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Earmarked Green Tax Benefits and Flood Risk Experience Shaping Public Support and Compliance Intentions

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A B S T R A C T

Purpose: This paper investigates the effects of flood mitigation benefit perceptions, governance aspects and disaster severity on perceptions towards and intentions to comply with green taxation.
Method: A cross-sectional study with PLS-SEM approach was carried out on data collected digitally from flood-prone areas.
Findings: The findings show that the perceived benefits of targeted flood mitigation programs, environmental effectiveness, fairness, and trust in the government significantly encourage support for green taxes and the intention to comply with them. Perceptions of transparency and accountability have a weaker direct effect. The impact of flooding does not directly influence support, but it has an important moderating effect. This means that it increases the effect of targeted benefits and perceptions of fairness on the intention to comply. Findings show that, in disaster-affected areas, residents assess green taxes not based on abstract environmental goals, but based on specific benefits that are in line with the principle of fairness.
Novelty: This study proposes the flood impact severity as a contextual moderator in the association between cope-green tax design and disaster experience and rearticulates green taxation less in terms of control-of-emissions and more as adaptive climate-finance.
Implications: The results of the study indicate that public acceptance of green taxes can be increased if the government allocates the revenue from these taxes to visible flood prevention efforts, ensures a fair distribution of the burden, and strengthens institutional credibility in areas vulnerable to climate risks.

1. Introduction

Disasters caused by hydrometeorological phenomena, including floods, are increasing in number. This is partly due to climate change, which has led to an increase in the number of hydrometeorological disasters. These extreme weather phenomena are among the most severe adverse weather conditions associated with earthquakes. However, warmer days have also led to

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an increase in the intensity of weather events around the world. Recent global reviews show that exposure to flooding due to extreme rainfall, sea level rise, and rapid urbanization is increasing at an alarming rate (IPCC, 2023; Ward et al., 2012; OECD, 2022). Meanwhile, authorities are increasingly turning to green taxes to finance climate change mitigation and adaptation projects. However, the public also widely opposes green taxes in areas frequently hit by climate disasters. Empirical studies show that people reject climate policies when the benefits seem abstract or irrelevant to their needs (Beiser-McGrath et al., 2021; Martin et al., 2021).

A key issue in the current policy debate is the conflict between the rationale behind green taxes and public expectations regarding fiscal consequences. Green taxes are typically justified as a mechanism to correct environmental externalities; however, disaster-affected communities generally prioritize measures oriented toward protection, recovery, and resilience. Evidence from recent flood disasters shows that citizens evaluate fiscal policies based on the visible use of revenue to reduce and adapt to risks, not just on long-term targets for emissions (Bubeck et al., 2022; Botzen et al.). Furthermore, a lack of transparency and low institutional trust can reduce confidence in green tax schemes, resulting in skepticism about revenue use and policy credibility (Gangl et al., 2023; Kirchler et al., 2021).

Theoretically, previous research on how people respond to green taxes is based on three theories. The first is called Policy Acceptance Theory (Scharpf, 1999). The second is called Tax Justice Theory (Rawls, 1971). The third is called Fiscal Exchange Theory (Alm & Torgler, 2006). According to these theories, fairness, perceived benefits, and institutional integrity are key to taxpayer compliance and support. Much evidence shows that when funds set aside for taxes are used for the environment or the public good, more people pay their taxes (Annicchiarico et al., 2021; Beiser-McGrath et al., 2021; Klenert et al., 2018). However, most previous research implicitly assumes that public attitudes are relatively static and self-regulating, with little consideration of how individuals' experiences with climate disasters influence their financial preferences or policy evaluations.

These shortcomings point to a striking need and interest in research that must be addressed. First, the role of fairness, effectiveness, trust, and transparency in green tax acceptance is not consistently supported across contexts (Douenne & Fabre, 2022; Bechtel et al., 2023). Second, there are still limitations in the connection between climate disaster studies and public finance literature, despite growing awareness of the need for fiscal systems to address climate risks (OECD, 2024). Third, this study responds to recent studies on this issue by exploring whether the severity of disasters moderates the underlying mechanisms that lead to willingness to pay for climate policies (e.g., Baccini and Leemann, 2021; Egan and Mullin, 2023). In flood-prone areas, ignorance about policies and a lack of concern about their benefits can limit the legitimacy of green tax policies. This weakness is most evident in these areas.

This study analyses how perceived flood mitigation benefits influence support for green taxes and compliance intentions. It also analyse how perceived environmental effectiveness influences these factors. In addition, this study examines how perceptions of fairness, trust and government competence, as well as tax transparency and accountability influence these intentions. Crucially, this study introduces the severity of flood impacts as a moderating variable to explore how experienced disaster experiences influence these relationships. Thus, this study makes a new contribution by presenting green taxes as an adaptive fiscal tool that links environmental goals with disaster resilience and social legitimacy. These findings have globally relevant implications for policymakers seeking to design green tax systems that are responsive to climate risks, socially fair, and institutionally credible.

The remainder of this study is divided into five sections. The theoretical framework and hypothesis development are presented in Section 2. Section 3 explains the research methodology. Section 4 contains the empirical investigation results and a

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discussion of these results. Section 5 is the final section of this study.

2. Literature Review

2.1 Earmarked Flood-Mitigation Benefits and Green Tax Support/Compliance

The evidence consistently indicates that earmarking/revenue recycling tends to make carbon/green taxes more palatable because citizens see better and more legitimate public value – and a diminished degree of "fiscal distance" between payment and benefit. The systematic review and meta-analysis findings suggest that earmarking revenues to green spending can greatly enhance support, especially when the benefits are salient and credible. Experimental cross-country evidence also emphasizes revenue use as a key design lever of support. These results indicate that earmarked flood-mitigation benefit is anticipated to enhance public willingness toward green taxation's support or compliance (Mohammadzadeh Valencia et al., 2024).

H1: Perceived Earmarked Flood-Mitigation Benefit (PEFB) positively influences Green Tax Support and Compliance Intention (GTSI).

