


Article

Environmental Concern, Income, and Nature Experience in India

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Abstract: The relationship between income and environmental concern has only in some samples been found to mirror an Environmental Kuznets curve of pollution behavior by U-shaped preferences. Inconclusive aggregate findings may be due to the differential presence of mechanisms causing a linear relationship, or a psychological equivalent to tunneling maximum pollution. We enquire into determinants of such a mechanism previously unrelated to income-concern literature, which could arise from persistent influence of environmentalism of the poor through economic development, until affluence and postmaterialist values become effective. It is empirically captured as influence of past nature experience on concern at critical intermediate income, retained by individuals that have abandoned farming and advanced to such income. The resultant moderated mediation model is calibrated on representative survey data from highly heterogeneous, urbanizing India. Our results explain pollution behavior within this middle-income country by a corresponding, U-shaped income-concern relationship. However, in addition, this relationship is hidden by bridging, i.e., particularly pronounced influence of past nature experience at middle-income for individuals that switched out of farming. Policy leverage may thus derive from reducing the attitude-behavior gap in India and fostering persistent positive nature experience elsewhere.

Keywords: Environmental Kuznets Curve; Tunneling; Environmentalism of the Poor; Nature Experience; Environmental Concern

1. Introduction

The Environmental Kuznets Curve (EKC) hypothesis claims that environmental conditions deteriorate with economic development first, before they eventually improve again [1]. Evidence in favor of this hypothesis is particularly strong when considering below-average income countries and the case of carbon dioxide, as the perhaps most general and at the same time most relevant indicator [2]. In the years to come, billions of poor are yet to embark on this path of development. Examining chances of bypassing maximum pollution or at least restraining the coupling of income and greenhouse gas emissions seem overdue. Such “tunneling” potential has been documented already for a variety of processes [3].

This study proposes reaping underexplored tunneling potential within individual, psychological preferences for environmental protection [4]. Such potential derives from, and may simultaneously shed some new light on, a persistently inconclusive link between income growth and *environmental concern*—a decisive ingredient to pro-environmental behavior [5]. Both linear increases of concern in income within, and decreases between, countries are found in some samples to tend toward a U-shape, mirroring the inverse U of a pollution-EKC [6]. One of the perhaps more parsimonious joint theoretical explanations is offered by the ‘objective problems, subjective values’ approach [7]. Dependence on nature for livelihood sustenance is still widespread in the Global South and it causes an often spiritual, affective attitude of

environmental concern (*“environmentalism of the poor”*, [8]). With growing income, it is gradually replaced by affluence and postmaterialist values [9]. We hypothesize that *differential smoothness of these transitions may cause sample sensitivity of the U-pattern. Linear cases could then point to bridging mechanisms mirroring tunneling of a pollution EKC* and constitute examples of potential use to policy-makers elsewhere, too.

Within and between critical, economically less developed countries, preserving and asserting locally rooted environmentalism may be more interesting from a policy perspective than targeting the differential onset of globalization-induced values, or concern that only follows degradation behavior [10]. Our exploration of psychological tunneling potential therefore enquires into disparate determinants of persistence of environmentalism of the poor, hinted at by qualitative evidence already e.g., in India [11]. *That is, we test the hypothesis that environmental concern at critical intermediate income is increased by environmentalism of the poor.* It is expected to cause a linear pattern in case of some individuals, obstructing a U-pattern exhibited by others. We thereby conceptualize environmentalism of the poor as nature experience [12,13] and allow for continued influence at intermediate income due to strong upward income dynamics within individuals’ life courses [14]. Because only certain individuals are likely to experience such dynamics, this approach amounts to linking nature experience- and income-concern literature by three-way, moderated mediation analysis [15].

We survey 1200 household heads at the rural-urban interface of Bangalore/India, where a large section of intertemporal income development is spread out in a cross-section [16]. We show that a micro-level EKC of preferences, as measured by the New Environmental Paradigm (NEP, [17]), would indeed be obtained when bridging was absent. Our findings can hence explain pollution patterns at least within and between middle and low income countries as a consequence of preferences [18]. Moreover, nature experience is also found to exhibit particularly pronounced influence at intermediate income for those individuals switching out of agriculture. Our results therefore also emphasize the need for policies reducing attitude-behavior gaps in Bangalore [19], and in general suggest building on positive nature experiences for pro-environmental behavior instead of merely relying on degradation exposure.

We finally consider ‘objective problems, subjective values’ approaches to provide the most parsimonious explanation of our findings. If positive nature experience decreases between countries, this may point to this body of theory as the most parsimonious explanation, even for income-concern patterns more generally; decreasing exposure to environmental degradation eventually outnumbering affluence and values would no longer be additionally required [20].

Section 2 develops the theoretical approach, Section 3 introduces our models and survey, Section 4 presents results, which are discussed in the concluding Section 5.

2. Theoretical Background

2.1. An Indian EKC of Environmental Concern

The relationship between income and environmental concern remains a controversial subject across environmental psychology and related disciplines. Frequently, concern is found to increase in income within, and decrease between, countries [20]. However, whereas results are often considered to be largely robust to different measurement approaches, sample dependence remains an issue [ibid.]. Even though mostly insignificant, a U-shaped relationship has thus been equally documented for both between and within country samples [6,21,22]. This sensitivity is exemplified by the case of India, where evidence for an initial and eventual maximum of concern interrupted by a gap [23–25] is contradicted by other studies reporting monotonic increases of concern in income [26].

Explanations provided by extant theories even for linear, already contrasting findings are not easily integrated parsimoniously. Within-country economic development at any one point in time should mirror intertemporal income patterns, even between-countries [14,27]. *Affluence* [28] or *postmaterialist values* [29] can explain within-country increases, and potentially fall in line with growing *exposure to environmental degradation* for poorer countries [20]. However, between-country decreases in concern require assuming both degradation experiences, eventually outnumbering within country increases, and initially high,

'global' environmentalism 'of the poor' [8,30]. Whereas, the latter has been incorporated into so-called 'objective problems & subjective values' theories, together with affluence and values [7,9], degradation experience remains separate yet indispensable.

Nevertheless, even when considering all theories jointly, the emergence of a U pattern, instead of contrasting linear relationships, seems equally plausible. It remains unclear whether environmentalism of the poor is smoothly substituted by affluence and postmaterialist values (or exposure to environmental degradation), as individuals and countries become rich. What is more, affluence and values that persist within countries must then be assumed to become outnumbered by decreasing exposure to degradation equally smoothly between richer countries. Within and between poorer countries, the transition from one driver of environmental concern to another could be interrupted by a gap. Degradation exposure between richer countries could reach saturation eventually, while affluence and postmaterialist values still exhibit upward influence on concern.

Such a U-shaped relationship would mirror real-world pollution behavior much better than the currently dominant linear theorizing: At least both within and between poorer countries, carbon dioxide emissions likely do exhibit the inverse U-shape put forward by the Environmental Kuznets Curve hypothesis [2,31]. If preferences of environmental concern predict behavior despite a certain gap to some degree [4,19], decreasing concern should lead to increasing pollution and *vicus versa*. Nevertheless, furthermore, global carbon dioxide-income patterns are now often assumed to be best described by a cubic- / N-shape [2]. If behavior follows concern, U-shaped concern between countries toward the left of the income distribution could lend further support to the saddle of the cubic pattern. Within the example of India, U-shaped preferences would mirror an often reported EKC pattern of carbon dioxide emissions [32]. However, recent reports of a cubic pattern within this highly heterogeneous middle-income country also hint at representativeness of Indian economic development for more general, between country patterns [18]. Livelihood dependence on an increasingly degraded nature coexists with westernized postmaterial middle classes here.

