

اعتماد و اقدام‌های اقلیمی در نظام بانکداری: شواهدی از ۳۴۰ بانک در ۳۳ کشور

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Trust and climate action in banking: Evidence from 340 banks across 33 countries

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Article Info	Abstract
Original Article Main Object: Economics Scope: Albania, Armenia, Azerbaijan, Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, Czech, Estonia, Georgia, Greece, Hungary, Jordan, Kazakhstan, Kosovo, Kyrgyzstan, Latvia, Lithuania, Moldova, Mongolia, Montenegro, Morocco, North Macedonia, Poland, Romania, Serbia, Slovakia, Slovenia, Tajikistan, Tunisia, Turkey, Ukraine, and Uzbekistan Received: 27 June 2026 Revised: 18 July 2026 Accepted: 21 July 2026 Published online: 03 August 2026 Keywords: climate change mitigation action, corporate environmental behavior, generalized trust, sustainable lending.	This study examines the relationship between generalized trust and banks' climate mitigation actions and organizational structures. Drawing on a unique dataset combining survey data from 340 banks across 33 countries, we find that generalized trust is positively associated with banks' climate actions across multiple dimensions. Our empirical strategy employs probit models for binary climate outcomes and ordinary least squares estimation for continuous outcomes, with country fixed effects and cluster-robust standard errors to account for unobserved heterogeneity and within-country correlation. Banks in high-trust regions are more likely to adopt explicit climate policies, engage in quantitative climate risk analysis, and initiate energy efficiency lending substantially earlier than banks in low-trust regions. The stronger relationship between trust and climate actions has important implications for understanding the social determinants of corporate environmental behavior. Climate change, as a global collective action problem, requires coordination across national boundaries, long-term commitment, and cooperation among diverse stakeholders. The urgency and salience of climate change as a policy issue make it particularly sensitive to social trust, as trust facilitates the cooperation and coordination necessary for addressing this global challenge.
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1. Introduction

Climate change poses one of the most significant challenges to the global economy, with profound implications for financial stability, economic development, and human welfare. The financial sector serves as a critical intermediary in allocating capital toward climate mitigation and adaptation investments. Banks, in particular, influence the low-carbon transition through their lending decisions, risk management practices, and strategic commitments to environmental sustainability. Consequently, policymakers and regulators have increasingly sought to understand the determinants of banks' engagement with climate-related issues.

While many enterprises have adopted environmental policies, the drivers of firm-level climate action remain underexplored, especially in emerging economies where formal regulations are often inconsistently enforced and informal institutions like trust play a central role. Trust, defined as "a psychological state comprising the intention to accept vulnerability based upon the positive expectations of the intentions or behavior of another" (Rousseau et al., 1998: 395), has been linked to higher economic growth (Knack & Keefer, 1997; La Porta et al., 1997; Algan & Cahuc, 2010) and financial development (Guiso et al., 2004). At the individual and organizational levels, trust facilitates cooperation by reducing opportunistic behavior (Gulati, 1995), lowers uncertainty by enabling credible commitments (Das & Teng, 1998), curbs opportunism in business relationships (Fisman & Khanna, 1999), and strengthens relational embeddedness through information sharing and mutual reliance (Uzzi & Lancaster, 2013). Recent studies extend these insights to climate action: trust increases individual engagement in energy-saving practices (Lübke, 2021), motivates personal action to address climate change (Gur, 2020), enhances willingness to protect the environment (Fairbrother, 2016), and strengthens endorsement of climate policies (Irwin & Berigan, 2013). At the macro level, trust contributes to lower greenhouse gas emissions by facilitating collective responses to environmental challenges (Carattini et al., 2015) and underpins stronger international climate cooperation by reducing transaction costs and fostering reciprocal commitments (Carattini & Jo, 2018; Jo & Carattini, 2021).

Sivonen et al. (2026) show that trust bolsters support for voluntary policies, particularly among those with lower climate concern, by increasing confidence in collective action. Hobman et al. (2026) observe that trust in scientists has grown in predictive power amid declining belief and rising denialism, suggesting that institutional trust serves as an anchor for climate attitudes. Au et al. (2026) identify trust as a social resource that facilitates cooperative behaviors like freecycle giving by reinforcing expectations of reciprocity and community support. Schroeder et al. (2025) contend that social trust flourishes in less politically charged settings, whereas political trust operates

independently, implying that different forms of trust serve distinct functions in climate governance. Goodhart and Vu (2026) find that firms in regions with higher levels of trust tend to be more engaged with climate change mitigation actions. Eichhorn and Grabbe (2025) report that most Europeans support climate action but have lost faith in governments to deliver fair transitions, with climate concern evenly distributed across socio-economic groups, indicating that political disillusionment may undermine the perceived legitimacy of climate policy. Mouti et al. (2026) find that environmental credit risk reduces bank profitability and solvency, though this effect is attenuated in countries with higher climate risk, suggesting that institutional awareness and trust in regulatory frameworks can buffer adverse financial outcomes.

However, most existing research focuses on individuals or countries, with limited attention to enterprise-level behavior despite firms being central to mitigation efforts. Trust within organizations shapes employee cooperation and commitment to sustainability initiatives, suggesting that enterprises in high-trust environments may be better positioned for effective climate action. This study fills this gap by investigating the relationship between *generalized trust*—trust in people generally (Yamagishi & Yamagishi, 1994)—and corporate climate mitigation. We focus on generalized trust over particularized trust for two reasons. First, generalized trust is more temporally stable (Uslaner, 2008; Bjørnskov, 2007; Lobez et al., 2025), making it suitable for capturing enduring social environments. Second, particularized trust fluctuates with specific relationships, whereas generalized trust reflects a broader, more persistent social climate.