2.2 Perceived Environmental Effectiveness and Green Tax Support/Compliance

Public support for carbon/green taxes increases when people think the policy will significantly lower emissions and environmental damage. In a large cross-country survey experiment, we find that (the perception of) effectiveness leads to higher, while households costs lead to lower support—highlighting the centrality of effectiveness as a causal psychological motivator. It is seen that perceptions of effectiveness are tied to the perceived fairness and acceptance mechanisms: when they perceive outcomes as being real, material and measurable, citizens appraise the policy as more legitimate. Reviews and meta-analyses also confirm that perceived effectiveness is one of the best correlates of acceptance towards carbon pricing (Bulut & Samuel, 2025).

H2: Perceived Environmental Effectiveness (PEE) positively influences GTSI.

2.3 Perceived Fairness and Green Tax Support/Compliance

Fairness beliefs, incorporating both procedural fairness, distributional effects and personal impact, are often found to be significant in determining support for carbon pricing. There is experimental evidence that perceived effectiveness and multi-dimensional fairness together determine overall fairness, and therefore acceptance. Evidence in meta-analyses and reviews also suggests that fairness key considerations contribute the most to support for climate taxation. Thus, when citizens perceive the tax to be reasonable, fair and protective of vulnerable categories they are more likely to support it and intend to comply with it (Huttarsch & Matthies, 2024).

H3: Perceived Fairness of Green Tax (PF) positively influences GTSI.

2.4 Government Trust/Competence and Green Tax Support/Compliance

Confidence in government and perceived state capacity are fundamental factors of compliance and policy feasibility. Political economy fieldwork shows that trust has a positive effect on the motivation of citizens to comply by virtue of their belief in the merits of policy choices and credibility in implementation. In climate-tax contexts, features of design (e.g., revenue use and transparency) combine with trust to influence perceived legitimacy. Meta-analysis of research on carbon pricing also suggests that support increases when policies packages lower fears of misuse and reinforce perceptions about integrity. Thus, higher trust and competence beliefs are expected to predict stronger support and compliance intentions of green taxes (Besley & Dray, 2024a, 2024b).

H4: Government Trust and Competence (GTC) positively influences GTSI.

2.5 Transparency/Accountability Perceptions and Green Tax Support/Compliance

Transparency boosts legitimacy in the mind of the public, as it gives them a way to check where revenues flow, how projects are chosen and whether oversight exists. Transparency has been featured in international norms as a cornerstone of

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accountability and confidence in fiscal management. Moreover, evidence from empirical carbon-pricing research suggests that policy backing is strongly related to revenue use and communication, which transparency operationalises by lowering uncertainty and suspicion. Furthermore, governance-related research establishes a connection between accountable/transparent institutions and better implementation of environmental policy (Bhatti et al., 2023). Thus stronger perceived transparency and accountability should raise the publics' willingness to support, and comply with, green taxes.

H5: Tax Transparency and Accountability Perception (TTAP) positively influences GTSI.

2.6 Flood Impact Severity as a Moderator

Experience of a disaster makes more salient the protection and recovery requirements, which in turn may increase sensitivity to earmarked fiscal responses. Research on experiences during floods indicates that the recalled and frequent exposure to flooding is linked with greater protective motivation, suggesting that individuals become more sensitive to tangible mitigation gains. Empirical studies from flood affected post-event settings suggest that experience of hazard affects risk perception and responses to intervention. In the same vein, climate-policy studies show that being exposed to extreme weather events can lead to higher willingness-to-pay for climate-related policies. In sum, the above results may reflect that earmarked flood-mitigation benefits become more salient and essential when people perceive the impacts of floods as severe (enhanced support and compliance intentions) (Köhler & Han, 2024).

The massive, dramatic impacts of flooding may have heightened the sense of urgency and the importance people place on whether a green tax "works." There is post-flood evidence that such significant events reframe public perceptions and also shift emphasis in how policies of risk reduction are communicated. Studies on extreme weather experience show an increased willingness-to-pay for climate policies, following disasters, reflecting higher demand for effective policy action. Given that perceived effectiveness has served as a central driver of support for carbon taxes experimentally in cross-country studies, the relationship between support and effectiveness should be more pronounced among households who experience more severe flooding (Palazzoli et al., 2026).

FRS may be more salient when flood losses are substantial, as households react to distributive and procedural justice concerns—whether the assignment of costs and benefits is fair and whether vulnerable populations are safeguarded. Evidence on carbon pricing shows that components of fairness (procedural and distributional impacts) condition overall fairness and acceptability. Flood-risk scholarship similarly underlines that the post-event setting raises public focus on institutional effectiveness and legitimacy. Moreover, meta-analytic evidence on carbon pricing finds fairness to be one of the most robust predictors of support. Therefore, the impact of perceived fairness on support and compliance intentions is expected to be stronger when flood severity increases (Huttarsch & Matthies, 2024).

Extreme flooding can further intensify public demand for government capacity, transparency and spending efficiency, which make trust and accountability matters even more pertinent. Sixth, political-economy evidence indicates that trust lowers the cost of implementation through its effect on motivation to comply, and stronger institutions improve feasibility. Studies on flood risk show that experience of events influences trust in, and response to, institutions and communication. In the interests of climate tax legitimacy, support in depends on how it is designed and communicated— including

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revenue use and transparency—which implies that (to the extent that perception can be predicted from preference) in higher-severity settings citizens will condition acceptance upon responsible/audit-able governance. As such, FIS needs to reinforce trust/transparency pathways toward and between support and compliance intentions (Besley & Dray, 2024a).

H6: Flood Impact Severity (FIS) strengthens the positive effect of PEFB on GTSI.
H7: FIS strengthens the positive effect of PEE on GTSI.
H8: FIS strengthens the positive effect of PF on GTSI.
H9: FIS strengthens the positive effects of (a) GTC and (b) TTAP on GTSI.