We finally derive theoretical potential for tunneling an EKC of pollution [3], or bridging an EKC of concern, from (sample) sensitivity of the evidence for a U-pattern. Some mechanism apparently causes more or less linear, smooth transitions from environmentalism of the poor to affluence and values. As indicated by pollution behavior, this holds only within and between a minority of poorer countries. However, while the differential onset of affluence and values, or degradation exposure lagging behind EKC-shaped pollution behavior may explain examples of bridging, we investigate endurance of environmentalism of the poor. Local, positive roots of environmentalism seem a much more powerful motivation for pollution mitigation policies; enforcing extant attitudes is considered to be much less complicated and ethically questionable than changing them [10]. Coexistence of a 'gap' with smooth, direct transitions from environmentalism of the poor to 'middle class environmentalism' [24] are already supported by qualitative evidence for the case of India [11].

Such a local, positive mechanism could even recede differentially between countries, and replace degradation exposure in explaining globally decreasing concern. If a U-shape was explained by 'objective problems, subjective values' too, it may emerge as the most parsimonious framework behind all empirical patterns.

2.2. Conceptual Framework

This section formalizes one possible, idealized understanding of bridging that may explain sample sensitivity of a U-shaped Kuznets pattern of environmental concern. This allows for modeling differential concern at middle-income as heterogeneity of an already established effect that is rooted in environmentalism of the poor (see Section 2.3). We show how certain theoretical assumptions lead to a concept of bridging independent of differential degradation experience. However, we also allow for empirical departures from these, under which we still consider it meaningful, to then analyze influence of past environmentalism of the poor on such bridging.

As a first step, we assume that environmentalism of the poor is limited to farmers, because livelihood dependence on nature applies to them chiefly [33]. It follows that farmers will always exhibit higher concern than non-farmers. Concern monotonically increases in income for both groups because of education-induced values, but farmers always benefit from dependence on nature in addition. The ‘split’ generating a potential minimum of concern at middle-income then becomes possible only if farmers stop dominating aggregate concern for higher income. Non-farmers would eventually take over, with their initially lower concern due to absence of both types of environmentalism. This is ensured by the second assumption: According to a recent confirmation of dual development theory, farmers cluster toward the left and non-farmers at the right of the income distribution (Figure 1, [14]). For bridging, we are hence interested in those non-farmers clustering directly at the potential drop, at any one point in time.

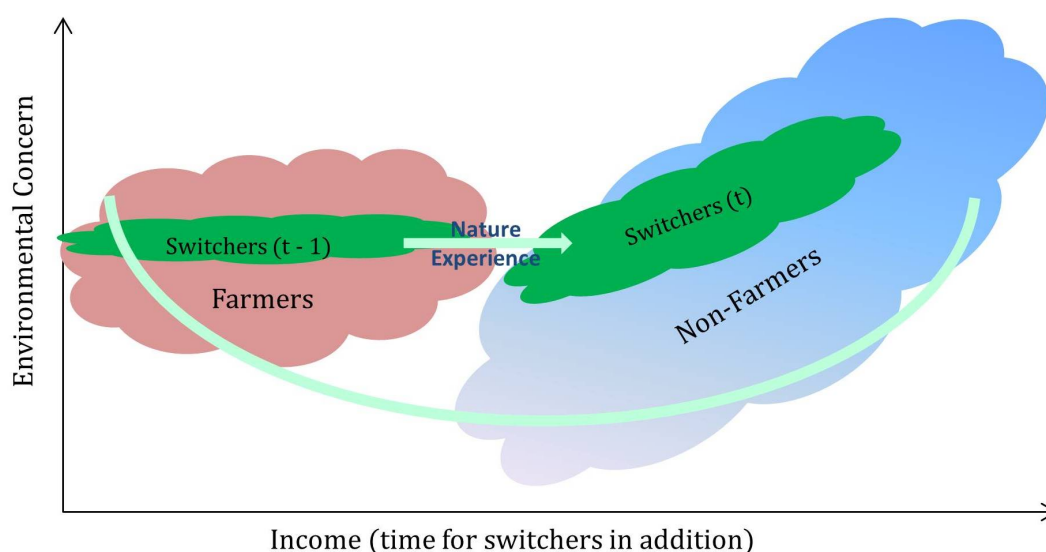


Figure 1. The Tunneling/Bridging Hypothesis in an Environmental Kuznets Curve (EKC) of Preferences.

Since the minimum is generated in our understanding by the absence of both kinds of environmentalism, there are two now straightforward options to generate bridging. One consists in middle-class concern becoming effective early enough, before environmentalism of the poor loses influence. Nevertheless, a second option will be considered henceforth, as it appears more interesting in terms of local roots of environmentalism. Bridging will also be determined by the degree to which environmentalism of the poor endures, until middle class concern gains momentum.

We propose to study such endurance within individuals’ life courses. Given current Indian growth dynamics, many of the non-farmers at the potential drop will likely have transitioned from the left to at least the middle of the income distribution within these life courses [34]. Because of dual development, such individuals are at the same time likely to have abandoned agriculture during that process. That is, they constitute a third group that we might call “switchers”. Depending on the effect of earlier environmentalism of the poor from agriculture, this group may contribute to a split pattern, just like other non-farmers, or to bridging.

One obvious way of explaining bridging would thus derive from the conditions under which past farming still affects otherwise minimum concern, at middle-income. However, the aggregate degree of bridging, i.e., environmental concern at critical income, could result from different types of bridging as well. Farmers might be present there, for example, and their environmental concern could equally be affected by (past) environmentalism of the poor. The environmental concern for which we analyze the influence of past farming, at middle-income, may hence, in addition, differ by group.

In sum, we will thus aim to *explain our understanding of bridging; i.e., we test for the hypothesis of persistent influence of past farming on environmental concern at middle-income, but for switchers only.*

Note however that elements of this idealized framework may be relaxed in reality, while still allowing for such an explanation to be meaningful. In principle, all that we require for this type of bridging are some switchers at middle-income, which positively influence aggregate environmental concern (*assumption I*: strong ordering w.r.t. concern). Furthermore, we can only speak about the persistence of past environmentalism of the poor, if increased income for non-farmers hints at dynamics (*assumption II*: mild ordering w.r.t. to income), and if (poor) farmers exhibit some environmental concern (*assumption III*). However, already a U-shape without the influence of past farming for switchers would only correspond to a literal understanding of bridging. We would consider the conditions of lifting intermediate, but monotonically increasing environmental concern an equally valuable subject of enquiry.

2.3. Environmentalism of the Poor as Nature Experience

Why should we theoretically expect livelihood environmentalism (“of the poor”) to exert persistent influence on switchers’ environmental concern when they enter the income section critical for bridging? In general, such a relationship is predicted by nature experience theory [13,35]. We argue that it is applicable here, because farming can be considered as a form of nature experience. Livelihood environmentalism is always rooted in direct, instrumental contact with nature [12,33]. Nevertheless, more than from exposure to environmental degradation, positive influence on concern is predicted by applying relationship theory to a context of environmental learning [36,37]: Frequent enjoyable experiences with nature, more than bad ones, lead people to become emotionally attached to it (path 1 in Figure 2). Such an *affective connection to nature* can then lead people to care about it later on in life (path 2), either via concern for one’s own well-being (egoistic investment, [38]) or via altruistic empathy [39]. These mechanisms have been replicated separately in both non-western and farmers’ samples [40]. Bridging would then occur, if the overall experience-concern relationship replicated (i) for the group of switchers better than for others and (ii) in particular, so at middle-income. In short, this would require switchers to be high on anxious attachment, altruism, time horizon, and knowledge—and this even at reduced, middle-income, which is expected to deflate all of these traits (with unclear effects of abstract thinking).

