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Administrative Burden, Trust, and Household Responses to India's Rooftop Solar Scheme

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ABSTRACT

Subsidy programs for household rooftop solar depend on citizens who are willing to apply and to recommend the program to others. This study examines how perceived administrative burden of India's PM Surya Ghar scheme relates to households' intention to apply and their word of mouth about the scheme. Drawing on the administrative burden framework and policy feedback theory, it proposes that a burdensome scheme teaches citizens that the agencies running it cannot be relied upon. This erosion of trust, in turn, reduces both private take-up and public advocacy. Survey data were collected from 364 urban homeowners across four regions of India. Perceived administrative burden was negatively related to trust in the agencies running the scheme. Trust was positively related to both intentions to apply and word of mouth. Trust mediated the link between burden and intention to apply and the link between burden and word of mouth. The findings extend research on administrative burden, rooftop solar adoption, and policy feedback. They suggest that the process of claiming a green subsidy shape not only who applies but also what citizens tell their neighbors.

Keywords: Administrative Burden, Trust in Government, Rooftop Solar, Policy Feedback, Word Of Mouth, India
JEL Classifications: D1, Q39

1. INTRODUCTION

Household rooftop solar has become a central instrument of the energy transition. Its spread is social as well as economic. Installations cluster where neighbors have already adopted, and each new system raises the probability of further adoption nearby (Bollinger and Gillingham, 2012). Peer influence shapes a wide range of household energy decisions (Wolske et al., 2020). It operates across income groups (O'Shaughnessy et al., 2023) and even extends from non-residential installations to residential choices (O'Shaughnessy et al., 2023). India has made this transition a policy priority. In February 2024, the Union Cabinet approved PM Surya Ghar: Muft Bijli Yojana, with an outlay of ₹75,021 crore, to install rooftop solar and provide up to 300 units of free electricity a month to one crore households (Prime Minister's Office, 2024).

Uptake has not kept pace with interest. By July 2025, about 5.8 million households had applied, but only 22.7% of applications had become completed installations (Upadhyay and Sharma, 2025). The scheme mandates a 30-day approval window, yet actual timelines ran from 45 to 120 days, and portal errors and weak complaint tracking delayed subsidy payments (Upadhyay and Sharma, 2025). These frictions fit what public administration scholars call administrative burden. We define perceived administrative burden as citizens' appraisal that a program is onerous to deal with, following the view of burden as an individual's experience of policy implementation as onerous (Moynihan et al., 2015). Such burden comprises learning, compliance, and psychological costs, and citizens can perceive it before they deal with a program directly (Kang et al., 2025). Burden is not always unwelcome to the public. Information about burdens can raise favorability toward a program

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(Keiser and Miller, 2020), and the mass public often supports demanding requirements (Keiser et al., 2021).

However, burden can also change how citizens see the state itself. Losing access to benefits through burdensome processes reduces trust in government and civic predisposition (Bell et al., 2024). Sanctions can lower the perceived legitimacy of the agency that imposes them (Sievert and Bruder, 2024). Yet a recall experiment among welfare recipients found little support for the claim that burdensome encounters reduce institutional trust (Mikkelsen et al., 2025). Experiences of burden also vary across countries and policy domains, and most evidence comes from Western countries and social policies (Baekgaard et al., 2025). Whether the burden of a green subsidy program shapes citizens' trust and, through it, their take-up and advocacy remains an open question.

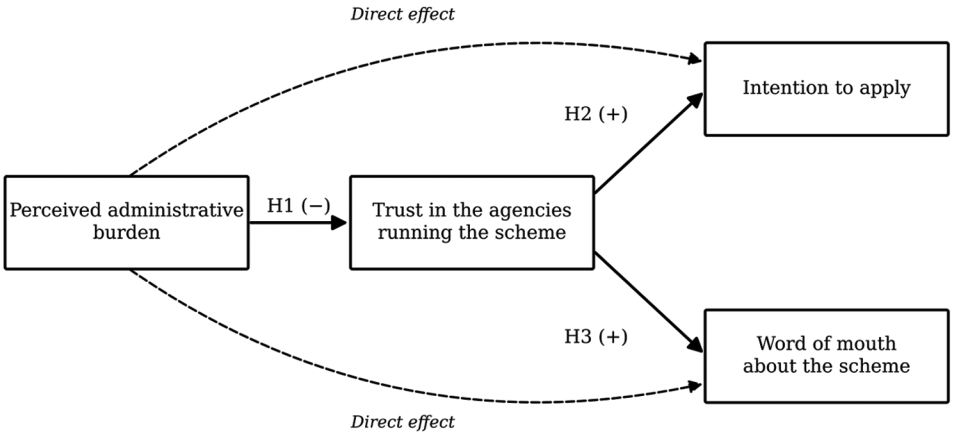
Addressing this gap is important for two reasons. First, administrative burden research has focused mainly on welfare programs, where take-up is the outcome of interest (Halling and Baekgaard, 2024). Energy subsidies differ. Their success depends on whether citizens apply and whether they spread the word, because adoption diffuses through social networks (Wolske et al., 2020). A model that links burden to both outcomes tests whether burden reaches beyond the individual applicant. Second, the scheme's targets depend on converting interest into installations. Policymakers need to know whether simplifying the process matters only for the household that applies, or also for the households that hear about it.