2.7 Research model framework

2.8

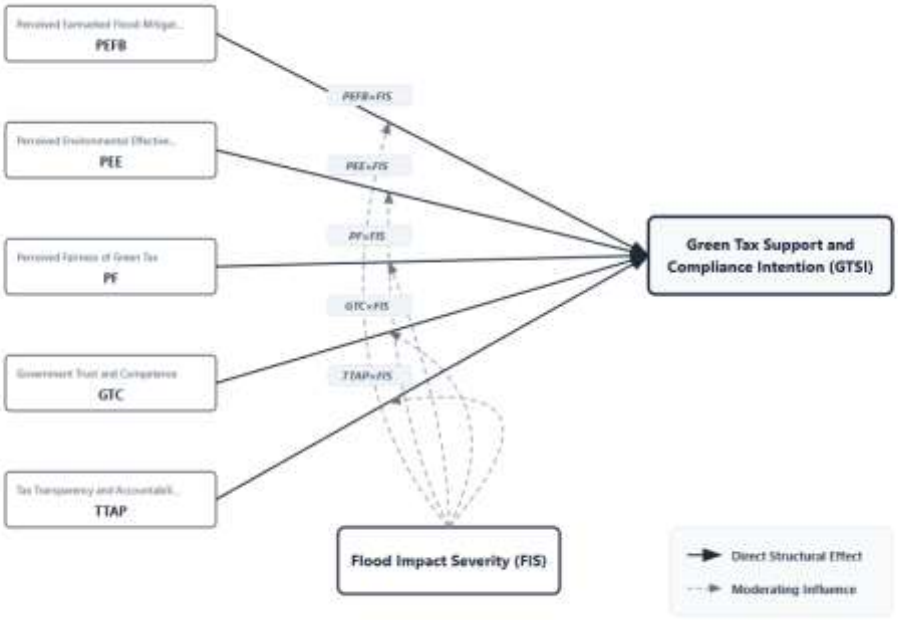

Figure 1. Research Model Framework

Methodological Note: Interaction effects (Independent Variables × FIS) are calculated using the two-stage approach in SmartPLS 4. The model evaluates whether the relationship between determinants and GTSI is contingent upon the severity of flood impacts (FIS).

3. Methods Innovation

3.1 Design research

The current research employs a quantitative cross-sectional survey method to explore the determinants of public support and intentions to comply with green taxation in terms of flood-risk. Theoretically, this research is framed within the framework of Tax Justice Theory (Murphy, 2004; Kirchler, 2007), which highlights the importance of perceived fairness and legitimacy in tax compliance; Policy Acceptability Theory (Schuitema et al., 2010), which explains how perceived effectiveness and allocation feed into public acceptability of environmental policies; and Institutional Trust Theory (Levi & Stoker, 2000) emphasizing the role that trust plays in maintaining government competence related to motivational processes underlying compliance. Thus, a PLS-SEM method with SmartPLS 4 is chosen because it is powerful in estimating complex models involving latent

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variables and moderating effects. A number of recent high-impact studies verify the appropriateness of using PLS-SEM for perception-based climate policy and carbon tax acceptance research (Hair et al., 2022; Drews & van den Bergh, 2016; Maestre-Andrés et al., 2019). Moderator - Flood Impact Level The addition of flood impact severity as a moderator tests for conditional behavioral reactions under different levels of climate-risk exposure.

3.2 Research data population

The study population consists of adult inhabitants (≥17 years) of flood-prone areas in Indonesia who have been affected by flooding within the last 24 months. Based on the risk perception theory and experience-based policy response literature, people who face direct exposure to destruction of disasters are adopted as the most relevant unit of analysis to assess climate-related fiscal policies. For the quantitative component, 486 complete responses were obtained using a structured questionnaire administered online (using Google form and purposive and snowball sampling). Respondents were spread across eight flood-affected areas in Sumatra, Java, Kalimantan and Sulawesi. This exposure heterogeneity also adds to external validity and is consistent with recent national flooding patterns associated with extreme weather events. The distribution of the population is summarized in Table 1, and detailed characteristics of respondents are shown in Appendix Data A.

3.3 Variable data instrument

The present study adapted a structured questionnaire to operationalize all the constructs with multiple reflective items and respondents were asked to indicate their agreement with each statement on the scale of 1 (strongly disagree)–5(strongly agree). Instrument development is also based in Classical Test Theory (Lord & Novick, 1968); multiple indicators are used to ensure reliable assessment of latent psychological constructs. Measurement design also, more generally draws on Policy Acceptability Theory (Schuitema et al.,2010) and Tax Justice Theory (Johnson et al., 2019), highlighting the importance of perceived Benets-, fairness- and trust-value as integral dimensions of public policy evaluation and compliance behaviour. ALIGN Experimental measurement application The above measures were implemented using a stringent experimental/online survey framework involving real or hypothetical monetary values at stake located within the prosecutors‟ role. The scales identified from former empirical studies on green tax, institutional trust and disaster risk perception were then adopted to the study setting. Recent methodological research has confirmed that multi-item Likert type measures deliver robust reliabilities and construct validity in environmental policy research (Hair et al., 2017; Drews & van den Bergh, 2016; Maestre-Andrés et al., 2019). These studies were conducted using an electronic (digital) survey instrument, via Google Forms, in order to increase the geographic scope and reduce response bias with full description of the instrument presented in Appendix Data B.

3.4 Data analysis

Analyses were performed with Partial Least Squares Structural Equation Modeling (PLS-SEM) by SmartPLS 4, based on the methodolical framework developed by Wold (1982), further formalized by (Hair & Alamer, 2022). PLS-SEM is especially appropriate for predictive studies with complicated models that encompass latent constructs and moderator effects. The analysis was carried out in two stages. First, the measurement model was tested using indicator loadings, internal consistency reliability (Cronbach's alpha and composite reliability), convergent validity (average variance extracted), and discriminant validity as described by traditional measurement theory. Second, the empirical model was tested by analyzing path coefficients, coefficient of determination (R^2), effect sizes (f^2) and predictive relevance. The moderating effect of Flood Impact Severity was examined with mean-centered interaction terms (Jun et al., 2021), as suggested by the literature of moderation analysis. Robust inference of the direct and interaction effects was made using

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bootstrapping resampling for statistical significance.

4. Results of Innovation and Discussion

4.1 Measurement model results

All reflective indicators have good convergent representation of their latent constructs (all outer loadings = 0.781–0.873). The largest loading is for PEFB4 (0.873), testifying to especially high item–construct fit in respect of earmarked flood-mitigation benefits. TTAP3 has the lowest loading (0.781) yet remains above widely used cut-offs of adequacy for indicator reliability. In general, the loading of FIS, GTC, GTSI, PEE, PEFB, PF and TTAP consistently is high which indicates the items are well fitted to construct and a solid basic for reliability and validity testing as well as further structural relationship in PLS-SEM.