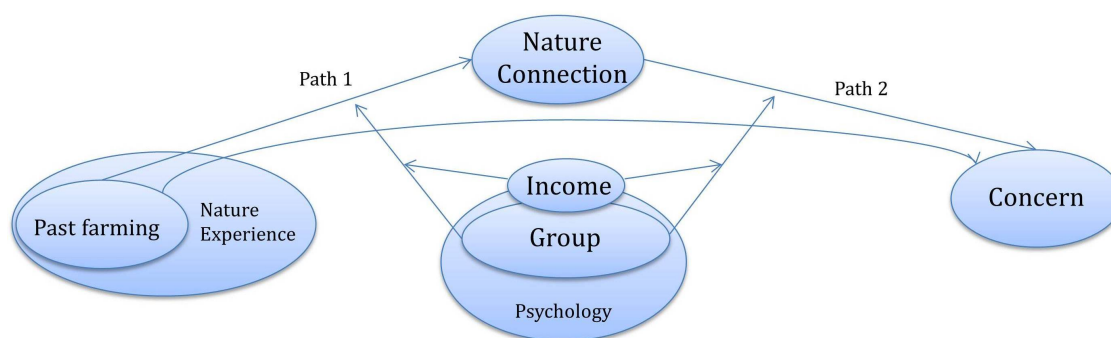


Figure 2. Theoretical Pathmodel. Some presumed relationships omitted from demonstration. No causal structure assumed between income, group, and psychology.

We expect moderation of the experience-concern link by (i) group within a nature experience framework because of psychological differences between groups. Farmers that are already closer to the traits of non-farmers are expected to select into switching [41]. *Attachment style* is often regarded as the most important predictor of individual difference [42], in relationships but also beyond [43]. An *anxiously* attached group would facilitate bridging, because we hypothesize it to form relationships particularly easily (path 1), and be highly invested in such a relationship (path 2). The opposite would be true for *avoidant* attachment style on both paths [44]. *Abstract thinking* is also a likely moderator of

both paths, albeit without clear requirements for bridging. Becoming attached is a form of conditioning (path1, [45]) and that is prevented by abstraction [46]. However, path 2 requires the conversion of affective attitudes into more general ones, which is facilitated by abstraction [5]. For bridging to emerge from reinforcement of path 2, switchers should, in addition, be high in altruism (see above), be patient (have a long time horizon), and knowledgeable about the environment [5].

Possibly in addition to, or even instead of, the group moderation, bridging conditions are determined by the degree to which the overall relationship replicates (ii) at middle-income. Our framework allows for modeling this type of heterogeneity too, because income may affect the psychological constructs depicted further (Note that at the same time, income is affected by group according to dual development). This becomes evident when observing the relationships of both nature experience and income to risk behavior. Risk aversion is related to avoidant attachment [47], but relationship investment is risky [44]. At the same time, risk aversion is known to decrease in income [48]. Middle-income could therefore be already low enough to prevent bridging by reinforcing avoidance. Path 2 would furthermore be negatively affected by low income through a still shortened time horizon [49], through diminished altruism [50], and through inhibited abstract thinking [51]. The latter could, on the other hand, explain the existence of bridging, if working mainly through path 1 (see above).

3. Empirical Approach

3.1. Statistical Approach

Our empirical strategy is a combination of graphical analysis and path modeling. Before explaining a particular type of bridging, we derive support for *existence* of both a psychological EKC and bridging thereof from graphical verification of the assumptions behind our theoretical framework. This approach is facilitated by plotting locally weighted regression functions fitted to scatterplots of environmental concern over income (for interpretation we focus on the interval of 1 standard deviation around the median of the standardized data, because of known issues with weighted regression functions at the tails of the distribution). When compared to a fully parametric approach, it allows for much more nuanced evaluation of hypotheses (see also [27]). With the aggregate curve, we evaluate the overall presence of bridging (monotonic increase of concern in income), as compared to an EKC pattern (U-shape). We then proceed by decomposing the graph by group to demonstrate how the type of bridging explained below contributes to any aggregate leveling of a potential U shape. Verification of the clustering assumption with regard to income (and concern) is provided by groupwise scatterplots. Groupwise weighted regression curves facilitate verification of the hypothesis that farmers and non-farmers jointly exhibit an inverse U. If switchers' concern were elevated when compared to these, as well as to aggregate concern at critical income, this would point to added value from explaining their curve there. Influence of past farming would be suggested by differences, especially to non-farmers (as grouping cannot be assumed exogenous, and non-farmers hence do not constitute the appropriate counterfactual, this should not be interpreted as an actual impact. For the same reason, the estimation of the contribution of switchers' bridging toward total bridging does not constitute the focus of this study).

As a second step, more in-depth inferential analysis is required to *understand why* switchers' concern-income relationship does exhibit the observed bridging potential—and if it indeed does so because of past environmentalism of the poor. To this end, we translate our theoretical approach, as outlined in the previous section, into a structural equations model. To each of the two implied paths of mediation, we introduce a three-way interaction [15,52]. They make explicit the influence of past environmentalism of the poor, on current environmental concern, at the critical income section, and for the group of switchers:

$$\begin{aligned}
 \text{I: Environmental concern} &= \beta_{11} \times \text{Nature connection} + \beta_{12} \times \text{Income} + \beta_{13} \times \text{Group} \\
 &+ \gamma_{11} \times \text{Nature connection} * \text{Income} + \gamma_{12} \times \text{Nature connection} * \text{Group} \\
 &+ \delta_{11} \times \text{Nature connect} * \text{Income} * \text{Group} \\
 \text{II: Nature connection} &= \beta_{21} \times \text{Past farming} + \beta_{22} \times \text{Income} + \beta_{23} \times \text{Group} \\
 &+ \gamma_{21} \times \text{Past farming} * \text{Income} + \gamma_{22} \times \text{Past farming} * \text{Group} \\
 &+ \delta_{21} \times \text{Past farming} * \text{Income} * \text{Group}
 \end{aligned} \tag{1}$$

To explain these effects of income and group further, in addition, the mediation of the two moderators by the hypothesized psychological constructs is then tested for. Similarly, the nature connection could be mediated by other types of nature experience. In each case, we decide about the inclusion of further equations based on path analysis techniques, as well as feasibility in view of endogeneity issues. We will consider including a model to explain group by psychological constructs, because temporal antecedence seems plausible there. However, we will model the influence of income on these constructs only as additional moderation of the group effect, because the relationships to psychology and group are explicitly two-way (see above) (the direction of causality between different types of nature experience can be concluded from empirical mediation only). Theoretical identification of the main model is ensured *ex ante* because of temporal antecedence of nature experience to both nature connection and environmental concern, and because the literature assumes one-way causality from nature connection to being concerned about it. Logically, moderators can become effective therein only if they pertain to the assumed directions of causality too (our main results could be harmed if the two moderators were in fact mediators and (i), in addition affected by reverse causality or (ii) correlated to the same unobservables as the dependent variable. However, (i) is unlikely given the sign of empirical coefficients (see results) and the potential for (ii) is minimized by controlling all known covariates of environmental concern).