A substantial literature examines corporate environmental behavior, emphasizing regulatory pressures, stakeholder demands, market incentives, and organizational characteristics. However, this work largely prioritizes formal institutions and economic incentives over social and cultural foundations. Despite extensive evidence that trust enables cooperation, collective action, and institutional effectiveness—reducing transaction costs, facilitating information sharing, and supporting complex relationships, its role in corporate environmental action has received limited empirical scrutiny. This gap is especially pronounced in the financial sector, where trust underpins banking relationships and may drive environmental engagement.

This study addresses this gap by examining the link between generalized trust and banks' climate mitigation actions. Using a unique dataset combining survey responses from 340 banks across 33 countries in Europe, Asia, and Africa (EBRD Banking Environment and Performance Survey, Round III) with regional trust measures from the World Values Survey Wave 7 and the Life in Transition Survey Round III, we investigate whether higher regional trust is associated with greater adoption of climate policies, more comprehensive climate risk

assessment, and earlier energy efficiency lending. Our empirical strategy employs probit models for binary outcomes and OLS for continuous outcomes, with country fixed effects and cluster-robust standard errors.

The remainder of this paper is organized as follows. Section 2 reviews the literature and develops hypotheses. Section 3 describes the data and methodology. Section 4 presents the empirical results. Section 5 discusses the findings, limitations, and endogeneity concerns. Section 6 concludes with implications for policy and practice.

2. Literature review and Hypothesis development

2.1. Generalized trust

Trust plays an important role in structuring society (Putnam, 2000; Fukuyama, 1995) and reducing transaction costs. As Fukuyama (1995: 26) articulates, trust is "the expectation that arises within a community of regular, honest and cooperative behavior, based on commonly shared norms." Where trust exists, transaction costs fall due to "less need to spell things out in lengthy contracts, less need to hedge against unexpected contingencies, fewer disputes, and less need to litigate if disputes arise" (ibid: 151). Moreover, trust lubricates social systems (Arrow, 1974), promotes competitive economies (Fukuyama, 1995), enhances relationships (Gulati, 1995), fosters cooperation (Das & Teng, 1998), lowers monitoring and management costs (Zand, 1972), diminishes agency costs (Macaulay, 1963; Ring & van de Ven, 1992; Uslaner, 2002; Howorth & Moro, 2012), and mitigates imperfect information, uncertainty, and risk (Fisman & Khanna, 1999; Uzzi & Lancaster, 2013).

Our study focuses on interpersonal trust, the trust an individual places in counterparties such as bank officers and borrowing firms (Zaheer et al., 1998; Hirsch et al., 2018). Within interpersonal trust, a vital distinction exists between generalized and particularized trust. Generalized trust (or social trust; Hardin, 2001; Taylor et al., 2007) refers to the belief that most people in society can be trusted, extending beyond immediate networks to encompass anonymous others and strangers (Yamagishi & Yamagishi, 1994). It is considered a form of social capital that facilitates cooperation, reduces transaction costs, and enables collective action across diverse social contexts (Putnam, 2000; Fukuyama, 1995). In contrast, particularized trust depends on shared similarities or specific relationships (Yamagishi & Yamagishi, 1994) and is directed toward individuals or groups with whom one has direct ties.

Generalized trust is stable over time (Uslaner, 2008; Bjørnskov, 2007) because it functions as a social norm transmitted across generations (Uslaner, 2008; Algan & Cahuc, 2010). Uslaner (2008) finds similar trust levels between U.S. immigrants and their ancestral countries, while Bjørnskov (2007: 3) confirms stability across World

Values Survey waves (1981–2000). Levels of generalized trust vary significantly across countries and regions, reflecting differences in institutional quality, historical experiences, cultural values, and social structures. In contrast, particularized trust is more malleable, as it depends on specific relationships, for instance, trust between a bank manager and a firm owner can grow over time as their relationship develops.

2.2. Trust and Corporate environmental behavior

The influence of trust on corporate environmental conduct operates through five interrelated mechanisms:

- a) Facilitating stakeholder cooperation and reducing transaction costs associated with environmental management (Fukuyama, 1995; Putnam, 2000);
- b) Enabling credible commitments and diminishing the need for extensive monitoring (Gulati, 1995; Das & Teng, 1998), whereas low-trust environments tend to deter such long-term engagements (Fisman & Khanna, 1999; Uzzi & Lancaster, 2013);
- c) Promoting information sharing with external bodies regarding environmental risks and opportunities (Bansal & Clelland, 2004);
- d) Supporting institutional capacity building for the adoption of sophisticated management practices; and
- e) Reducing the perceived risks associated with environmental innovation.

Empirical evidence concerning climate responses indicates that firms reduce carbon intensity through green innovation when confronted with climate risk (Yan et al., 2025), decrease energy consumption—particularly in the post-Paris Agreement period and within energy-intensive sectors (Srivastav & Kannadhasan, 2025)—and adapt more effectively to salient physical exposures (Li, 2025). These adaptive responses, however, are contingent upon firms' internal capacities, their specific risk exposures, and their willingness to absorb associated uncertainties.