The present study responds to this need by developing and testing a model of how perceived administrative burden shapes households' intention to apply and their word of mouth about the scheme. Using the administrative burden framework (Moynihan et al., 2015) together with policy feedback theory (Pierson, 1993), we contend that burden carries an interpretive message. A scheme that is hard to navigate teaches citizens that the agencies running it are not competent, caring, or honest. That lesson then guides both private choices and public talk.

Trust in the agencies running the scheme carries this effect. Trust is the willingness to be vulnerable to another party on the expectation that it will act in one's interest (Mayer et al., 1995). In government settings, it rests on citizens' perceptions of an organization's competence, benevolence, and integrity (Grimmelikhuijsen and Knies, 2017). Applying for a rooftop subsidy requires such vulnerability. Households pay vendors upfront and wait for approvals, inspections, and subsidy transfers. Trust should therefore shape intention to apply, the household's plan to apply under the scheme within the next year (adapted from Venkatesh et al., 2003). Trust should also shape word of mouth, the household's willingness to say positive things about the scheme and recommend it to others (adapted from Zeithaml et al., 1996). Recommending a government program means vouching for the state, and citizens are unlikely to do so for agencies they distrust.

This study makes three contributions. First, it contributes to the literature on administrative burden. Studies in this stream have examined burden mainly in welfare and social programs and among direct clients (Bell et al., 2024; Halling and Baekgaard, 2024; Herd et al., 2023; Herd and Moynihan, 2023; Mikkelsen et al., 2025; Ray et al., 2023; Sievert and Bruder, 2024), and evidence on environmental programs remains scarce (Xu and Peng, 2025). We extend this literature by testing burden in a green subsidy program in a non-Western country, among citizens who are potential rather than current clients (Kang et al., 2025). Second, it contributes to the literature on rooftop solar adoption. This research has explained adoption through attitudes, innovation attributes, values, and peer influence (Alam et al., 2021; Bekti et al., 2022; Bollinger and Gillingham, 2012; Gajanayake et al., 2024; Kumar et al., 2022; Kumar et al., 2024; Wolske et al., 2020). We extend it by showing that the state's own process shapes adoption intention and advocacy. Third, it contributes to the literature on policy feedback. Scholars in this tradition have shown that policies shape citizens' views of government mainly through social and welfare programs (Campbell, 2012; Keiser and Miller, 2020; Mettler and Soss, 2004; Pierson, 1993). We extend this work to energy transition programs, where feedback can travel through word of mouth as well as individual take-up.

Figure 1: The proposed model



H4: Burden → Trust → Intention to apply (indirect effect). H5: Burden → Trust → Word of mouth (indirect effect).
Controls: age, gender, monthly electricity bill, prior contact with the scheme.

Together, these contributions show that the experience of claiming a green subsidy shapes citizens' trust, and that this trust reaches beyond the applicant to the wider community. Figure 1 presents the proposed model.

2. THEORETICAL BACKGROUND AND HYPOTHESES

2.1. Administrative Burden as a Lesson about the State

The administrative burden framework asks how the design and delivery of public programs shape citizens' experience of government. Moynihan et al. (2015) define burden as an individual's experience of policy implementation as onerous. They distinguish three costs. Learning costs arise from searching for information about a program and how to access it. Compliance costs arise from meeting rules, completing forms, and providing documents. Psychological costs include the stress, frustration, and loss of autonomy that accompany dealings with the state. These costs are rarely accidental. Burdens often reflect political choices about who should receive help and how easily, which makes them a form of policymaking by other means (Herd and Moynihan, 2018). They also fall unevenly, weighing most on citizens with the fewest resources to absorb them (Herd et al., 2023; Herd and Moynihan, 2023).

Early research treated burden mainly as a barrier to take-up. Citizens who face heavy costs are less likely to claim benefits for which they are eligible. More recent work has looked further. A review of 119 studies shows that the field now examines how burdens are experienced, how they are constructed, and how they shape attitudes as well as behavior (Halling and Baekgaard, 2024). This shift matters for the present study. It suggests that the consequences of a burdensome program extend beyond the decision to apply. They reach into what citizens believe about the government that runs it.

Policy feedback theory explains why. Policies do more than allocate resources. They also provide information and cues that encourage particular interpretations of the political world (Pierson, 1993). Citizens learn about government through the programs they encounter, and these lessons shape their stance toward the state and their participation in public life (Mettler and Soss, 2004). Policy design itself shapes the distance between citizens and government (Campbell, 2012). For most citizens, dealings with a specific program are among the few direct encounters they have with the state. The quality of those encounters becomes evidence about what government is like.