The internal consistency of all constructs is high, with Cronbach alpha ranging from 0.878–0.902, demonstrating adequate multi-item measure scale reliability. The composite reliability is also high (rho_c = 0.911–0.927), indicating that the scores of latent variables are stable in the PLS environment. Confirmatory validity is established as AVE lies between 0.672 and 0.718, above 0.5 (typical lower bounds) and showing that each construct explains a high proportion of the variance in its measures. The AVE of PEFB (0.718) and PF (0.709) have the most resistant convergent validity, indicating relatively high internal consistency in their measurement for earmarking benefits and fairness perception respectively. Taken together, the reliability and convergent validity statistics provide evidence to continue to discriminant validity testing and structural model evaluation.

Regarding the discriminant validity between the key constructs, the values of HTMT reported meet with an adequate acceptance. All HTMT estimates are below the widely used conservative cut-off, with the strongest associations observed between TTAP–GTC (0.682) and TTAP–PEFB (0.632), mirroring intuitive governance- and revenue-use related perceptions but also remaining sufficiently orthogonal. All other HTMT values are moderate to somewhat low (e.g., FIS–GTSI = 0.270), which indicates a clear distinction between disaster impact severity and policy support/compliance intention. Taken together, these findings provide evidence for each construct representing a distinct conceptual domain and alleviated concerns regarding construct overlap and the interpretability of path coefficients and interaction effects within the structural model.

Table 1. Indicator Loadings and Measurement Model Assessment

Construct	Indicator	Loading
FIS	FIS1	0.807
	FIS2	0.837
	FIS3	0.838
	FIS4	0.826
	FIS5	0.818
GTC	GTC1	0.827
	GTC2	0.853
	GTC3	0.83
	GTC4	0.861
	GTC5	0.829
GTSI	GTSI1	0.832
	GTSI2	0.855
	GTSI3	0.846
	GTSI4	0.793
	GTSI5	0.814
PEE	PEE1	0.805

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Construct	Indicator	Loading
	PEE2	0.841
	PEE3	0.824
	PEE4	0.848
	PEE5	0.814
PEFB	PEFB1	0.859
	PEFB2	0.855
	PEFB3	0.824
	PEFB4	0.873
	PEFB5	0.827
PF	PF1	0.836
	PF2	0.857
	PF3	0.847
	PF4	0.836
	PF5	0.834
TTAP	TTAP1	0.832
	TTAP2	0.833
	TTAP3	0.781
	TTAP4	0.84
	TTAP5	0.812

Table 2. Internal Consistency Reliability and Convergent Validity

Construct	Cronbach's Alpha	(rho_a)	(rho_c)	AVE
FIS	0.884	0.892	0.914	0.681
GTC	0.896	0.907	0.923	0.706
GTSI	0.885	0.888	0.916	0.686
PEE	0.884	0.884	0.915	0.683
PEFB	0.902	0.91	0.927	0.718
PF	0.897	0.9	0.924	0.709
TTAP	0.878	0.878	0.911	0.672

Table 3. HTMT

	FIS	GTC	GTSI	PEE	PEFB	PF	TTAP
FIS	–						
GTC	0.421	–					
GTSI	0.27	0.395	–				
PEE	0.354	0.414	0.382	–			
PEFB	0.315	0.561	0.412	0.381	–		
PF	0.337	0.505	0.343	0.431	0.388	–	
TTAP	0.334	0.682	0.393	0.442	0.632	0.424	–

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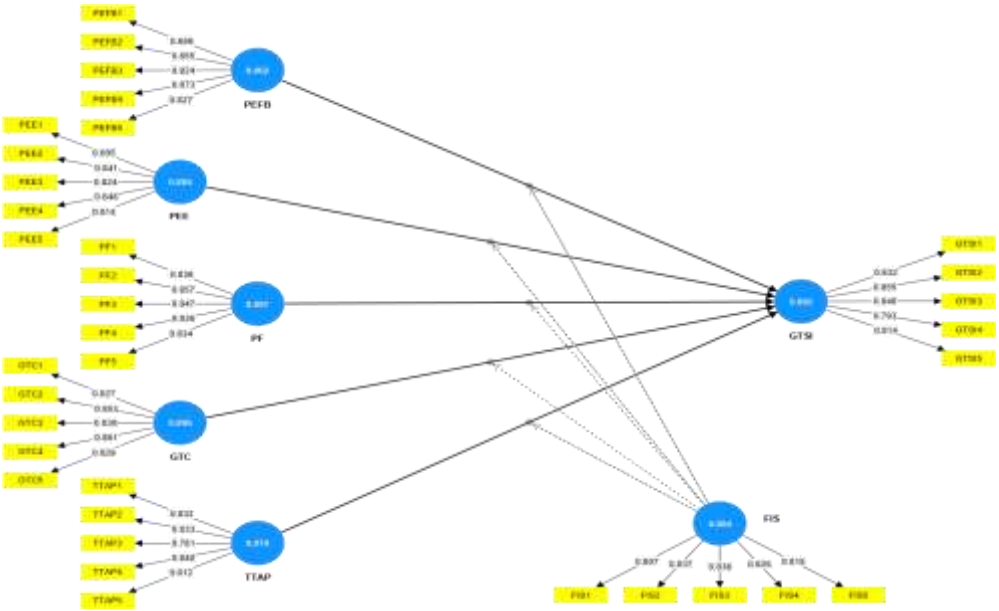

Figure 1. Outer model

4.2 Structural Model Results

According to the structural results, earmarked flood-mitigation benefit (H1: β=0.171, p<0.001) and perceived environmental effectiveness (H2: β=0.164, p<0.001) take the crown in terms of direct effects on green tax support and compliance intention, followed by fairness (H3: β=0.105; p = 0.016) and government trust/competence (H4: β= 0.105; p < 00). Transparency/accountability (H5) and direct effect of flood severity (FIS → GTSI) are not statistically significant. The moderation tests show that the intensity of floods enhances the influence of labelled benefits (H6: β=0.171, **p<0.01) and fairness (H8: β=0.134, *p<0.01), while moderation for effectiveness and transparency is not supported (H7). The effect interacts with trust weakly (p=0.056).