As a final step, we aggregate impact of nature connection across all paths, for the case of switchers, and as a function of income. This serves as a check of the relevance of the mechanisms studied, if total impact coincides with descriptively observed bridging, both on the income and concern axes. With switchers coded as 1 (see below), in the simplest case without any further mediation we have:

$$\begin{aligned}
 &\text{Environmental concern (Income | Group = Switchers)} \\
 &= (\beta_{21} + (\beta_{23} + \gamma_{22}) \times 1 + (\beta_{22} + \gamma_{21} + \delta_{21} * 1) * \text{Income}) * (\beta_{11} + (\beta_{23} + \gamma_{22}) \times 1 \\
 &\quad + (\beta_{12} + \gamma_{11} + \delta_{11} * 1) * \text{Income})
 \end{aligned} \tag{2}$$

3.2. Measurement

We obtain our data from a standardized questionnaire that was implemented as part of a larger survey (see Supplementary Information 1 for full details). While this provided a host of manifest controls, it required us to systematically condense extant scales to very few items for the measurement of latent variables [53]. To still ensure measurement validity in such a culturally heterogeneous sample, we moreover followed standard protocols consisting of independent (re-)translation, reinforced by group discussions with local scientists and thinking aloud in a pretest sample [54] (see robustness (Section 4.3) for how we are able to address further sources of bias).

Our measurement of environmental concern is a shortened version of the popular NEP scale [17]. Cross-cultural validity, even in low-income samples from the Global South, suggests applicability to environmentalism of the poor [55]. This is even more true when compared to income-sensitivity of willingness-to-pay items employed elsewhere [20]. In the case of India, a modified four-factor structure has to be accounted for [56,57], and reports of high overall reliability lead us to select one item each. For our baseline results, we however refrain to a narrowed, face-valid measure of environmental concern, which only consists of the items for Eco-Crisis and Balance of Nature. Only here do we obtain at least satisfactory split-half reliability (0.55) and measurement invariance across samples (the latter by construction). The latter thereby ensures the applicability of our measure also to environmentalism

of (poorer) farmers. Comparable item statistics for the full, four-factor scale are only obtained after correcting for interviewer bias by the imputation of 22% of the observations based on paradata ([58], Appendix A). We test for the generalization of our results to that sample as a robustness check (Note in addition mixed convergent validity of both scales (see Appendix B), which could however be explained by altered motivations for concern in the Global South. They correlate as expected to altruism, income, education, age, status (caste), and being female, but not to agreeableness, openness, knowledge, abstract thinking, and time preference).

Next, we employ extant decompositions of nature experience in the Global North to operationalize past environmentalism of the poor [59]: An instrumental dimension seems most relevant, but the conversion of it into aesthetic, recreational, and educational/protective experiences too. Of particular theoretical importance to environmentalism of the poor is also a spiritual dimension [60]. Known psychometric properties again allow for collapsing to one frequency item each [61], especially since we assume experience to be quasi-manifest.

The mediator ‘affective connection to nature’ has been shown to be measurable by several constructs at equal validity across cultures [36]. We argue that a single item from the unidimensional scale of Perkins (2010, [62]) represents the emotional connotation in our theoretical framework well. In all of these cases, predictive validity as the only test of psychometric properties available is largely given (see results).

Our first moderator, the group variable, derives from the respective nature experience. For example, switching would be indicated by no instrumental contact with animals and plants currently, but at least some in the past. For analytical convenience, we propose treating this variable as ordered, with farmers being coded lowest and non-farmers highest. This may be justified based on the expectation that switchers will exhibit intermediate levels for most constructs of interest (see above). Further, deviation from farmers’ mechanisms seems more interesting than from non-farmers’, where there is no influence of past farming at all. Each time, however, we will additionally verify effects against dummy results from subgroup regressions of switchers against the other two groups separately.

We operationalize the second moderator, income by the asset index “NEW SEC” [63]. True income measures are difficult to obtain in the Global South because of subsistence activities. However, this index has been calibrated for the case of India to proxy, not only for total asset ownership, but various income measures in addition [64].

The main psychological driver of such moderation, attachment style, is proxied here by a shortened version of the Big Five Inventory [65]. The varieties of insecure attachment, avoidant, and anxious style, are known correlates of low agreeableness and high neuroticism, respectively [66]. While the constraints that were imposed by overall survey logistics were the main reason behind choosing this measurement instrument, it benefits from well-established cross-cultural validity [67]. As is common (see above), we further include numeracy questions to proxy abstract thinking, the other overarching psychological moderator (manifest measures are also available for moderators of path 2 only, for knowledge about environmental issues, time preference [68], and altruism [69]. Village fixed effects are employed to control for proximity to environmental problems).

Note, in addition, that these moderators are correlated to the most important potential sources of respondent bias [70], such that they are not controlled for separately. Social desirability should reinforce correlations between any two latent variables, and it is proxied here by agreeableness. Understanding of item content should decrease such correlations, and it is proxied by abstract thinking.

3.3. Data

We randomly sampled 1200 individuals from two rural-urban transects in Bangalore/India (Supplementary Information 2, [71]). The rural-urban interface of this mega city can be expected to represent the stages of development spread out in space in middle-income countries of the Global South. It is known to exhibit high heterogeneity both in terms of economic structure and social norms [72,73]. By stratifying for urbanization at the village cluster level, we thus ensure representativeness with

regard to the desired variation [74]. As a consequence, however, we introduce household-level weights as an additional robustness check to correct for the potential underrepresentation of densely-populated modern districts and the resulting overrepresentation of agrarian mechanisms [75] (on the other hand, if groups are spread over the rural-urban gradient as hypothesized, than group-wise mechanisms should not be biased in means but only lack internal heterogeneity for farmers). Within households, we sample at simple random from decision-makers as the most relevant unit for pro-environmental behavior in Indian society.

4. Results

4.1. Graphical and Descriptive Analysis

By verifying the theoretical assumptions behind our framework graphically and through mean comparisons, we now demonstrate support for both the existence of a modified psychological EKC and for the added value from further analyzing our type of bridging to understand aggregate environmental concern. See Sections 4.2 and 5 for further descriptive statistics and verification of more involved, statistical assumptions.

As measured by assets, we first observe increased mean income of non-farmers as compared to farmers (Table 1). This confirms our *assumption II* about dual development (mild ordering w.r.t. income), and thus facilitates the influence of past environmentalism of the poor on switchers under upward income dynamics.

Table 1. Normalized + weighted group means (raw data).

Group Size (Weighted)	Farmers N = 754 (491)		Switchers N = 359 (567)		Nonfarmers N = 97 (152)	
New Environmental Paradigm	0.738	(0.163)	0.775	(0.133)	0.796	(0.145)
Past farming	0.822	(0.340)	0.911	(0.207)	0.000	(0.000)
Nature connection	0.785	(0.222)	0.809	(0.252)	0.726	(0.275)
Religious nature experience	0.565	(0.383)	0.619	(0.363)	0.643	(0.399)
Recreational nature experience	0.636	(0.450)	0.706	(0.435)	0.419	(0.475)
Aesthetic nature experience	0.561	(0.433)	0.639	(0.416)	0.317	(0.436)
Educational nature experience	0.343	(0.338)	0.479	(0.352)	0.308	(0.279)
Knowledge	0.297	(0.458)	0.219	(0.416)	0.262	(0.450)
Abstraction	0.199	(0.400)	0.098	(0.299)	0.110	(0.320)
Agreeableness	0.367	(0.282)	0.350	(0.288)	0.308	(0.281)
Intraversion	0.624	(0.379)	0.634	(0.367)	0.664	(0.388)
Openness	0.407	(0.368)	0.433	(0.390)	0.490	(0.425)
Conscientiousness	0.625	(0.365)	0.575	(0.406)	0.497	(0.369)
Neuroticism	0.413	(0.367)	0.395	(0.390)	0.471	(0.412)
Social Value Orientation	0.261	(0.193)	0.157	(0.166)	0.220	(0.196)
Time preference (impatient = 0)	0.355	(0.375)	0.313	(0.311)	0.428	(0.392)
Age (0 = 03, 1 = 94)	0.497	(0.146)	0.436	(0.153)	0.425	(0.162)
Gender (female = 0)	0.767	(0.424)	0.566	(0.498)	0.598	(0.502)
Caste (highest = 0, lowest = 7)	0.203	(0.225)	0.190	(0.220)	0.203	(0.242)
Education (years, highest = 12)	0.127	(0.105)	0.189	(0.125)	0.166	(0.113)
Assets	0.518	(0.163)	0.611	(0.233)	0.573	(0.228)

