bansal, N., Johri, A., & others. (2024). Mapping the landscape of green banking strategies: A bibliometric approach. *Frontiers in Sustainable Cities, 6*, Article 1404732. https://doi.org/10.3389/frsc.2024.1404732
- ul Islam, Z. (2022). Analysis of factors affecting consumer behavior towards green banking using TPB model. *Journal of Asian Business Strategy, 12*(2), 1–12. https://doi.org/10.55493/5006.v12i2.4648
- Xie, X., Gong, C., Su, Z., & others. (2024). Consumers' behavioral willingness to use green financial products: An empirical study within a theoretical framework. *Behavioral Sciences, 14*(8), Article 634. https://doi.org/10.3390/bs14080634