The model accounts for a substantive proportion of variance in green tax support and compliance intention (R^2=0.358; adjusted R^2=0.343), considering that the model based on perception had moderate explanatory power. The estimates from the effect size analysis indicate that perceived environmental effectiveness (f^2=0.031) and targeted flood-mitigation benefits (f^2=0.028) provide the greatest explanatory value added among the direct predictors, in line with their greater path coefficients. In terms of moderation, that there is a significant contribution of FIS×PEFB (f^2=0.026) to flood severity followed by FIS×PF (f^2=0.019), highlights the substantive relevance of the flood severity in qualifying how earmarking and fairness affect support. All other predictors and interaction terms have attenuated effects (≤0.012), indicating less discriminative incremental contribution to GTSI.

Blindfolding predictions reveal that the predictive value for endogenous construct is satisfactory. The cross-validated redundancy for GTSI (Q^2=0.228) is greater than zero, indicating that the structural model has predictive ability, out-of-sample, in terms of support and compliance intention. Cross-validated communality estimates are uniformly large across constructs (Q^2=0.502–0.571), suggesting high measurement-level predictave accuracy of the indicators in explaining their respective constructs. The best fit to the data is achieved for PEFB (Q^2=0.571) and PF (Q^2=0.555), which is in agreement with their high AVE values and strong loadings. Overall, these Q^2 results indicate that both measurement and structural elements are predicting in a meaningful way, particularly to the central policy outcome construct (GTSI).

Figure 2 depicts the structural relationships among constructs with their levels of explanatory power for Green Tax Support and Compliance

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Intention (GTSI). The model also indicates that perceived marked flood-mitigation benefits and environmental effectiveness have the two strongest positive direct effects on G′TSI, while perceived fairness as well as government trust and competence came in next. GTSI, flooding severity does not act as a direct determinant of GTSI; its role appears to be more moderating, which is especially noticeable in increasing the importance of earmarked benefits and fairness on support and compliance intentions. The R2 = 0.36 of the GTSI indicates relatively limited explained variance, which is modest in scope but suggests that the model adequately represents important perceptual and contextual determinants of public acceptance to green taxation in face of flood risk.

Table 4. Structural Path Coefficients and Hypothesis Testing Results

Hypothesis	Path	β (O)	t-value	p-value	Decision
H1	PEFB → GTSI	0.171	3.53	0.000	Supported
H2	PEE → GTSI	0.164	3.78	0.000	Supported
H3	PF → GTSI	0.105	2.42	0.016	Supported
H4	GTC → GTSI	0.105	2.026	0.043	Supported
H5	TTAP → GTSI	0.076	1.538	0.124	Not supported
–	FIS → GTSI	0.057	1.282	0.200	Not supported
H6	FIS×PEFB → GTSI	0.171	3.25	0.001	Supported
H7	FIS×PEE → GTSI	-0.009	0.209	0.834	Not supported
H8	FIS×PF → GTSI	0.134	3.14	0.002	Supported
H9a	FIS×GTC → GTSI	0.100	1.911	0.056	Not supported (marginal)
H9b	FIS×TTAP → GTSI	0.061	1.273	0.203	Not supported

Table 5. Coefficient of Determination (R^2) and Effect Size (f^2)

Endogenous Construct	R^2	Adjusted R^2	Predictor → GTSI	f^2
GTSI	0.358	0.343	PEE → GTSI	0.031
			PEFB → GTSI	0.028
			PF → GTSI	0.012
			GTC → GTSI	0.009
			TTAP → GTSI	0.005
			FIS → GTSI	0.004
			FIS × PEFB → GTSI	0.026
			FIS × PF → GTSI	0.019
			FIS × GTC → GTSI	0.008
			FIS × TTAP → GTSI	0.003
			FIS × PEE → GTSI	0

Table 6. Predictive Relevance of the Structural Model (Q^2)

Construct	Predictive Measure	Q^2
GTSI	Cross-validated redundancy	0.228
FIS	Cross-validated communality	0.514
GTC	Cross-validated communality	0.552
GTSI	Cross-validated communality	0.524
PEE	Cross-validated communality	0.518
PEFB	Cross-validated communality	0.571
PF	Cross-validated communality	0.555
TTAP	Cross-validated communality	0.502

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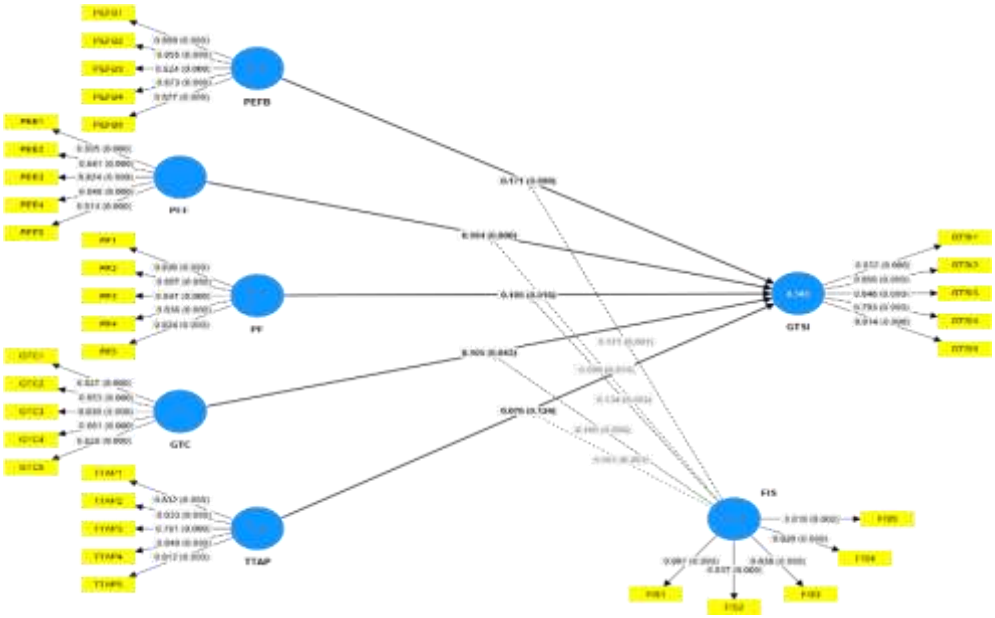