Moynihan et al. (2015) bring the two traditions together. They contend that burdensome processes undermine political efficacy and civic participation, and that burdens shape whether citizens see the state as a positive or negative force in their lives. We build on this integration and treat burden as a lesson about the state. From this view, we derive three propositions. The first is that burden is diagnostic. Citizens cannot observe an agency's internal capacity or intentions, so they infer these qualities from the process they see. The second is that these inferences settle into trust, a general expectation about how the agencies will behave in future dealings. The third is that trust guides conduct toward the program in two domains: the private decision to take part, and the public decision to speak about it.

PM Surya Ghar offers a strong setting for these propositions. Households apply through a national portal, choose a registered vendor, and depend on their electricity distribution company for approval, inspection, and net metering before the subsidy is released (Prime Minister's Office, 2024). Each step involves a different public or quasi-public actor. The scheme is also new. Citizens are forming their first impressions of the agencies involved, and these impressions are not yet anchored in years of experience. Delays and errors are frequent and visible. Approval timelines have run well beyond the 30-day window the scheme promises, and portal errors have slowed subsidy payments (Upadhyay and Sharma, 2025). These conditions make the process a salient source of information about the state.

2.2. Perceived Administrative Burden and Trust

Trust is the willingness of one party to be vulnerable to the actions of another, based on the expectation that the other will act in a way that matters to the trustor (Mayer et al., 1995). This willingness rests on three perceived qualities of the trustee: ability, benevolence, and integrity (Mayer et al., 1995). In public administration, these qualities appear as citizens' perceptions of a government organization's competence, its benevolence toward citizens, and its honesty (Grimmelikhuijsen and Knies, 2017). Each is an inference. Citizens rarely know how an agency works from the inside. They judge it by what it asks of them and how it treats them. This makes the three costs of burden a direct input into the three dimensions of trust.

Learning costs inform judgments of competence. When a scheme lacks information, offers little guidance, or makes its rules hard to understand, citizens conclude that the agencies behind it are poorly organized. A competent organization, in the citizen's eyes, is one that can explain what it offers and how to obtain it. Confusing eligibility rules, unclear steps on a portal, and inconsistent advice from different offices all suggest the opposite. The inference does not require a failed application. A citizen who struggles to understand the process has already learned something about the capacity of the people who designed it.

Compliance costs inform judgments of benevolence. Heavy paperwork, repeated document requests, and long waits shift work from the state to the citizen. When citizens bear these costs, they may conclude that the process serves administrative convenience or control more than the public it is meant to help. Burdens often encode judgments about who deserves support (Herd and Moynihan, 2018). Citizens who meet such burdens may sense that the agencies are not on their side. For a scheme that promises free electricity, this gap between the stated aim and the experienced process is likely to sharpen doubts about the agencies' goodwill.

Psychological costs inform judgments of integrity. A process that causes stress, makes people uncomfortable, or treats them badly invites the conclusion that the agencies do not deal sincerely with

the public. Integrity also concerns whether an organization keeps its word. PM Surya Ghar sets explicit expectations, including an approval window and a defined subsidy amount (Prime Minister's Office, 2024). When households experience delays well beyond the promised window (Upadhyay and Sharma, 2025), the difference between promise and performance becomes a test of honesty. Agencies that fail this test lose credibility, even when the delay arises from capacity limits rather than bad faith.

These inferences do not depend on direct contact. Perceived administrative burden can be measured, and forms, among broad audiences beyond a program's direct clients (Kang et al., 2025). Accounts of rejected documents, slow inspections, and delayed subsidies circulate among neighbors, relatives, and online communities. A homeowner who has never opened the portal may still hold a clear view of how burdensome the scheme is. For trust, this secondhand evidence can carry nearly as much weight as personal experience, because both speak to the same question: can these agencies be relied on?

Prior findings support this reasoning. Burdensome experiences that end in the loss of benefits reduce trust in government and civic predisposition (Bell et al., 2024). Different state actions shape policy perceptions in distinct ways, and sanctions in particular lower the perceived legitimacy of the agency that imposes them (Sievert and Bruder, 2024). Burdens also shape citizens' compliance with environmental policies (Xu and Peng, 2025). Experiences of burden vary across countries and policy domains, which calls for evidence beyond the Western welfare programs that dominate the field (Baekgaard et al., 2025).