At both individual and national levels, trust has been consistently shown to positively influence environmental behaviors. It enhances energy-saving practices (Lübke, 2021), encourages climate mitigation actions (Gur, 2020), strengthens willingness to protect the environment (Irwin & Berigan, 2013), and bolsters support for environmental protection across 47 countries (Fairbrother, 2016). Macro-level analyses further establish a link between higher levels of trust and lower greenhouse gas and CO₂ emissions (Carattini et al., 2015; Carattini & Jo, 2018; Jo & Carattini, 2021). More recently, Sivonen et al. (2026) demonstrate that higher generalized trust is associated with greater support for voluntary climate policies, especially among individuals with lower levels of climate concern. Understanding these dynamics is

essential for designing climate policies that command sufficiently broad public backing, thereby ensuring their long-term viability and effectiveness. Hobman et al. (2026) observe that alongside a trend of declining belief and increasing denialism, trust in scientists has grown in its predictive power over time. Similarly, Au et al. (2026) find that generalized trust serves as a critical social resource facilitating cooperative behaviors such as freecycle giving; when individuals trust others broadly, they tend to feel more confident that their generosity will be reciprocated or that the community will provide support in times of need. Goodhart and Vu (2026) analyze 34,801 enterprises across 41 countries during 2018-2023 and find that regions with higher levels of generalized trust, firms are more likely to adopt climate change mitigation actions.

Despite this wealth of evidence, limited research has examined how generalized trust influences enterprise-level climate actions, with existing studies predominantly focusing on trust within supply chains or trust in regulatory institutions. Drawing on institutional and social capital theory (Fukuyama, 1995; Putnam, 2000), trust facilitates cooperation, reduces transaction costs (Gulati, 1995; Das & Teng, 1998), and curbs opportunistic behavior (Fisman & Khanna, 1999; Uzzi & Lancaster, 2013). This theoretical foundation suggests that high-trust contexts are likely to encourage corporate mitigation efforts through enhanced employee cooperation, greater leadership confidence in long-term investments, and the reinforcement of stronger local environmental norms. Recent firm-level studies have begun to bridge this research gap. Vu (2027) finds a positive association between generalized trust and climate change beliefs, as well as support for environmental taxation, across 28 countries. Vu (2026) shows that firms adopting mitigation actions anticipate revenue growth, while Vu and Phuong (2026) demonstrate that Vietnamese enterprises located in high-trust provinces are more likely to adopt mitigation measures. Building upon this emerging body of work, the present study extends the literature by investigating how generalized trust shapes firms' climate mitigation behaviors, offering new insights into the micro-foundations of corporate environmental responsiveness.

2.3. Hypothesis development

Based on the theoretical framework outlined above, we develop the following hypotheses:

- H1.** Generalized trust is positively associated with banks' adoption of explicit climate policies and quantitative climate risk assessment.

Banks operating in high-trust regions should be more likely to adopt formal climate policies, as trust facilitates stakeholder cooperation, enables credible commitments, supports information sharing, and reduces the perceived risks of climate policy adoption. In addition,

banks in high-trust regions should be more likely to undertake quantitative analysis of climate-related risks, as trust facilitates access to information about climate risks, enables cooperation with external stakeholders who possess specialized expertise, and supports investment in technical risk assessment capabilities.

H2. Generalized trust is positively associated with earlier initiation of energy efficiency lending.

Banks in high-trust regions should initiate energy efficiency lending earlier than banks in low-trust regions, as trust reduces the perceived risks of innovation, facilitates information sharing about best practices, enables cooperation with borrowers and partners, and supports institutional capacity building for sustainable lending.

3. Methodology and Data description

3.1. Methodology

To test the hypotheses above, we adopt Model 1 as Equation (1).

$$\text{ACTION}_i = \alpha + \beta_1 \text{GTRUST}_i + \beta_2 \text{BANK}_i + \beta_3 \text{COUNTRY}_i + \mu_i + \text{FE (Country)} \quad (1)$$

where

- ACTION_i is the dependent variable of the bank i 's climate mitigation actions.
- GTRUST_i refers to generalized trust variable.
- BANK_i is a set of control variables for the bank i 's characteristics.
- COUNTRY_i is a set of control variables for the country's characteristics where the bank i is based.
- μ_i is the error term.

We also cluster standard errors at the country level.

3.2. Data description

Our dataset draws on three primary sources: the European Bank for Reconstruction and Development's Banking Environment and Performance Survey round III (hereafter BEPS 3), the World Values Survey Wave 7 (hereafter WVS 7), and the EBRD's Life in Transition Survey round III (hereafter LITS 3). BEPS 3 provides bank-level data, covering 345 banks across 34 countries during 2020–2021, with responses from Heads of Credit and CEOs.

To construct regional-level measures of generalized trust, we exploit the geographic information available in BEPS 3 and merge it with trust data from WVS 7 and LITS 3. Since neither survey individually covers all 34 countries in BEPS 3, we combine both: WVS 7 (2017–2022)

supplies trust data for 15 countries¹, while LITS 3 (2016) provides data for an additional 18 countries². Palestine is excluded from the final sample as it appears in neither survey.

While our trust measures (WVS 7: 2017–2022; LITS 3: 2016) and bank outcomes (BEPS 3: 2020–2021) are not quite contemporaneous, we address from above that generalized trust is widely understood as a deeply embedded cultural trait that exhibits substantial stability over time (Uslaner, 2002; Putnam, 2000). Trust attitudes are socially transmitted and evolve slowly across generations, making short-term temporal mismatches less problematic for this particular construct than they would be for time-varying economic variables. The WVS and LITS waves used in our study are the most recent available and represent the best approximation of the trust environment facing banks during the BEPS 3 survey period.