Note: Group means of normalized variables (between 0 and 1), standard deviations in parentheses, observations weighted by sampling probability (stratification for urbanization, clustering at village level). Green shading indicates above-average value for switchers, yellow intermediate and red below-average values respectively.

Graphical results confirm the existence of such bridging: Aggregate environmental concern monotonically increases throughout the income distribution, despite intermediate mean environmental concern for switchers as the group with highest income (Figure 3). However, in addition, decomposition of the curve by group reveals elevated environmental concern of switchers as compared to both other groups, and aggregate concern at critical intermediate income (*assumption I*: strong

ordering of concern). Without switchers' still substantial representation there, as also indicated by the scatterplot, aggregate concern would likely be lower at critical income. Farmers' concern at low income is not high enough to cause a maximum, but past farming may affect concern differently in the case of switchers and still cause bridging (*assumption III*).

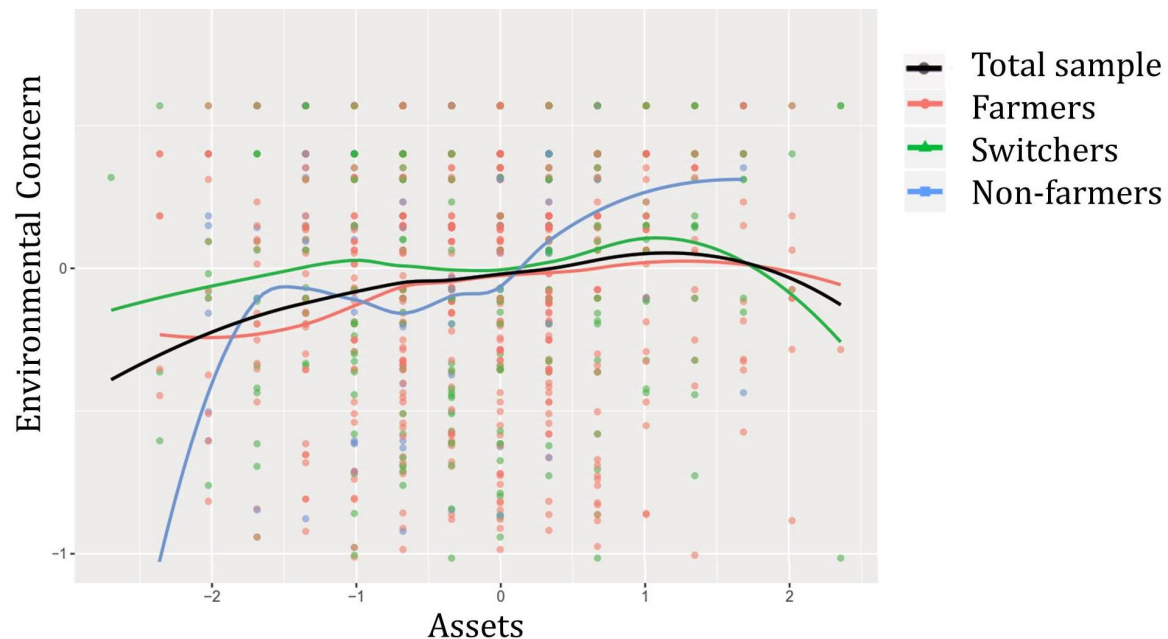


Figure 3. Environmental Concern by Group and Income. Local regression functions. Error-imputed variables standardized around median for emphasis in demonstration.

Beyond these minimum assumptions for meaningful analysis of our type of bridging, we also find evidence for a modified U-shape. It arises due to considerable within-group income heterogeneity, rather than due to income clustering of groups. Non-farmers are found to exhibit a maximum not only at high, but also at low income—generating a gap in between. This again hints at the confirmation of our bridging hypothesis, given the absence of past farming experience for non-farmers.

While finally farmers' pattern does not help establishing an EKC in Bangalore, it contributes to an additional, straightforward bridge across non-farmers U-shape. Like the other two groups but in addition to current nature experience when compared to non-farmers, farmers exhibit monotonic increases of concern in income, as hypothesized. Nevertheless, like the other two, farmers also turn out to be highly heterogeneous internally with regard to income, which justifies the examination of group-specific influence when analyzing our type of bridging below.

4.2. Path Model

The large influence of past nature experience in explaining the lifting of switchers' environmental concern then emerges from the inferential path model. Aggregating over all paths from nature connection to concern for switchers as a function of income, we find positive influence of earlier environmentalism of the poor, particularly at low income, but still at the middle of the distribution (see also black line, Figure 4):

$$\text{Environmental concern (assets | group = switch)} = 0.009 \times \text{assets}^2 - 0.019 \times \text{assets} + 0.085 \quad (3)$$

Graphically, it can be shown how the absence of such past nature experience generates a similar pattern as the one obtained for non-farmers in Figure 3 above; that is, how that group comes close to mimicking a counterfactual with regard to the impact of switchers' past nature experience, despite no truly exogenous grouping.

We emphasize here the substantial explanatory power of our framework for the degree of bridging present in our data. Just one unit of aggregate nature connection lifts switchers' concern around 0.1 units at critical income (Figure 4). This roughly corresponds to switchers' elevation above aggregate concern at non-farmers minimum in Figure 3.