Two lines of evidence point the other way, and both deserve attention. First, the public sometimes favors burden. Information about burdens can raise favorability toward a program (Keiser and Miller, 2020), and the mass public often supports demanding requirements (Keiser et al., 2021). This support arises mainly in means-tested welfare programs, where burden can reassure taxpayers that benefits reach deserving recipients. PM Surya Ghar is different. It is open to homeowners with a grid connection and suitable roof space, so burden has no deservingness screen to protect. Citizens are therefore more likely to construe it as obstruction than as safeguarding. Second, a recall experiment among welfare recipients found little support for the claim that burdensome encounters reduce institutional trust (Mikkelsen et al., 2025). Long-term welfare clients, however, hold views of their agencies shaped by years of contact, which a single recalled encounter may do little to move. In a new scheme, where impressions are still forming, burden should be more diagnostic. Taken together, these arguments lead us to expect that heavier perceived burden will accompany lower trust in the agencies running the scheme. Accordingly, we propose:

H_1: Perceived administrative burden is negatively related to trust in the agencies running the scheme.

2.3. Trust and Intention to Apply

The second proposition holds that trust guides private conduct toward the program. Applying for a rooftop subsidy is an act of vulnerability. Households commit money to a vendor and space on their roof before the subsidy arrives. They then depend on a sequence of public actors to approve the application, inspect the installation, install a net meter, and transfer the subsidy. At each step, the outcome lies outside the household's control. Trust matters most in exactly such conditions, where one party accepts risk on the expectation that another will perform (Mayer et al., 1995).

Households that trust the agencies expect this sequence to work. They anticipate that approvals will come, that inspections will be fair, and that the subsidy will be paid. These expectations lower the perceived risk of applying and raise its expected value. Households that distrust the agencies face a different calculation. They may fear that their money will be tied up, that their application will stall, or that the subsidy will never arrive. Such households may prefer to wait and watch how the scheme treats others before committing themselves.

Intention captures this commitment. Behavioral intention is a proximal determinant of subsequent behavior, and it has long served as the central outcome in models of adoption (Venkatesh et al., 2003). In the present context, intention to apply reflects a household's plan to take part in the scheme within a defined period. It is the point at which trust in the state translates into a concrete decision.

Research on rooftop solar adoption has explained intention mainly through the household's view of the technology. Attitudes, environmental concern, and perceived control predict intention to adopt (Alam et al., 2021; Bekti et al., 2022; Kumar et al., 2022). Innovation attributes such as relative advantage and simplicity shape attitudes toward adoption (Kumar et al., 2024). Personal values and future orientation predict willingness to install (Gajanayake et al., 2024). These accounts treat the decision as a choice between the household and the technology. Under a subsidy scheme, a third party enters the choice. Part of what households judge as simplicity or risk is the state's own process. Trust in the agencies running the scheme is therefore a distinct, state-side condition of intention, and one that existing models leave out. Accordingly, we propose:

H_2: Trust in the agencies running the scheme is positively related to intention to apply.

2.4. Trust and Word of Mouth

The third proposition holds that trust also guides public conduct. Word of mouth is a form of favorable behavioral intention. It includes saying positive things about a provider, recommending it to those who seek advice, and encouraging friends and relatives to use it (Zeithaml et al., 1996). When the provider is a government scheme, word of mouth becomes a form of everyday civic expression. Citizens who recommend the scheme speak on behalf of the state, at least within their own circles.

Such recommendations carry personal stakes. A citizen who encourages a friend to apply vouches for the agencies that will handle the friend's application. If the process fails, the recommender bears part of the social cost. Trust lowers this risk.

Citizens who believe the agencies are competent, well-meaning, and honest can recommend the scheme with confidence. Citizens who doubt them are likely to stay silent or warn others away. The decision to speak well of a program is therefore, in part, a statement about the state.

Policy feedback theory gives this expression a wider meaning. Burdensome encounters undermine civic participation (Moynihan et al., 2015) and reduce civic predisposition alongside trust (Bell et al., 2024). Civic life includes more than voting or contacting officials. It also includes the conversations through which citizens share their views of public programs with one another (Mettler and Soss, 2004). Word of mouth about a scheme is one such conversation, and one that is open to almost every citizen.

These conversations matter for the energy transition. Rooftop solar spreads through social networks. Adoption rises with the number of installations already present in a neighborhood (Bollinger and Gillingham, 2012). Peer influence shapes household energy behavior through observation, communication, and social comparison (Wolske et al., 2020). Peer effects operate across income groups (O'Shaughnessy et al., 2023) and extend from non-residential installations to residential choices (O'Shaughnessy et al., 2023). Word of mouth is the channel through which one household's view of the scheme reaches others who have not yet decided. Accordingly, we propose:

H_3: Trust in the agencies running the scheme is positively related to word of mouth about the scheme.

2.5. The Mediating Role of Trust

Taken together, H_1 to H_3 describe a feedback chain. Burden teaches citizens something about the agencies that run the scheme. This lesson shapes trust. Trust, in turn, shapes both the decision to apply and the willingness to recommend (Moynihan et al., 2015; Pierson, 1993). This sequence implies that the effect of perceived administrative burden on each outcome runs through trust.