In addition, we manually collected data on bank CEO gender and other key control variables for bank characteristics (e.g. total assets and return on total assets ratio ROA, listing status) from the ORBIS database of Bureau van Dijk – A Moody's Analytics Company. Our final sample thus comprises 340 banks across 33 countries in Europe, Asia, and Africa.³

Below we detail the construction of each variable. The statistics summary is reported in Table A1 in the Appendix.

3.2.1. Generalized Trust Variables (GTRUST)

To capture the multifaceted nature of social trust, we construct four distinct measures of generalized trust. The first measure, TRUST_G1, serves as a foundational indicator of an individual's overarching belief regarding the trustworthiness of others in society. This binary variable is derived from the standard question asking whether most people can be trusted or whether one needs to be very careful in dealing with others, with responses coded as one for those expressing a trusting orientation and zero otherwise.

The second measure, TRUST_G2, offers a more rigorous test of generalized trust by requiring respondents to demonstrate consistent trust across four distinct social relationships: family members,

1. 15 countries using the WVS 7 include Armenia, Czech, Greece, Jordan, Kyrgyzstan, Kazakhstan, Morocco, Mongolia, Romania, Serbia, Slovakia, Tajikistan, Turkey, Tunisia, and Ukraine.
2. 18 countries using the LITS 3 are Albania, Azerbaijan, Bosnia-Herzegovina, Bulgaria, Belarus, Estonia, Georgia, Croatia, Hungary, Lithuania, Latvia, Moldova, Montenegro, North Macedonia, Poland, Slovenia, Uzbekistan, and Kosovo.
3. 33 countries in our final sample are Albania, Armenia, Azerbaijan, Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, Czech, Estonia, Georgia, Greece, Hungary, Jordan, Kazakhstan, Kosovo, Kyrgyzstan, Latvia, Lithuania, Moldova, Mongolia, Montenegro, Morocco, North Macedonia, Poland, Romania, Serbia, Slovakia, Slovenia, Tajikistan, Tunisia, Turkey, Ukraine, and Uzbekistan.

neighbors, first-time acquaintances, and people of another nationality. This dummy variable is coded as one only when respondents report having trust in all four groups simultaneously, thereby capturing a broad and consistent trusting disposition that transcends specific social boundaries.

Building upon this conceptual foundation, TRUST_G3 provides a more nuanced operationalization by constructing a summative index that ranges from zero to eight, where higher scores reflect both greater breadth and intensity of trust across the same four social groups, with responses coded on a three-point scale for each category.

Finally, TRUST_P focuses specifically on trust extended to strangers— individuals encountered for the first time, which arguably represents the purest test of generalized trust due to the absence of prior knowledge or relational history. This ordinal measure is coded on a three-level scale, distinguishing between complete trust, some trust, and an absence of trust, thereby allowing researchers to examine how generalized trust operates in contexts of maximal social uncertainty.

3.2.2. Climate Mitigation Actions (ACTION)

Our analysis incorporates four variables capturing banks' engagement with climate-related issues and environmental sustainability. The variables ENVI and CLIM are dummy indicators derived from whether banks report having explicit policies and targets for environmental concerns and climate change, respectively, based on responses to survey questions regarding the existence of formal environmental and climate change policies. Complementing these policy-oriented measures, CIMPACT captures whether banks have undertaken quantitative analysis of climate-related risks on their assets over the preceding three years, providing insight into banks' proactive assessment of climate risk exposure. Additionally, LOAN measures the temporal dimension of banks' commitment to environmental sustainability by capturing how early banks began providing loans to improve the energy efficiency of small and medium-sized enterprises and large enterprises. This continuous variable is constructed by subtracting the year of first provision from the interview year, with higher values indicating earlier adoption and, consequently, a longer-standing commitment to financing energy efficiency improvements.

3.2.3. Control variables for the bank characteristics and country where the bank is based (BANK and COUNTRY)

Our empirical models incorporate an extensive set of control variables at both the bank and country levels to mitigate omitted variable bias and isolate the relationships of interest. At the bank level, we control for CEO gender through the dummy variable FEMALE, which is hand-collected and coded as one for female CEOs and zero for male CEOs. Bank age is captured through LNAGE, computed as the logarithm of

the number of years in operation up to 2020, while bank size is measured by LNASSET, the logarithm of total assets in US dollars. LISTED is a dummy indicator of whether the bank is publicly traded on stock markets, and ROA measures bank profitability through the return on total assets ratio. Furthermore, WEATHER captures whether banks have experienced significant monetary losses due to extreme weather events over the preceding three years, serving as a control for banks' direct exposure to climate-related physical risks.

We include this variable because banks' direct exposure to physical climate risks (extreme weather losses) may simultaneously influence both their climate risk awareness and their propensity to adopt climate policies—a classic confounder. Banks that have experienced weather-related losses are more likely to internalize climate risks and take proactive mitigation actions (Kreibich et al., 2017; Huang et al., 2022). This direct experiential channel is specific and measurable in BEPS 3, making it a more appropriate control than broader risk exposure measures (e.g., loan portfolio composition), which are not available in our dataset.

At the country level, we include EXUSSR, a dummy variable identifying former Soviet Union member states, to control for the enduring influence of distinct institutional and economic systems. Research highlights that Eastern Europe's weak CO₂ monitoring stems from a combination of institutional weaknesses (Klůvanková-Oravská & Jilková, 2009), the socialist industrial legacy that privileged heavy industry over environmental safeguards (Fankhauser et al., 2022), and the diffuse emissions profile of households and small-scale energy use (Bórawski et al., 2019). In addition, carbon monitoring frameworks in post-socialist countries are often inconsistent or methodologically inadequate relative to Western Europe (Li et al., 2026). Plus, oil-rich post-Soviet economies often face stronger path dependency on fossil fuels and weaker incentives for low-carbon transitions, which may manifest in lower climate policy adoption at both national and bank levels. The former Soviet Union dummy thus captures a concentrated set of historically persistent features that jointly shape both the general trust environment and the institutional context for climate action.