Figure 2. Inner model

4.3 Moderation effects of flood impact severity

Through the lens of a moderation model, we get more detailed understanding into how flood severity impact impacts individuals' adaption to and appreciation for green tax measures.? The findings suggest that there is a selective & context-sensitive effect of the degree of floodiness rather than some uniform affect for each element of attitude. In particular, extent of flood damage significantly intensifies the direct effect of perceived earmarked flood-mitigation benefits on green tax support and compliance intention (β = 0.171, $p < 0.001$). The intuition is that if extremeflood-impacted households clearly see how the revenues from green taxes are being spent on flood preparedness, recovery, and adaptation plans they are more likely to support taxes. Also, the augmented perceived fairness (β = 0.134, $p<0.002$) suggested that disaster-affected communities would become more focalized with distributive and procedural justice, especially whether tax burdens and benefits are shared equally.

On the other hand, degree of flood severity does not moderate a∫ects of perception of environmental effectiveness or tax transparency indicating that attitude regarding to effective result and disclosure information are relatively constant regardless personal disaster exposure. The marginal moderating role of government trust and competence indicates that extreme flooding may increase belief in institutions to deliver, but it also does not necessarily lead to greater compliance intentions. Taken together, our results suggest that disaster experience increases support for green taxation mainly when policies generate visible, fair and locally-relevant benefits, thereby highlighting the importance of benefit earmarking and justice-oriented design in climate change related fiscal instruments.

Table 7. Moderating Effects of Flood Impact Severity on Structural Relationships

Hypothesis	Moderating Path	β (O)	t-value	p-value	Effect Size (f^2)	Decision
H6	FIS × PEFB → GTSI	0.171	3.25	0.001	0.026	Supported
H7	FIS × PEE → GTSI	-0.009	0.209	0.834	0	Not supported

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Hypothesis	Moderating Path	β (O)	t-value	p-value	Effect Size (f^2)	Decision
H8	FIS × PF → GTSI	0.134	3.14	0.002	0.019	Supported
H9a	FIS × GTC → GTSI	0.1	1.911	0.056	0.008	Not supported (marginal)
H9b	FIS × TTAP → GTSI	0.061	1.273	0.203	0.003	Not supported

4.4 Discussion

This study contributes to the 'green tax' literature by showing that perceived hypothecated flood-mitigation benefits are central to public support and intent to comply, particularly in a climate-vulnerable context. Based on Tax Justice Theory (Rawls, 1971) and Fiscal Exchange Theory (Alm & Torgler, 2006), our results support the idea that people are more likely to assent to the state taking their money if those contributions lead clearly and fairly to public outcomes. Emerging empirical evidence suggests that if environmental tax revenues are earmarked to visible climate adaptation shows such initiatives are effective in increasing legitimacy and decreasing opposition toward taxation (Annicchiarico et al., 2021; Beiser-McGrath et al., 2021; Klenert et al., 2018). The current study builds on existing research by placing earmarking within flood-risk contexts, and it demonstrates that disaster exposure makes citizens more sensitive to whether tax revenues go towards directly offsetting lived vulnerabilities. This global lesson is that green taxes should be managed as flexible fiscal devices and not simple environmental pricing instruments.

The effect of perceived environmental effectiveness is consistent with outcome-based legitimacy theory (Scharpf, 2009) and policy feedback theory (Clermont et al., 2025; Pearson, 2014), both of which argue that popular support for policy depends on the public's perceptions about whether a particular policy has teeth in terms of delivering desirable outcomes. In recent climate-policy studies, a higher public acceptance of environmental taxes is repeatedly reported to be the case if these measures are perceived as effectively reducing emissions or harm (Annicchiarico et al., 2021; Bechtel et al., 2022; Drews & van den Bergh, 2016b, 2016a). This study offers new perspective in that perceptions of effectiveness continue to be a robust motivator even under high levels of flood exposure, which imply they are not easily over-ridden by temporary disaster stress. From a global perspective, this result underlines that green tax policies need to transparently communicate their environmental outcomes in order to maintain long-term public legitimacy across varying risk conditions.

The positive effect of perceived fairness demonstrates the continued value of Distributive and Procedural Justice Theory (Lind & Tyler, 1988; Tyler, 1990) in environmental governance. It is extensively evidenced that fairness perceptions – especially burden sharing and protection of vulnerable groups–are key predictors of the public acceptance of climate taxation (Annicchiarico et al., 2021; Carattini, 2022; Douenne & Fabre, 2022; Hammar et al., 2009; Hammar & Jagers, 2006). Our study contributes to the literature by showing that fairness concerns are accentuated in flood-exposed contexts, where citizens experience highly uneven climate risk and recovery exposure. Recent disaster-policy research indicates that such impact events increase the public's attention to how policies do or do not deal equitably with those communities affected by them (Bubeck et al., 2022; Botzen et al., 2023). The overall take-away is that green taxes need equity-centered design elements to rest on a more solid social sustainability basis in times of climate injustice.

The results on trust and competence in government are in line with Institutional Trust Theory (Levi, 1998) and State Capacity Theory (Besley & Persson, 2011) asserting that public trust is a cost issue, reducing the cost of compliance and facilitating voluntary cooperation. Empirical evidence from Public finance and environmental policy shows that trust in the government has a huge effect on tax morale and acceptance of regulatory interventions (Torgler, 2007; Kirchler et al., 2021; Gangl et al, 2023), This paper enlarges these findings by locating trust in the context of a disaster, where demands for institutional performance are heightened. Although trust is not deterministic in its effect on compliance, the results indicate that it serves as an important facilitative condition of policy acceptance. More generally, this underlines the imperative of building institutional reliability by adopting financial innovation, especially for

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countries already subjected to repeated shocks from climate impacts.