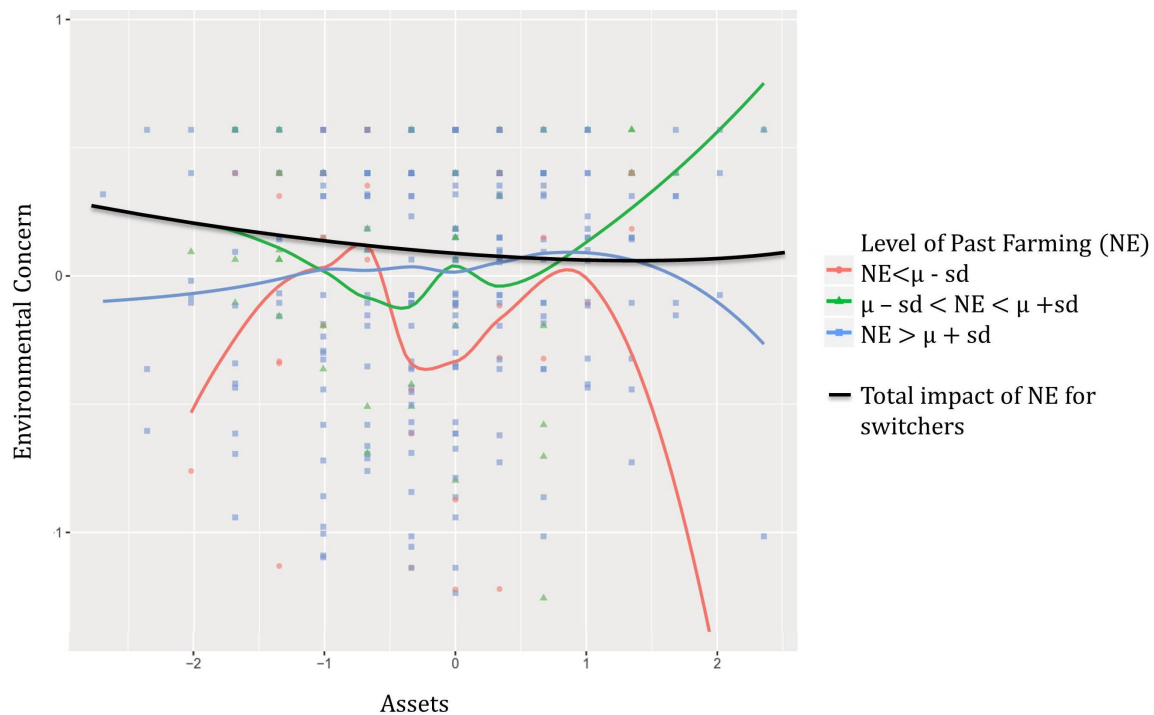


Figure 4. Environmental Concern for Switchers by Level of Past Farming. Note: Level functions from local regression. Error-imputed variables standardized around median for sharpened demonstration. Total impact from parametric path model (original data, [16]).

The model generates this effect, for one thing, because switchers benefit from above-average levels of nature connection: Our data confirm the overall applicability of our theoretical approach by allowing for the replication of a positive relationship between past nature experience and environmental concern (Figure 5). Previous findings are also confirmed with regard to mediation of this relationship by nature connection. However, on top of this, switchers also benefit from the underproportional conversion of nature connection into concern (path 2), but dominant overproportional conversion of past nature experience into nature connection (path 1).

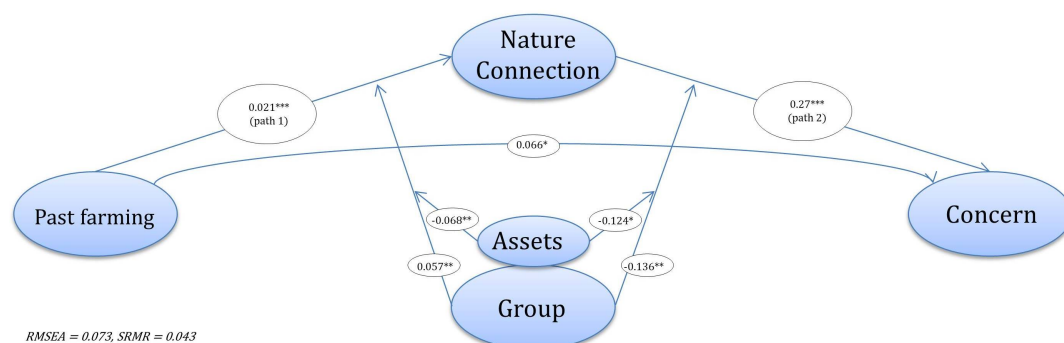


Figure 5. Environmental concern caused by past nature experience. Coefficient estimates and significance level selected from latent variable model with raw data and reduced dependent (moderated mediation; Table 2). Paths aggregated for path 1 [16]. Causal structure is theoretical.

Table 2. Baseline Structural Equation Regression (selective).

	Path 2: Environmental Concern (NEP) ~			Path 1: Nature Connection ~		Path 1.3: Recreational Nature Experience ~			Path 1.2: Aesthetic Nature Experience ~			Path 1.1: Religious Nature Experience ~		
past farming group	0.066	(0.027)	*	0.002	(0.021)	0.296	(0.029)	***	0.247	(0.032)	***	0.151	(0.019)	***
nature connection * group	0.125	(0.038)	**	−0.033	(0.030)									
(past farming for path 1)	−0.136	(0.040)	**	0.045	(0.016)									
nature connection	0.270	(0.037)	***											
nature connection * assets														
(past farming for path 1)	−0.001	(0.051)		0.028	(0.028)									
nature connection * assets														
* group (past farming for path 1)	−0.124	(0.051)	*	−0.068	(0.023)									
assets * group	0.027	(0.041)												
religious nature experience	−0.009	(0.037)				−0.057	(0.044)		0.494	(0.047)	**			
religious nature experience * group				0.064	(0.035)									
religious nature experience * assets									−0.153	(0.051)	**			
recreational nature experience	0.029	(0.025)		0.086	(0.019)									
aesthetic nature experience	0.023	(0.022)				0.030	(0.026)							
aesthetic nature experience * group						0.062	(0.025)	*						
abstract thinking	−0.014	(0.025)												
time preference	−0.013	(0.024)												
knowledge	−0.091	(0.026)	***											
altruism	0.058	(0.022)	*											

Note: Standardized coefficients, as well as equations selected from baseline structural equations model for demonstration purpose (see Appendix B for full model estimated, group and mediation-of-moderation equations omitted here). Nature connection interactions replaced by past farming interactions in path 1 and submodels. RMSEA = 0.073, SRMR = 0.043. Standard errors in parentheses, sign. codes: '***' < 0.001 '**' < 0.01 '*' < 0.05 '.' < 0.1.

At the equation level (Table 2), our results back these findings by a first attempt at moderation analysis of nature experiences' influence on environmental concern: In case of path 2, a negative and quite sizeable three-way interaction between nature connection, group, and income (-0.124) indicates that switchers' impact of nature connection onto concern is in fact below average, but less so at lower income (Figure 5) (Interpretation of three-way interactions is only feasible from two-way ones [52]. Again, 'sizeable' refers to maximum group difference at median income of about 0.2 (Figure 3)). Assuming that our proxies capture psychological constructs behind these two moderators to some degree, we find indication for the confirmation of hypotheses regarding what drives the negative group moderation (see robustness for how these results emerge as valid simplifications from dummy regression). It is explained by the group model through comparatively low levels of agreeableness (increased avoidance) and abstract thinking for switchers (with non-farmers even lower), and lowest scores for switchers on knowledge and time preference (Table 2). Nevertheless, contrary to our hypothesis, the resultant underproportional conversion of switchers is partially mitigated at low income: Mentioned three-way interaction mediates the negative two-way one between nature connection and income. Note also the implication that group moderation is indeed required, in addition to individuals' location on the income distribution to explain the empirical degree of bridging (full mediation additionally means that income moderation indeed operates through the same (psychological) mechanisms as group).

In contrast, path 1 explains bridging also by above-average benefits from past environmentalism of the poor in the case of switchers: Nature connection only translates into nature connection positively for switchers (positive group moderation), and even more so at lower income (negative three-way interaction in Table 2). This effect is reinforced by several mediations through other types of nature experience, which results in an aggregate group coefficient of $+0.057$ on path 1 (Figure 5). Only switchers convert their nature connection into aesthetic and spiritual nature experiences. While decreased income does reinforce group moderation, and is hence in line with theory our proxies for the psychological mechanisms behind the positive group moderation only partially point toward confirmation of hypotheses: Switchers benefit from low abstract thinking, which seems to indeed favor becoming conditioned to nature. But, counterintuitively, positive moderation is also driven by (switchers') increased avoidant attachment.