We capture macroeconomic conditions using INF2Y and GPDG2Y, which represent the two-year average inflation rate and GDP growth rate, respectively. Macroeconomic conditions significantly shape firms' environmental investment decisions. Higher GDP levels correlate with increased environmental consciousness, enhanced technological capacity, and stronger institutional support for sustainability (Dasgupta et al., 2002; Bowen et al., 2014). Hallegatte and Rozenberg (2017) note that economic prosperity facilitates long-term investment in resilience and low-carbon transitions, whereas instability crowds out environmental priorities (Barrett & Graddy, 2000). Inflation is especially critical: high inflation increases uncertainty, shortens investment horizons, and discourages capital-intensive projects like

energy efficiency upgrades and emissions monitoring (Fisher, 1930; Bernanke, 1983). Persistent inflation may shift managerial attention to short-term liquidity rather than long-term sustainability (Aghion et al., 2010). Additionally, inflation often reflects fiscal fragility, limiting governments' capacity to provide the financial support essential for effective climate mitigation. Finally, NZ2050 is a dummy variable indicating whether the country has committed to achieving net-zero emissions by 2050, controlling for the influence of national climate policy ambition on banks' environmental behaviors. We get the information of NZ2050 commitment from Climate Watch Data.¹

4. Empirical results

4.1. Generalized trust and banks' climate mitigation actions

Table 1 examines the relationship between generalized trust and banks' adoption of explicit climate change (CLIM, Columns 1-4) and environmental (ENVI, Columns 5-8) policies. The findings reveal a stronger association between trust and climate-specific policies compared to broader environmental frameworks.

For climate policies, TRUST_G2 shows a positive and statistically significant effect (coefficient= 1.716, $P= 0.011$), indicating that banks in high-trust regions are more likely to adopt formal climate policies. TRUST_P exhibits an even stronger relationship (coefficient= 3.742, $P= 0.000$). While TRUST_G1 and TRUST_G3 show positive coefficients, they lack statistical significance. For environmental policies, only TRUST_G3 demonstrates significance (coefficient= 1.350, $P= 0.004$), with other trust measures yielding positive but insignificant coefficients.

Among control variables, FEMALE shows a strong positive relationship with both policy types (coefficients: 0.836-0.868 for CLIM, 0.909-0.965 for ENVI, $P< 0.01$), consistent with research linking female leadership to greater corporate social responsibility. LNASSET also demonstrates positive significance across all models (coefficients: 0.213-0.224 for CLIM, 0.176-0.189 for ENVI, $P< 0.05$), suggesting larger banks have greater institutional capacity for formal policy adoption. WEATHER shows a negative association with environmental policy adoption.

Country-level factors reveal notable patterns. EXUSSR shows a strong positive relationship with climate policy adoption in most specifications but loses significance in the TRUST_G3 model. However, for environmental policies, EXUSSR exhibits consistently negative and significant coefficients (-0.434 to -0.640, $P< 0.05$). Macroeconomic variables INF2Y and GDPG2Y show consistent significance in CLIM models, with lower inflation and higher growth associated with greater climate policy adoption.

1. <https://www.climatewatchdata.org>

Table 1. The correlation between generalized trust and banks' adoption of explicit climate change and environmental policies and targets

	CLIM Model 1 Probit (1)	CLIM Model 1 Probit (2)	CLIM Model 1 Probit (3)	CLIM Model 1 Probit (4)	ENVI Model 1 Probit (5)	ENVI Model 1 Probit (6)	ENVI Model 1 Probit (7)	ENVI Model 1 Probit (8)
TRUST_G1	0.659 (0.494)				-0.333 (0.783)			
TRUST_G2		1.716** (0.011)				0.941 (0.474)		
TRUST_G3			0.599 (0.184)				1.350*** (0.004)	
TRUST_P				3.742*** (0.000)				0.585 (0.646)
FEMALE	0.836*** (0.002)	0.843*** (0.001)	0.868*** (0.001)	0.844*** (0.002)	0.915*** (0.000)	0.913*** (0.000)	0.965*** (0.000)	0.909*** (0.000)
LNASSET	0.213** (0.012)	0.216** (0.011)	0.216** (0.011)	0.224** (0.008)	0.176** (0.045)	0.180** (0.042)	0.189** (0.035)	0.178** (0.043)
LISTED	-0.221 (0.199)	-0.214 (0.215)	-0.222 (0.193)	-0.207 (0.242)	0.098 (0.637)	0.098 (0.636)	0.109 (0.594)	0.099 (0.633)
LNAGE	0.212 (0.326)	0.227 (0.296)	0.207 (0.342)	0.236 (0.283)	0.295 (0.174)	0.304 (0.169)	0.292 (0.188)	0.299 (0.169)
ROA	-0.031 (0.614)	-0.028 (0.653)	-0.030 (0.634)	-0.032 (0.612)	-0.093 (0.166)	-0.093 (0.166)	-0.093 (0.160)	-0.093 (0.163)
WEATHER	-0.017 (0.964)	-0.027 (0.942)	-0.029 (0.940)	-0.005 (0.990)	-0.553* (0.056)	-0.561* (0.053)	-0.590** (0.044)	-0.555* (0.055)
EXUSSR	4.687*** (0.000)	5.218*** (0.000)	2.959 (0.131)	4.091*** (0.000)	-0.434** (0.026)	-0.496*** (0.002)	-0.640*** (0.000)	-0.512*** (0.003)
INF2Y	-1.059*** (0.000)	-1.213*** (0.000)	-0.586 (0.243)	-1.026*** (0.000)	0.057 (0.147)	0.032 (0.300)	-0.040 (0.346)	0.033 (0.408)
GDPG2Y	1.908*** (0.000)	2.215*** (0.000)	0.946 (0.328)	1.889*** (0.000)	0.114 (0.241)	0.189** (0.027)	0.123*** (0.003)	0.174* (0.058)
NZ2050	12.287*** (0.000)	13.730*** (0.000)	6.981 (0.201)	11.358*** (0.000)	-0.336 (0.228)	-0.476*** (0.004)	-0.871*** (0.000)	-0.522* (0.063)