Two features of the design help to isolate these effects. Monthly electricity bills capture the main financial motive for adoption, so the effects of burden and trust are estimated beyond the incentive to save. Prior contact with the scheme separates burden perceived through direct experience from burden perceived through secondhand accounts. Accordingly, we propose:

H_4: Trust in the agencies running the scheme mediates the negative relationship between perceived administrative burden and intention to apply.

H_5: Trust in the agencies running the scheme mediates the negative relationship between perceived administrative burden and word of mouth about the scheme.

3. METHODS

3.1. Setting

The study was set in India's PM Surya Ghar scheme. The scheme was launched in February 2024 with targets of 30 GW of residential rooftop solar and 10 million households by FY2027 (Upadhyay and Sharma, 2025). It provides central financial assistance of 60% of system cost for systems up to 2 kW and 40% of additional cost for systems between 2 and 3 kW, capped at 3 kW (Prime Minister's Office, 2024). Households apply through a national portal, choose a registered vendor, and obtain approval and net metering from their electricity distribution company before the subsidy is released. The scheme involves several agencies and steps, which makes it a suitable setting for studying administrative burden.

3.2. Participants and Sampling

The target population was urban homeowners in India who had not installed rooftop solar. Data were collected in June 2025 through a professional online panel provider. Eligibility required that respondents (a) were aged 18 or older, (b) owned the house they lived in and controlled its roof, (c) had a household electricity connection in their own name or a family member's name, (d) had not installed rooftop solar, and (e) were aware of the PM Surya Ghar scheme. Respondents who failed any screening question were exited from the survey.

Quota sampling was used to obtain coverage of four regions (North, South, East, and West India), a balanced gender split, and four age bands (18-29, 30-44, 45-59, and 60 and above). Initially, 500 people were contacted.

3.3. Procedure

Respondents received an invitation explaining the purpose of the study. It stated that participation was voluntary, that responses were anonymous, and that respondents could withdraw at any time. No names, addresses, or identification numbers were collected. Data were stored in password-protected files accessible only to the research team.

The questionnaire was developed in English and translated into Hindi using the back-translation procedure (Brislin, 1970). One bilingual researcher translated the items into Hindi, a second translated them back into English, and the team resolved discrepancies. Respondents could complete the survey in either language. Before the full launch, the questionnaire was released to 15 panel members as a soft launch. Their responses were checked for completion time, item nonresponse, and comprehension problems before fieldwork continued.

The questionnaire had six blocks, presented in a fixed order: screening questions, intention to apply, word of mouth, trust, perceived administrative burden, and demographics and controls. Placing the outcomes before the predictors reduced the chance that respondents would infer the intended links between constructs. Each block opened with a brief introduction. Two attention-check items were embedded. The first, in the trust block, read "Please select "Agree" for this item." The second, in the burden block, read "To show that you are reading carefully, please select "Strongly disagree" for this item."

We received 375 complete responses. Seven cases failed an attention check and four were straightliners. No duplicates were found. The final sample comprised 364 homeowners (97.07% of complete responses). Of these, 49.5% were female and the mean age was 40.87 years (SD = 9.12). The mean monthly electricity

bill was ₹2,814 (SD = ₹1,368). Overall, 41.8% reported prior contact with the scheme, such as visiting the portal or contacting their distribution company.

3.4. Measures

All substantive items used a five-point scale from 1 (strongly disagree) to 5 (strongly agree).

We measured perceived administrative burden with the 11-item scale (α = 0.92) from Kang et al. (2025), designed for broad audiences beyond direct program clients. The referent "This agency (program)" was replaced with "The PM Surya Ghar scheme." The items were: "The PM Surya Ghar scheme puts many obstacles in people's way." "The PM Surya Ghar scheme is burdensome for people to deal with." "The PM Surya Ghar scheme lacks information for people to access services." "The PM Surya Ghar scheme makes things difficult for people to understand." "The PM Surya Ghar scheme provides people with too little guidance." "The PM Surya Ghar scheme asks people for lots of paperwork." "The PM Surya Ghar scheme takes up people's time." "The PM Surya Ghar scheme charges people lots of fees." "The PM Surya Ghar scheme makes people feel uncomfortable." "The PM Surya Ghar scheme treats people badly." and "The PM Surya Ghar scheme causes a lot of stress to people."

Trust in the agencies running the scheme was measured with the nine-item (α = 0.91) Citizen Trust in Government Organizations scale (Grimmelikhuijsen and Knies, 2017), covering competence, benevolence, and integrity. Following the original's use of a policy-specific prefix, the block opened with the instruction: "When it concerns the PM Surya Ghar scheme, please indicate your agreement with the following statements about the government agencies running the scheme (the ministry and your electricity distribution company)." The items were: "The agencies running the scheme are capable." "The agencies running the scheme are expert." "The agencies running the scheme carry out their duty very well." "If citizens need help, the agencies running the scheme will do their best to help them." "The agencies running the scheme act in the interest of citizens." "The agencies running the scheme are genuinely interested in the well-being of citizens." "The agencies running the scheme approach citizens in a sincere way." "The agencies running the scheme are sincere." and "The agencies running the scheme are honest." Consistent with its role as an overall appraisal, trust was modeled as a single factor.