4.3. Robustness

By and large, we regard our results as quite robust, despite the many obstacles that psychometric survey research is faced with in the Global South (note that this also justifies interpretation of various data sources interchangeably in figures and descriptive statistics).

First of all, this is true for measurement of the dependent variable: Our main results generalize to error-imputation data, and then to regressing on the full NEP in addition (Appendix B). Both path 1 and path 2 even exhibit more main effects, and added value from heterogeneity is equally retained. The three-way interaction in path 2 changes sign, but total group effects are not put into question by this. For switchers, they still decrease in income, while remaining larger than farmers' throughout the bridging section of income (Switchers concern function becomes $-0.002y^2 - 0.019y + 0.076$, which intersects with farmers linear impact at $y = 1.78$ ($y = \text{income}$)). Similar analysis is possible for population weights and subsample/dummy regressions.)

Whereas, this also indicates robustness to controlling interviewer bias, in the case of respondent bias we ultimately have to rely on standard precautions that were taken when constructing the questionnaire. In addition, the replication of the most important effects does obtain under weighting by population size. If urbanization in India does represent stages of modernization in a cross-section, then our results generalize to economic development. Note however that convergence is conditional upon parceling the NEP scale, and that the group model does not replicate at all.

Finally, we are also able to demonstrate that our ordered group variable can be interpreted as a simplification of dummy effects. With the exception of additional mediation of path 1 by switchers, both signs and significances of the most important effects replicate in both sub-samples alike; that is,

when comparing switchers to both farmers and non-farmers. This seems intuitive in case of path 1. Here, the baseline already compares to farmers only effectively, as non-farmers do not exhibit any influence of nature connection. In the case of path 2, it becomes straightforward given minimum altruism, time horizon, and abstract thinking means of switchers when compared to the other two groups (Table 1). Technically, the baseline coefficient thus represents a conservative estimate on switchers' moderation as compared to farmers', since it is additionally mitigated by non-farmers' one. As opposed to all of these, avoidant attachment does exhibit the hypothesized ordering. However, since the comparison between non-farmers and switchers would contradict the ordering, we again interpret the group coefficient as the effect of switchers as compared to farmers only.

5. Discussion and Conclusion

We discuss our findings in light of recent advances in income-concern, nature experience, and pollution-EKC literature, while suggesting possible extensions in future research alongside.

5.1. General implications for income-concern theory

In sum, our results confirm a positive income-concern relationship within a middle-income country [20]. However, in our Indian case, aggregate patterns hide an underlying U-shape for some individuals (confirming [25,26]), bridged by others. This would explain previous failure to find significant quadratic terms in the relationship more generally [6], if some type of bridging was present in many of the cases modeled.

With regard to income-concern theories, our findings can be explained by a 'objective problems, subjective values' approach, which incorporates global environmentalism and affluence and values, but holds without recourse to degradation exposure [7]. This becomes evident, first, by the drivers of a U-shaped Kuznets pattern in Bangalore, as demonstrated by our graphical analysis (Figure 3). Concern increases toward higher income for all groups, which could point to affluence and values. Degradation seems a less plausible explanation, given that rich Indians are usually able to shield themselves from exposure to pollution [16]. Secondly, non-farmers' concern exhibits a maximum at low income and then decreases with income to cause the Kuznets pattern, as hypothesized in our sample. This can only be accounted for by environmentalism of the poor, as contained in 'objective problems, subjective values' theory. Urban poor may exhibit persistent dependence on the environment for livelihoods [76]. Evidence of differential bridging in Bangalore equally reinforces global environmentalism at least in addition to degradation. Increases of concern with income are to a large part explained by positive nature experience in the case of switchers, particularly up to intermediate income, and to a constant degree in the case of farmers.

Absence of maximum concern for farmers at low income must not invalidate these claims, but could point to limitations of our study regarding measurement: We conveyed the psychological constructs modeled as far as the survey context allowed. Nevertheless, even if future studies replicated Northern item statistics in a Southern sample like ours, we would consider explorative studies of what really describes how farming translates into environmentalism to be highly valuable [54].

In future studies, the external validity of this argument could be strengthened. One could imagine situations where pull urbanization, as in Bangalore, is replaced by push urbanization [77]. Switching then happens out of necessity rather than as a conscious decision, once resources permit. Strong income ordering of groups could then allow for more clear-cut verification of our hypotheses. However, on the other hand, especially memories of past nature experience might not be as positive there. Relative contributions of the type of bridging focused here should thereby also become clearer and complement internal validity of our study, even if more systematic remedies for potential endogeneity were again lacking.

5.2. Details of Nature Experience's Influence

A closer look at our regression results relates these findings to recent applications of nature experience theory to Southern samples [12]. As hypothesized, bridging is explained to a large degree by overproportional influence of switchers' nature experience at critical income level. Nevertheless, whereas one driver of this influence, robust negative income moderation, equally confirms our theoretical approach, personality-related moderators cancel out. If found to be robust (see above), these findings would amount to almost zero moderation effect, if generalized to rich, Western samples. We however favor an interpretation of limited generalizability of nature experience mechanisms between Southern and Northern studies, and hence emphasize the need for future moderation studies in different cultural contexts. This claim is supported by the sensitivity of the group-model to population weights. Psychological heterogeneity is known to increase with economic development and could result in more complex yet not inexistent moderation [78]. Moreover, brevity of our rather exploratory personality scale could again mask true relationships.

In more detail, the path model carries further implications. Lower income mitigates negative group effects in case of path 2 and reinforces positive group effects of path 1. Regarding income moderation, the latter confirms expectations, whereas the former may again point to urban poor's remaining, dependence on nature. Switchers' psychological traits, on the other hand, are conducive to becoming attached to nature, but they prevent conversion into abstract concern. High discount rates and low knowledge unambiguously cause the latter, and reduced abstract thinking moderation of both paths. Low investments and involvement in 'relationships', as predicted by avoidant attachment, were hypothesized to negatively moderate path 2. However, note the possibility of alternative explanations of these findings related to respondent bias. (In case of path 2, social desirability could bias results by artificially increasing correlations: It is known to increase in agreeableness, and that had been found to positively moderate correlations here. Affirmative bias resulting in artificially high correlations could additionally result from the lack of understanding. Again, understanding should increase in abstract thinking, and that had been found to positively moderate path 2. Path 1 would not be subject to these biases, once one is willing to assume that past nature experience is manifest and as such not affected). The unexpected finding for path 1 may be due to nature being different from social relationships, such that suppressed needs of avoidant individuals surface. At least they would be particularly susceptible to counter-depressive effects of nature experience [79]. Yet, another alternative explanation for path 1 could more generally be nostalgic bias [80]. The more time has passed since the experience, the more switchers would remember only positive nature experience. Affect for nature then comes easy, while the actual consequences like worrying are not required in their everyday lives anymore.

Psychological trait effects finally point to explanations for selection into groups: Successful farming under adverse climatic conditions, like in Bangalore, seems hard to manage for impatient nature lovers lacking knowledge and abstract thinking [41].

5.3. Pollution behavior and bridging policies

For policymakers in Bangalore, our results may be considered to open up considerable leverage. Monotonic increases of environmental concern with growing income are to a large degree not just driven by linear degradation experience [18], and they also do not simply lag behind an EKC-shaped pollution scenario [2]. However, U-shaped preferences neither cause inverse U-shaped polluting behavior unequivocally, at least not without pointing to dominant preferences for environmental protection, even at critical intermediate income. Future research would need to explore ways of reducing the attitude-behavior gap further, but then preferences of a sufficient number of individuals seem to provide a leverage on contemporaneous environmental problems [10,19].