	CLIM Model 1 Probit (1)	CLIM Model 1 Probit (2)	CLIM Model 1 Probit (3)	CLIM Model 1 Probit (4)	ENVI Model 1 Probit (5)	ENVI Model 1 Probit (6)	ENVI Model 1 Probit (7)	ENVI Model 1 Probit (8)
Constant	-3.886*** (0.005)	-3.716*** (0.004)	-6.836** (0.019)	-4.782*** (0.001)	-4.366** (0.019)	-4.531** (0.019)	-8.163*** (0.003)	-4.481** (0.019)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster (Country)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	307	307	307	307	306	306	306	306
Adjusted R^2								

p-values in parentheses; * $P < 0.1$, ** $P < 0.05$, *** $P < 0.01$

Table 2. The correlation between generalized trust and climate risk assessment.

	CIMPACT Model 1 Probit (1)	CIMPACT Model 1 Probit (2)	CIMPACT Model 1 Probit (3)	CIMPACT Model 1 Probit (4)
TRUST_G1	0.670 (0.696)			
TRUST_G2		4.571* (0.099)		
TRUST_G3			1.655** (0.012)	
TRUST_P				3.340* (0.093)
FEMALE	0.464 (0.205)	0.507 (0.179)	0.555 (0.148)	0.494 (0.188)
LNASSET	0.177 (0.106)	0.182* (0.099)	0.176* (0.093)	0.180* (0.098)
LISTED	0.023 (0.919)	0.054 (0.813)	0.037 (0.868)	0.076 (0.749)
LNAGE	0.208	0.233	0.193	0.215

	CIMPACT Model 1 Probit (1)	CIMPACT Model 1 Probit (2)	CIMPACT Model 1 Probit (3)	CIMPACT Model 1 Probit (4)
ROA	(0.370) -0.017 (0.794)	(0.318) -0.009 (0.890)	(0.402) -0.016 (0.819)	(0.357) -0.019 (0.782)
WEATHER	-0.513 (0.275)	-0.704 (0.188)	-0.651 (0.175)	-0.649 (0.199)
EXUSSR	0.030 (0.983)	0.545 (0.560)	-5.741** (0.011)	-0.541 (0.582)
INF2Y	-0.097 (0.752)	-0.323 (0.213)	1.412** (0.014)	-0.054 (0.813)
GDPG2Y	0.238 (0.655)	0.748 (0.139)	-2.764** (0.016)	0.196 (0.632)
NZ2050	1.455 (0.646)	3.412 (0.184)	-15.318** (0.017)	0.463 (0.846)
Constant	-5.037** (0.013)	-5.058*** (0.005)	-13.614*** (0.003)	-5.681*** (0.005)
Country FE	Yes	Yes	Yes	Yes
Cluster (Country)	Yes	Yes	Yes	Yes
Observations	223	223	223	223
Adjusted R^2				

p -values in parentheses; * $P < 0.1$, ** $P < 0.05$, *** $P < 0.01$

Most notably, NZ2050 demonstrates an exceptionally strong positive relationship with climate policy adoption across all CLIM specifications (coefficients exceeding 10, $P < 0.01$), while showing negative and significant coefficients for ENVI, suggesting countries with net-zero commitments may prioritize climate-specific frameworks over broader environmental policies.

Table 2 examines the relationship between trust and banks' quantitative analysis of climate-related risks (CIMPACT). TRUST_G3 emerges as the most robust predictor (coefficient = 1.655, $P = 0.012$). TRUST_G2 and TRUST_P show positive coefficients with marginal significance ($P = 0.099$ and $P = 0.093$), while TRUST_G1 yields insignificant results.

Control variables show less consistency than in Table 1. FEMALE shows positive coefficients but lacks significance. LNASSET exhibits positive and marginally significant coefficients ($P < 0.10$), indicating larger banks are somewhat more likely to undertake climate risk analysis. Country-level variables show instability across trust models, with the TRUST_G3 specification showing significant negative coefficients for EXUSSR (-5.741, $P = 0.011$) and GDPG2Y (-2.764, $P = 0.016$), and a positive coefficient for INF2Y (1.412, $P = 0.014$). This suggests that the technical and resource-intensive nature of climate risk analysis may cause country-level factors to operate differently than for policy adoption.

4.2. Generalized trust and energy efficiency lending to SMEs and Large Enterprises (LEs)

Table 3 presents OLS results for LOAN, measuring the timing of banks' energy efficiency lending to SMEs and large enterprises. The results provide robust evidence that generalized trust is positively associated with earlier adoption across all four trust measures, representing the strongest statistical significance in this study.