Intention to apply was measured with three items (α = 0.85) adapted from Venkatesh et al. (2003): "I intend to apply for rooftop solar under the PM Surya Ghar scheme in the next 12 months." "I predict I would apply for rooftop solar under the PM Surya Ghar scheme in the next 12 months." and "I plan to apply for rooftop solar under the PM Surya Ghar scheme in the next 12 months."

Word of mouth about the scheme was measured with three items (α = 0.82) adapted from Zeithaml et al. (1996): "I would say positive things about the PM Surya Ghar scheme to other people." "I would recommend the PM Surya Ghar scheme to someone who seeks my advice." and "I would encourage friends and relatives to apply under the PM Surya Ghar scheme."

Control variables. Age and gender were controlled. Monthly electricity bill, in thousands of rupees, was controlled because savings on electricity are the main financial motive for adoption. Prior contact with the scheme (1 = yes, 0 = no) was controlled to separate burden perceived through direct contact from burden perceived through secondhand accounts.

3.5. Common Method Variance

All variables came from the same respondents at one point in time. Several procedural remedies were therefore applied (Podsakoff et al., 2003). Outcomes and predictors were placed in separate blocks, with the outcomes first. Burden items were worded negatively and the other constructs positively, which reduced response consistency across blocks. Respondents were assured of anonymity and told that there were no right or wrong answers. Statistically, common method variance was assessed with Harman's single-factor test (Podsakoff et al., 2003).

3.6. Analytical Approach

The measurement model was assessed through confirmatory factor analysis (CFA) with maximum likelihood estimation. Convergent validity was examined through standardized loadings, composite reliability (CR), and average variance extracted (AVE). Discriminant validity was examined with the Fornell–Larcker criterion and heterotrait–monotrait (HTMT) ratios (Fornell and Larcker, 1981; Henseler et al., 2015).

Hypotheses were tested with Model 4 in Hayes's PROCESS macro (Hayes, 2022), estimated once for each outcome. Age, gender, monthly electricity bill, and prior contact were entered as covariates. Indirect effects were tested with percentile bootstrap confidence intervals based on 5,000 resamples. Mediation was inferred from the significance of the indirect effect (Zhao et al., 2010).

4. RESULTS

4.1. Measurement Model and Descriptive Statistics

Table 1 reports the standardized factor loadings, and Table 2 the validity statistics. The four-factor measurement model fit the data well, $\chi^2(293) = 349.53$, $\chi^2/df = 1.19$, CFI = 0.99, TLI = 0.98, SRMR = 0.04, RMSEA = 0.02. All standardized loadings were significant and ranged from 0.66 to 0.82.

Table 1: Standardized factor loadings (four-factor CFA)

Item	Loading	Item	Loading	Item	Loading
PAB		TRUST		INT	
PAB1	0.68	TR1	0.74	INT1	0.78
PAB2	0.75	TR2	0.66	INT2	0.81
PAB3	0.75	TR3	0.75	INT3	0.82
PAB4	0.75	TR4	0.75	WOM	
PAB5	0.74	TR5	0.74	WOM1	0.75
PAB6	0.68	TR6	0.71	WOM2	0.79
PAB7	0.72	TR7	0.74	WOM3	0.77
PAB8	0.70	TR8	0.74		
PAB9	0.72	TR9	0.74		
PAB10	0.73				
PAB11	0.72				

n=364. All loadings are significant at P<0.001. PAB: Perceived administrative burden, TRUST: Trust in the agencies running the scheme, INT: Intention to apply; WOM: Word of mouth about the scheme

Composite reliability ranged from 0.82 to 0.92, and Cronbach's alpha from 0.82 to 0.92. AVE ranged from 0.52 to 0.65, above the 0.50 benchmark for every construct, which supports convergent validity (Fornell and Larcker, 1981). The square root of each construct's AVE (0.72 to 0.81) exceeded its correlations with all other constructs. Maximum shared variance (0.06-0.09) stayed below the corresponding AVE. HTMT ratios did not exceed 0.30. Together, these results support discriminant validity (Fornell and Larcker, 1981; Henseler et al., 2015). The latent correlation between perceived administrative burden and trust (r=−0.30) indicates that respondents distinguished their appraisal of the scheme's process from their trust in the agencies running it.

Table 3 reports means, standard deviations, and correlations. Perceived administrative burden correlated negatively with trust (r=−0.27, P<0.001), intention to apply (r=−0.21, P<0.001), and word of mouth (r=−0.17, P<0.01). Trust correlated positively with intention to apply (r=0.20, P<0.001) and word of mouth (r=0.26, P<0.001). Monthly electricity bill correlated negatively with trust (r=−0.15, P<0.01).