One theoretical novelty in this research has been to study perceives severity of flood impact as a moderating mechanism based on Risk Perception Theory (Slovic, 1987) and Protection Motivation Theory (Rogers, 1975). Previous research has shown that the experience of extreme weather events is associated with increased risk perception and support for climate policy (Demski et al., 2017; Baccini & Leemann, 2021; Egan & Mullin, 2023). This study provides a refinement of this perspective by demonstrating that disaster severity enhances the roles of earmarked benefits and fairness selectively, rather than generalizes to all types of policy perceptions. This selective amplification contributes a theoretical innovation by elucidating how lived climate experience reframes policy evaluation pathways. Policy implications on global level From a policy point of view, the results show that green tax design should be adaptable to context relevant, especially in areas increasingly affected by climate disasters.

Altogether, the debate emphasizes that framing green taxing not only in terms of emissions reduction but also as a vehicle for climate adaptation finance and social protection can be considered innovative. Drawing upon the tax justice, policy acceptability, institutional trust and risk perception literature, this analysis provides a full account of how and why climate-stressed citizens are willing to support green taxes. The findings offer insight at a global level for policy makers wishing to harmonise environmental fiscal policy with disaster resilience, social legitimation and long term public compliance in the face of a changing climate.

5. Conclusion

It presents evidence that public support and compliance intentions towards green taxation depend not only on environmental concerns, but also on how fiscal policies react to climate-related risks and social norms. The results highlight the perceived earmarked flood-mitigation benefits, perceived environmental effectiveness, fairness and government competence as key rationales to enhance public acceptance of green taxes especially in flood-prone areas. Crucially, the study finds that flood severity conditions these relationships, heightening the importance of material benefits and distributive justice demonstrating that fiscal design should be sensitive to context. By drawing on tax justice, policy acceptability, institution trust and risk perception approaches, this research re-conceptualizes green taxation as an adapted public finance tool for environmental sustainability and disaster resilience building. The implications are relevant globally, indicating for instance that by clearly earmarking revenues to climate adaptation, either directly or proportionally to the degree of salience, assuring fair distribution of burdens and institutional trustworthiness would heighten legitimacy among governments' implementations on green taxes. In sum, this paper sheds light on the debate about climate fiscal policy by stating that socially-responsive and risk-aware tax design is crucial to help secure public support in times of growing climate uncertainty.

CRediT Author Statement

Eka Indriastuti: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing - original draft. Umatun Markhumah: Conceptualization, Supervision, Validation, Methodology, Writing – review & editing; Project administration.

Declaration of Competing Interest

The authors declare no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Data Availability Statement

The data used to support the findings of this study are available from the corresponding author upon request. Data for this study were gathered from a structured online survey and analyzed utilizing Partial Least Squares Structural Equation Modeling.

Appendix/Appendices

Appendix Data A. Population, Sample Distribution, and Respondent Profile

Section	Variable / Region	Description	Coding / Value
A. Population & Sample Distribution			
	Region 1	Aceh Tamiang	61 respondents
	Region 2	North Sumatra	61 respondents
	Region 3	West Sumatra	61 respondents
	Region 4	Riau	61 respondents
	Region 5	Greater Jakarta	61 respondents
	Region 6	Central Java	61 respondents
	Region 7	South Kalimantan	60 respondents
	Region 8	South Sulawesi	60 respondents
		Total Sample	486 respondents
B. Respondent Demographics			
	ID	Respondent identifier	1–486
	Lokasi	Region of residence	8 flood-prone regions
	Gender	Gender	1 = Male, 2 = Female
	Usia	Age	20–65 years
	Pendidikan	Education level	1 = Primary … 6 = Postgraduate
	Lama_Tinggal_Tahun	Length of residence	2–40 years
	Flood_Experience	Flood exposure	1 = Yes, 0 = No
C. Measurement Indicators			
	PEFB1–PEFB5	Perceived earmarked flood-mitigation benefit	Likert scale (1–5)
	PEE1–PEE5	Perceived environmental effectiveness	Likert scale (1–5)
	PF1–PF5	Perceived fairness of green tax	Likert scale (1–5)
	GTC1–GTC5	Government trust and competence	Likert scale (1–5)
	TTAP1–TTAP5	Tax transparency and accountability perception	Likert scale (1–5)
	FIS1–FIS5	Flood impact severity	Likert scale (1–5)
	GTSI1–GTSI5	Green tax support and compliance intention	Likert scale (1–5)
D. Moderation Terms			
	PEFB×FIS	Interaction term	Mean-centered
	PF×FIS	Interaction term	Mean-centered
	GTC×FIS	Interaction term	Mean-centered

Appendix Data B. Variable Measurement Instrument

Variable	Code	Indicator Description	Scale
Perceived Earmarked Flood-Mitigation Benefit (PEFB)	PEFB1–PEFB5	Perceived allocation of green tax revenue to flood mitigation, recovery, and adaptation programs	Likert 1–5
Perceived Environmental Effectiveness (PEE)	PEE1–PEE5	Perceived effectiveness of green tax in reducing environmental damage and emissions	Likert 1–5
Perceived Fairness of Green Tax (PF)	PF1–PF5	Perceived procedural and distributive fairness of green tax policy	Likert 1–5
Government Trust and Competence (GTC)	GTC1–GTC5	Trust in government integrity, capability, and performance in managing green tax revenue	Likert 1–5
Tax Transparency and Accountability Perception (TTAP)	TTAP1–TTAP5	Perceived transparency, reporting quality, and accountability of green tax revenue use	Likert 1–5
Flood Impact Severity (FIS)	FIS1–FIS5	Severity of household-level flood impacts (damage, disruption, recovery burden)	Likert 1–5
Green Tax Support and Compliance Intention (GTSI)	GTSI1–GTSI5	Support for green tax policy and intention to comply with its implementation	Likert 1–5

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References

Annicchiarico, B., Carattini, S., Fischer, C., & Heutel, G. (2021). Business Cycles and Environmental Policy: Literature Review and Policy Implications. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3889139

Bechtel, M. M., Scheve, K. F., & van Lieshout, E. (2022). Improving public support for climate action through multilateralism. *Nature Communications*, *13*(1), 6441. https://doi.org/10.1038/s41467-022-33830-8