Table 3. The correlation between generalized trust and energy efficiency lending to SMEs and Large Enterprises (LEs)

	LOAN Model 1 OLS (1)	LOAN Model 1 OLS (2)	LOAN Model 1 OLS (3)	LOAN Model 1 OLS (4)
TRUST_G1	5.639 (0.205)			
TRUST_G2		11.523*** (0.000)		
TRUST_G3			4.122** (0.011)	
TRUST_P				7.342* (0.085)
FEMALE	1.002 (0.251)	1.049 (0.248)	1.300 (0.151)	1.061 (0.239)

	LOAN Model 1 OLS (1)	LOAN Model 1 OLS (2)	LOAN Model 1 OLS (3)	LOAN Model 1 OLS (4)
LNASSET	0.288 (0.391)	0.300 (0.369)	0.297 (0.366)	0.282 (0.397)
LISTED	-0.281 (0.794)	-0.165 (0.876)	-0.242 (0.812)	-0.183 (0.864)
LNAGE	0.232 (0.786)	0.267 (0.743)	0.102 (0.904)	0.239 (0.772)
ROA	-0.396 (0.184)	-0.357 (0.235)	-0.364 (0.235)	-0.382 (0.208)
WEATHER	-0.051 (0.962)	-0.184 (0.858)	-0.069 (0.946)	0.029 (0.978)
EXUSSR	9.592** (0.042)	13.459*** (0.000)	-2.308 (0.738)	11.491*** (0.002)
INF2Y	-2.790*** (0.008)	-3.849*** (0.000)	0.509 (0.769)	-3.315*** (0.000)
GDPG2Y	5.158*** (0.005)	7.238*** (0.000)	-1.574 (0.639)	6.081*** (0.000)
NZ2050	31.927*** (0.004)	41.788*** (0.000)	-5.156 (0.787)	36.049*** (0.000)
Constant	5.778 (0.354)	7.444 (0.202)	-14.036 (0.209)	6.592 (0.288)
Country FE	Yes	Yes	Yes	Yes
Cluster (Country)	Yes	Yes	Yes	Yes
Observations	227	227	227	227
Adjusted R^2	0.012	0.030	0.030	0.016

p-values in parentheses; * $P < 0.1$, ** $P < 0.05$, *** $P < 0.01$

TRUST_G2 demonstrates the strongest relationship (coefficient= 11.523, $P = 0.000$), indicating that banks in high-trust regions initiated energy efficiency lending approximately 11.5 years earlier than banks in low-trust regions. TRUST_G3 shows a positive and significant relationship (coefficient= 4.122, $P = 0.011$), suggesting each unit increase in the trust summative index corresponds to four years of earlier adoption. The smaller coefficient for TRUST_G3 compared to TRUST_G2 suggests consistency of trust may be more important than intensity for early adoption. TRUST_P yields a marginally significant positive coefficient (7.342, $P = 0.085$), while TRUST_G1 shows a positive but insignificant coefficient (5.639, $P = 0.205$).

Control variables reveal several important relationships. FEMALE shows positive coefficients but, unlike in Table 1, lacks statistical significance, suggesting gender differences may be more relevant for formal policy adoption than for the timing of specific lending initiatives. LNASSET shows positive coefficients across all specifications but lacks significance, indicating bank size does not significantly predict the timing of energy efficiency lending. EXUSSR

demonstrates a strong positive association with LOAN (coefficients: 9.592-13.459) with statistical significance in most specifications, except in the TRUST_G3 model where the coefficient becomes negative and insignificant (-2.308, $P=0.738$). This suggests banks in former Soviet Union countries-initiated energy efficiency lending earlier, potentially reflecting legacy effects of centralized energy systems.

The macroeconomic variables show significant effects in expected directions. INF2Y shows negative coefficients (-2.790 to -3.849) in the TRUST_G1, TRUST_G2, and TRUST_P models ($P<0.01$), indicating lower inflation is associated with earlier adoption. GPDG2Y exhibits positive coefficients (5.158 to 7.238) in these same models ($P<0.01$), suggesting higher economic growth facilitates earlier adoption. Most strikingly, NZ2050 shows an exceptionally strong positive relationship with LOAN in the TRUST_G1, TRUST_G2, and TRUST_P models (coefficients: 31.927-41.788, $P<0.01$), indicating banks in countries committed to net-zero by 2050 began energy efficiency lending approximately 30-40 years earlier. This underscores the critical role of national climate policy ambition in shaping banks' early engagement with climate-related financial products. However, in the TRUST_G3 model, NZ2050 becomes negative and insignificant (-5.156, $P=0.787$), and EXUSSR also loses significance.

5. Discussion, Limitation and Addressing endogeneity concerns

5.1. Trust and Bank's climate action

The stronger relationship between trust and climate actions has important implications for understanding the social determinants of corporate environmental behavior. Climate change, as a global collective action problem, requires coordination across national boundaries, long-term commitment, and cooperation among diverse stakeholders. The urgency and salience of climate change as a policy issue make it particularly sensitive to social trust, as trust facilitates the cooperation and coordination necessary for addressing this global challenge. In contrast, broader environmental policies may encompass a wider range of issues with varying degrees of urgency and collective action requirements, potentially diluting the relationship with social trust.

The stronger relationship between trust and climate actions may also reflect the increasing policy attention to climate change in recent years, with many countries adopting net-zero targets and implementing climate-related regulations. Banks operating in high-trust environments may be more responsive to these policy signals, as trust facilitates the transmission of policy expectations and the coordination of responses across the financial sector. The specificity of climate actions may also make them more visible and measurable than broader environmental policies, allowing the effects of trust to be more clearly observed in the data.