Table 2: Discriminant and convergent validity

Construct	1	2	3	4	CR	AVE	MSV
1. PAB	**0.72**				0.92	0.52	0.09
2. TRUST	−0.30**	**0.73**			0.91	0.54	0.09
3. INT	−0.24**	0.23**	**0.81**		0.85	0.65	0.06
4. WOM	−0.20**	0.30**	0.21**	**0.77**	0.82	0.60	0.09

n=364. *P<0.05. **P<0.001. Off-diagonal values are latent factor correlations from the CFA. Bold diagonal values are the square roots of AVE. CR: Composite reliability, AVE: Average variance extracted, MSV: Maximum shared variance. HTMT ratios ranged from 0.20 to 0.30

Table 3: Descriptive statistics and correlations

Variable	M	SD	1	2	3	4	5
1. PAB	3.33	0.78					
2. TRUST	3.20	0.80	−0.27**				
3. INT	3.19	0.91	−0.21**	0.20**			
4. WOM	3.32	0.89	−0.17**	0.26**	0.17**		
5. Age	40.87	9.12	−0.05	−0.04	0.01	−0.05	
6. Monthly electricity bill	2.81	1.37	0.02	−0.15**	0.02	−0.04	−0.04

n=364. *P<0.05. **P<0.01. Correlations use scale composites. Monthly electricity bill is in thousands of rupees

4.2. Common Method Variance

Harman's single-factor test showed that a single factor accounted for 30.05% of the total variance, below the 50% threshold (Podsakoff et al., 2003). Together with the procedural remedies, this result suggests that common method variance is unlikely to be a serious concern in this study.

4.3. Hypothesis Testing

Table 4 presents the results. Perceived administrative burden was negatively related to trust (B = −0.28, SE = 0.05, 95% CI [−0.38, −0.17]), supporting H_1. The model explained 10.10% of the variance in trust.

Trust was positively related to intention to apply (B = 0.19, SE = 0.06, 95% CI [0.07, 0.31]), supporting H_2. Trust was also positively related to word of mouth (B = 0.25, SE = 0.06, 95% CI [0.13.,37]), supporting H_3.

The indirect effect of perceived administrative burden on intention to apply through trust was −0.05 (SE = 0.02, 95% bootstrap CI [−0.09, −0.02]), supporting H_4. The direct effect of burden on intention was significant (B = −0.19, SE = 0.06, 95% CI [−0.31, −0.07]). Trust accounted for approximately 21.42% of the total effect of burden on intention (B = −0.24, SE = 0.06, 95% CI [−0.36, −0.13]).

The indirect effect of perceived administrative burden on word of mouth through trust was −0.07 (SE = 0.02, 95% bootstrap CI [−0.12, −0.03]), supporting H_5. The direct effect of burden on word of mouth was significant (B = −0.13, SE = 0.06, 95% CI [−0.25, −0.02]), and the total effect was negative and significant (B = −0.20, SE = 0.06, 95% CI [−0.32, −0.09]).

Among the covariates, monthly electricity bill was negatively related to trust (B = −0.09, SE = 0.03, 95% CI [−0.14, −0.03]). No other covariate was significantly related to trust, intention to apply, or word of mouth.

5. DISCUSSION

This study asked how perceived administrative burden of India's rooftop solar scheme relates to households' intention to apply

Table 4: Mediation results (PROCESS Model 4)

Predictor	TRUST			INT			WOM		
	B	SE	95% CI	B	SE	95% CI	B	SE	95% CI
Constant	4.69	0.30	[4.11, 5.27]	2.97	0.44	[2.10, 3.84]	3.04	0.43	[2.19, 3.89]
PAB	−0.28	0.05	[−0.38, −0.17]	−.19	0.06	[−0.31, −0.07]	−0.13	0.06	[−0.25, −0.02]
TRUST				0.19	0.06	[0.07, 0.31]	0.25	0.06	[0.13, 0.37]
Age	−0.00	0.00	[−0.01, 0.00]	0.00	0.01	[−0.01, 0.01]	−0.00	0.01	[−0.01, 0.00]
Gender	−0.08	0.08	[−0.24, 0.08]	0.04	0.09	[−0.14, 0.23]	0.07	0.09	[−0.11, 0.25]
Monthly bill	−0.09	0.03	[−0.14, −0.03]	0.03	0.03	[−0.03, 0.10]	−0.00	0.03	[−0.07, 0.06]
Prior contact	−0.02	0.08	[−0.18, 0.14]	0.11	0.09	[−0.08, 0.29]	0.06	0.09	[−0.12, 0.25]
R^2	0.10			0.07			0.08		
Total effect of PAB				−0.24	0.06	[−0.36, −0.13]	−0.20	0.06	[−0.32, −0.09]
Indirect effect via TRUST				−0.05	0.02	[−0.09, −0.02]	−0.07	0.02	[−0.12, −0.03]