Beiser-McGrath, L. F., Bernauer, T., Song, J., & Uji, A. (2021). Understanding public support for domestic contributions to global collective goods. *Climatic Change*, *166*(3), 51. https://doi.org/10.1007/s10584-021-03137-6

Besley, T., & Dray, S. (2024a). Trust and State Effectiveness: The Political Economy of Compliance. *Economic Journal*, *134*(662), 2225–2251. https://doi.org/10.1093/ej/ueae030

Besley, T., & Dray, S. (2024b). Trust and State Effectiveness: The Political Economy of Compliance. *The Economic Journal*, *134*(662), 2225–2251. https://doi.org/10.1093/ej/ueae030

Bhatti, S. S., Rana, I. A., & Routray, J. K. (2023). Editorial: Flood risk perception, vulnerability, and risk: from assessments to analyses. *Frontiers in Water*, *Volume 5-2023*. https://doi.org/10.3389/frwa.2023.1258709

Bulut, H., & Samuel, R. (2025). Public support for carbon taxes varies across countries and policy design must consider the national context. *Communications Earth and Environment*, *6*(1). https://doi.org/10.1038/s43247-025-02562-0

Carattini, S. (2022). *Political challenges of introducing environmental tax reforms in developing countries*. 1–30.

Clermont, D., Nieto, V., Alpert, E., Yao, E., & Cothron, A. (2025). How socioeconomic and structural barriers influence dental care among transgender people. *Journal of Public Health Dentistry*, *85*(1), 73–83. https://doi.org/https://doi.org/10.1111/jphd.12655

Douenne, T., & Fabre, A. (2022). Yellow Vests, Pessimistic Beliefs, and Carbon Tax Aversion. *American Economic Journal: Economic Policy*, *14*(1), 81–110. https://doi.org/10.1257/pol.20200092

Drews, S., & van den Bergh, J. C. J. M. (2016a). Public views on economic growth, the environment and prosperity: Results of a questionnaire survey. *Global Environmental Change*, *39*, 1–14. https://doi.org/https://doi.org/10.1016/j.gloenvcha.2016.04.001

Drews, S., & van den Bergh, J. C. J. M. (2016b). What explains public support for climate policies? A review of empirical and experimental studies. *Climate Policy*, *16*(7), 855–876. https://doi.org/10.1080/14693062.2015.1058240

Hair, J., & Alamer, A. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics*, *1*(3), 100027. https://doi.org/https://doi.org/10.1016/j.rmal.2022.100027

Hammar, H., & Jagers, S. C. (2006). Can trust in politicians explain individuals' support for climate policy? The case of CO2 tax. *Climate Policy*, *5*(6), 613–625. https://doi.org/10.1080/14693062.2006.9685582

Hammar, H., Jagers, S. C., & Nordblom, K. (2009). Perceived tax evasion and the importance of trust. *The Journal of Socio-Economics*, *38*(2), 238–245. https://doi.org/https://doi.org/10.1016/j.socec.2008.07.003

Huttarsch, J.-H., & Matthies, E. (2024). Perceived carbon pricing effectiveness impacts its perceived fairness – Applying and extending a theoretical framework. *Journal of Environmental Psychology*, *97*, 102356. https://doi.org/https://doi.org/10.1016/j.jenvp.2024.102356

ISSN: 3047-4108 P-ISSN: 3048-3751
Journal Economic Business Innovation -JEBI, Vol. 02, Issue.3 2025, Page. 440-455
DOI: https://doi.org/10.69725/jebi.v2i3.316

Johnson, L. M., Keune, M. B., & Winchel, J. (2019). U.S. Auditors' Perceptions of the PCAOB Inspection Process: A Behavioral Examination. *Contemporary Accounting Research*, *36*(3), 1540–1574. https://doi.org/https://doi.org/10.1111/1911-3846.12467

Jun, W., Nasir, M. H., Yousaf, Z., Khattak, A., Yasir, M., Javed, A., & Shirazi, S. H. (2021). Innovation performance in digital economy: does digital platform capability, improvisation capability and organizational readiness really matter? *European Journal of Innovation Management*, *25*(5), 1309–1327. https://doi.org/10.1108/EJIM-10-2020-0422

Klenert, D., Schwerhoff, G., Edenhofer, O., & Mattauch, L. (2018). Environmental Taxation, Inequality and Engel's Law: The Double Dividend of Redistribution. *Environmental and Resource Economics*, *71*(3), 605–624. https://doi.org/10.1007/s10640-016-0070-y

Köhler, L., & Han, S. (2024). The driving effect of experience: How perceived frequency of floods and feeling of loss of control are linked to household-level adaptation. *International Journal of Disaster Risk Reduction*, *112*, 104745. https://doi.org/https://doi.org/10.1016/j.ijdrr.2024.104745

Martin, J., Bosshard, A., Dupeyrat, J., & Huz, O. (2021). Yellow Vests. *Membrana – Journal of Photography, Theory and Visual Culture*, *6*(1), 7–9. https://doi.org/10.47659/mj-v6n1id112

Mohammadzadeh Valencia, F., Mohren, C., Ramakrishnan, A., Merchert, M., Minx, J. C., & Steckel, J. C. (2024). Public support for carbon pricing policies and revenue recycling options: a systematic review and meta-analysis of the survey literature. *Npj Climate Action*, *3*(1), 1–10. https://doi.org/10.1038/s44168-024-00153-x

Palazzoli, I., Puglisi, C., Binelli, C., Muttarak, R., & Ceola, S. (2026). Public perceptions and responses to flood risk: Evidence from the 2023 flood events in Italy. *International Journal of Disaster Risk Reduction*, *132*, 105981. https://doi.org/https://doi.org/10.1016/j.ijdrr.2025.105981

Pearson, E. (2014). Saying Yes to Taxes: The Politics of Tax Reform Campaigns in Three Northwestern States, 1965–1973. *American Journal of Sociology*, *119*(5), 1279–1323. https://doi.org/10.1086/675386

Scharpf, F. W. (2009). Legitimacy in the multilevel European polity. *European Political Science Review*, *1*(2), 173–204. https://doi.org/DOI: 10.1017/S1755773909000204