5.2. Limitation and Addressing endogeneity concerns

Our analysis relies on the BEPS 3 survey by the EBRD, which provides uniquely rich bank-level information on climate-related policies and risk assessments; data that are not widely available elsewhere. The BEPS 3 dataset covers 340 banks across 33 countries during 2020-2021, with responses directly obtained from Heads of Credit and CEOs, offering a rare and valuable window into banks' internal climate engagement practices. However, the cross-sectional nature of BEPS 3 is constrained by the fact that the preceding wave, BEPS 2, did not include questions on climate change mitigation, preventing us from constructing a panel dataset to track changes over time or to employ bank fixed effects. Future research would benefit from subsequent survey waves (BEPS 4), should it include comparable climate-related modules, which would enable panel estimation and more rigorous identification of causal relationships. Until such data become available, our findings serve as an important correlational benchmark, leveraging the richest existing bank-level dataset on climate action while transparently acknowledging its cross-sectional limitations.

We acknowledge that our cross-sectional research design does not permit causal inference, and we therefore interpret our findings as robust associations rather than causal effects. Nevertheless, we take several steps to mitigate endogeneity concerns arising from omitted variable bias, reverse causality, and measurement error. First, we include an extensive set of bank-level (CEO gender, bank age, size, listing status, profitability, and extreme weather losses) and country-level (macroeconomic conditions, former Soviet Union legacy, and net-zero commitments) control variables to reduce the risk of omitted variable bias.

Second, we employ multiple measures of both generalized trust (four distinct constructs) and climate actions (three complementary indicators), which attenuates measurement error and strengthens the consistency of our observed associations.

Third, our trust measures are drawn from regional-level surveys (World Values Survey and Life in Transition Survey) rather than from bank respondents themselves, reducing the risk of same-source bias and reverse causality, as regional trust perceptions predate the bank-level outcomes measured in the BEPS 3 survey.

Besides that, it remains possible that banks with stronger climate policies operate in regions where trust has been cultivated through effective environmental governance, or that such banks attract trust-prone stakeholders. While our use of region-level trust measures (rather than bank-specific trust) and our inclusion of country-level institutional controls partially mitigate these concerns, we cannot entirely exclude these alternative interpretations. We therefore interpret our findings as robust correlations and encourage future research using panel data or quasi-experimental designs, for instance, with subsequent waves such as BEPS 4 to more credibly identify causal directions.

6. Conclusions and Implications

This study examines the association between generalized trust and banks' climate mitigation actions and organizational structures, drawing on a unique dataset combining BEPS 3 survey data from 340 banks across 33 countries with regional-level trust measures from the World Values Survey and the Life in Transition Survey. Our empirical findings provide robust evidence that generalized trust is positively associated with banks' engagement in climate-related activities. Across multiple trust measures, climate outcomes, and analytical specifications, we consistently find that higher levels of generalized trust in the regions where banks operate are correlated with greater climate policy adoption, more comprehensive climate risk assessment, and earlier initiation of energy efficiency lending. Our results point to the important role of institutional context in moderating the relationship between trust and climate actions and organizational structure. National net-zero commitments by 2050 and former Soviet Union status emerge as consistently strong predictors of both climate actions and organizational complexity, suggesting that institutional legacies and policy ambition shape the enabling environment within which trust operates. In addition, we find that bank-level characteristics, particularly female leadership and bank size, are consistently associated with climate policy adoption. Banks led by female CEOs are significantly more likely to adopt climate and environmental policies, consistent with prior research suggesting that female leadership is linked to greater corporate social responsibility and environmental stewardship. Larger banks are also more likely to have formal climate policies, reflecting greater institutional capacity and stakeholder scrutiny.

Taken together, these findings contribute to a growing body of evidence that social capital and institutional trust are foundational elements of the transition to a sustainable economy. By demonstrating that generalized trust is positively correlated with banks' climate actions across multiple dimensions, we provide empirical support for the theoretical proposition that trust is associated with cooperation, coordination, information sharing, and institutional capacity building; all of which are essential for addressing complex collective action problems like climate change.

Conflict of interest

The author declared no conflicts of interest.

Ethical considerations

The author has completely considered ethical issues, including informed consent, plagiarism, data fabrication, misconduct, and/or falsification, double publication and/or redundancy, submission, etc. This article was not authored by artificial intelligence.

Data availability

The dataset generated and analyzed during the current study is available from the corresponding author on reasonable request.

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Appendix

Table A1. Descriptive statistics of the variables

Variable	Obs	Mean	Std. Dev.	Min	Max
TRUST_G1	345	0.25	0.12	0	0.8
TRUST_G2	345	0.16	0.10	0	0.7
TRUST_G3	345	3.17	0.48	2.39	4.98
TRUST_P	345	0.27	0.13	0	0.8
CLIM	339	0.35	0.48	0	1
ENVI	339	0.67	0.47	0	1
CIMPACT	329	0.17	0.38	0	1
LOAN	234	6.29	4.20	1	30
FEMALE	345	0.10	0.30	0	1
LNASSET	345	21.25	1.72	14.00	25.33
LISTED	345	0.33	0.47	0	1
LNAGE	345	3.19	0.52	1.61	5.05
ROA	345	0.86	1.59	-10.9	8.14
WEATHER	336	0.07	0.25	0	1
EXUSSR	339	0.45	0.50	0	1
INF2Y	339	5.80	11.16	-0.92	56.56
GDPG2Y	339	-0.09	1.95	-5.62	5.90
NZ2050	345	0.30	0.46	0	1

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