n=364. B: Unstandardized coefficient. The TRUST column is the same mediator model for both outcomes. Total effects are estimated without trust in the model. Indirect effects use percentile bootstrap confidence intervals based on 5,000 resamples, and their SEs are bootstrap SEs. Gender is coded 1=male and 2=female. Monthly bill is in thousands of rupees. Prior contact is coded 1=yes and 0=no

and their word of mouth about the scheme. Drawing on the administrative burden framework and policy feedback theory, we proposed that burden lowers trust in the agencies running the scheme, and that this loss of trust reduces both outcomes. The findings were consistent with this view. Perceived administrative burden was associated with lower trust, which was in turn associated with weaker intention to apply and less positive word of mouth.

5.1. Theoretical Implications

The study extends three literatures: Research on administrative burden, research on rooftop solar adoption, and research on policy feedback.

Studies of administrative burden have focused on welfare and social programs and on their direct clients (Bell et al., 2024; Halling and Baekgaard, 2024; Herd et al., 2023; Herd and Moynihan, 2023; Ray et al., 2023). Evidence on whether burdens erode trust is also mixed (Mikkelsen et al., 2025). Our findings point to a clear association in a different setting. Among potential applicants to a green subsidy program in India, perceived burden was linked to lower trust in the agencies involved. This supports the view that burden perceptions form beyond direct contact (Kang et al., 2025). It also adds to the small body of evidence on burdens in environmental policy (Xu and Peng, 2025) and responds to calls for research outside Western welfare states (Baekgaard et al., 2025).

Research on rooftop solar adoption has explained intention through attitudes, innovation attributes, values, and peer influence (Alam et al., 2021; Bekti et al., 2022; Bollinger and Gillingham, 2012; Gajanayake et al., 2024; Kumar et al., 2022; Kumar et al., 2024). These accounts treat the household as the decision unit and the technology as the object of choice. Our findings add the state to this picture. In subsidy-driven markets, adoption also means dealing with public agencies. The perceived burden of that interaction was related to intention even after the electricity bill, the main financial motive, was held constant.

Policy feedback theory holds that policies shape citizens' views of government through the information and cues they convey (Campbell, 2012; Mettler and Soss, 2004; Pierson, 1993). Most evidence comes from social programs (Keiser and Miller, 2020). Our results extend this view to an energy transition program. They also suggest a further channel of feedback. Burden shaped word of mouth through trust. Because peer influence drives solar diffusion (O'Shaughnessy et al., 2023; O'Shaughnessy et al., 2023; Wolske et al., 2020), trust lost through burden may slow adoption in the wider community, not only in the household that encounters the burden.

5.2. Practical Implications

The findings carry three implications for the Ministry of New and Renewable Energy, state agencies, and distribution companies. First, reducing burden is a trust-building measure. Clear guidance on the portal, fewer documents, and predictable timelines can raise trust as well as completion rates. Meeting the scheme's own 30-day approval window would send a strong signal of competence. Second, distribution companies deserve particular attention. They handle approvals, inspections, and net metering, and delays at this stage are visible to applicants. Coordinated service standards and transparent complaint tracking can address the stages where burden is most likely to arise (Upadhyay and Sharma, 2025).

Third, word of mouth is a policy asset. Because burden affected recommendation through trust, every burdensome experience may reduce the number of households that hear positive accounts of the scheme. Campaigns that rely on satisfied adopters as ambassadors will work only if the process has earned their trust.

6. CONCLUSION, LIMITATIONS AND FUTURE RESEARCH

This study set out to explain how the burden of a green subsidy scheme shapes citizens' response to it. Drawing on the administrative burden framework and policy feedback theory, it proposed that burden erodes trust in the agencies running the scheme, and that lower trust reduces both intentions to apply and word of mouth. Data from 364 Indian homeowners supported this view. For policymakers, the results suggest that the process of claiming a subsidy is part of the policy itself. A scheme that is easier to use may win both new applicants and the advocates who bring others along.

The study has several limitations. The design was cross-sectional and single-source. The data cannot establish that burden precedes trust, or that trust precedes intention and word of mouth. Citizens who already distrust government may perceive programs as more burdensome. The pathways should therefore be construed as associations consistent with the theory. Procedural remedies and Harman's single-factor test reduce, but do not eliminate, common method concerns. Longitudinal designs that follow households from first contact to installation could test the proposed sequence.

Intention was measured, not application. Future studies could link survey responses to portal records. Word of mouth was measured as a willingness to recommend, not as actual conversations. The sample was urban and online, which excludes rural households and those with limited internet access, for whom burden may be heavier (Herd et al., 2023). Finally, trust was modeled as a single factor. Future work could test whether learning, compliance, and psychological costs relate to different dimensions of trust.

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