Besides such a gap, we however consider a number of alternative explanations to be likely causes of the income-concern relationship documented. Our sample could be contradicted by less positive memories and the absence of bridging elsewhere (e.g., under push urbanization). It could further fail to

cover the higher part of the income distribution of the between-country but possibly also within-India case, such that both U-shape of concern and bridging end where growth relinks to pollution [18]. Toward higher income, the increasing saturation of affluence and postmaterialist values could then be coupled with receding memories of nature experience. At least for within-country patterns previously explained by decreasing degradation exposure, we found nature experience to be an at least equally valid theoretical underpinning. For all of these cases, however, politically induced preference change could build on prolonging influence of the bridging mechanisms outlined here [81].

Supplementary Materials: The following are available online at <http://www.mdpi.com/2071-1050/11/2/346/s1>, Table S1: Questionnaire, Figure S2: Sample.

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Appendix A

Table A1. Item statistics for full NEP (error-imputed data).

	<i>Reliability (omega-t): 0.55</i>			
	Full Sample	Farmers	Switchers	Non-Farmers
eco-crisis	0.79	0.80	0.71	0.71
balance of nature	0.82	0.84	0.79	0.76
limits to growth	0.30	0.24	0.33	0.68
anti-anthropocentrism	0.34	0.37	0.40	

Note: Loadings from confirmatory, principal axis factoring, using varimax rotation. Loadings < 0.2 omitted from representation. Groupwise analysis proves configural measurement invariance.

Appendix B

Table A2. Structural Equation Regressions Including Robustness (selected controls).

Appendix B. Structural Equation Regressions including Robustness	Raw Data, Latent Variable Model, Reduced Dependent, N = 1203			Error Imputation, Latent Variable Model, N = 1210			Raw Data, Parceled Dependent, N = 1203, Population Weights			Raw Data, Latent Variable Model, N = 1106, Group = Switchers (vs. Farmers)			Raw Data, Latent Variable Model, N = 450, Group = Switchers (vs. Non-Farmers)		
<i>Path 2: environmental concern (NEP) ~</i>															
past farming	0.066	(0.027)	*	0.029	(0.008)	***	0.084	(0.044)	·	0.082	(0.035)	*			
group	0.125	(0.038)	**	0.013	(0.009)		0.196	(0.058)	**	0.084	(0.025)	**	−0.029	(0.041)	
nature connection * group	−0.136	(0.040)	**	−0.026	(0.009)	**	−0.094	(0.053)	·	−0.317	(0.072)	***	−0.266	(0.064)	***
nature connection	0.270	(0.037)	***	0.031	(0.009)	**	0.246	(0.055)	***	0.330	(0.041)	***	0.299	(0.053)	***
nature connection * assets	−0.001	(0.051)		−0.021	(0.010)	*	0.137	(0.104)							
nature connection * assets * group	−0.124	(0.051)	*	0.035	(0.012)	**	−0.168	(0.072)	*	−0.173	(0.079)	*	−0.142		*
assets * group	0.027	(0.041)		−0.008	(0.010)		0.005	(0.051)							
religious nature experience	−0.009	(0.037)		−0.003	(0.009)		0.062	(0.043)		−0.037	(0.041)		0.076	(0.059)	
recreational nature experience	0.029	(0.025)		0.016	(0.006)	*	0.030	(0.030)		0.028	(0.027)		−0.009	(0.035)	
aesthetic nature experience	0.023	(0.022)		0.014	(0.006)	*	−0.014	(0.027)		0.030	(0.024)		0.014	(0.033)	
educational nature experience	0.019	(0.031)		−0.010	(0.011)		0.016	(0.042)		0.016	(0.033)		0.075	(0.046)	
abstract thinking	−0.014	(0.025)		−0.008	(0.006)		0.008	(0.043)		−0.010	(0.027)		0.044	(0.039)	
time preference	−0.013	(0.024)		−0.005	(0.006)		0.024	(0.032)		−0.023	(0.026)		0.014	(0.038)	
knowledge	−0.091	(0.026)	***	−0.042	(0.010)	***	−0.151	(0.050)	**	−0.105	(0.029)	***	−0.032	(0.038)	
altruism	0.058	(0.022)	*	0.006	(0.005)		0.063	(0.029)	*	0.060	(0.025)	*	0.054	(0.033)	
extraversion (inverted)	−0.010	(0.026)		0.028	(0.008)	***	−0.027	(0.038)		−0.004	(0.029)		−0.008	(0.037)	
agreeableness	−0.055	(0.030)	·	−0.014	(0.007)	·	−0.110	(0.060)	·	−0.053	(0.033)		−0.050	(0.044)	
conscientiousness	0.005	(0.025)		0.015	(0.006)	*	−0.015	(0.028)		0.008	(0.027)		0.012	(0.036)	
openness	−0.091	(0.024)	***	0.008	(0.006)		−0.103	(0.026)	***	−0.104	(0.026)	***	−0.117	(0.034)	**
neuroticism	0.013	(0.023)		0.017	(0.006)	**	0.041	(0.033)		0.009	(0.025)		0.048	(0.033)	
age	0.039	(0.029)		0.006	(0.007)		0.046	(0.036)		0.044	(0.031)		0.026	(0.043)	
sex	−0.090	(0.027)	**	−0.017	(0.007)	*	−0.013	(0.027)		−0.101	(0.029)	**	−0.016	(0.037)	
caste (inverted)	0.018	(0.027)		−0.008	(0.007)		0.050	(0.036)		0.002	(0.030)		−0.060	(0.040)	
education	0.131	(0.049)	**	0.038	(0.014)	**	0.071	(0.067)		0.136	(0.053)	*	0.079	(0.078)	
assets	−0.030	(0.044)		−0.007	(0.010)		−0.023	(0.069)		−0.012	(0.047)		−0.091	(0.123)	
village + religious FE	ON			ON			OFF			(only rel)			(only rel)		

Table A2. Cont.

Appendix B. Structural Equation Regressions including Robustness	Raw Data, Latent Variable Model, Reduced Dependent, N = 1203			Error Imputation, Latent Variable Model, N = 1210			Raw Data, Parceled Dependent, N = 1203, Population Weights			Raw Data, Latent Variable Model, N = 1106, Group = Switchers (vs. Farmers)			Raw Data, Latent Variable Model, N = 450, Group = Switchers (vs. Non-Farmers)		
<i>Path 1: nature connection ~</i>															
past farming	0.002	(0.021)		−0.047	(0.025)	·	−0.001	(0.035)		−0.009	(0.026)				
group	−0.033	(0.030)		−0.027	(0.035)		−0.030	(0.066)		−0.007	(0.019)				
past farming * group	0.045	(0.016)	**	0.092	(0.019)	***	0.041	(0.033)		0.251	(0.101)	*			
religious nature experience * group	0.064	(0.035)	·	0.155	(0.042)	***	0.125	(0.052)	*	−0.071	(0.055)				
past farming * assets	0.028	(0.028)		−0.011	(0.034)		0.027	(0.042)		−0.002	(0.026)				
past farming * assets * group	−0.068	(0.023)	**	−0.045	(0.028)	·	−0.053	(0.029)	·	−0.055	(0.028)	*			
recreational nature experience	0.086	(0.019)	***	0.094	(0.023)	***	0.079	(0.035)	*	0.095	(0.020)	***			
<i>Path 1.3: recreational nature experience ~</i>															
religious nature experience	−0.057	(0.044)		−0.016	(0.043)		−0.037	(0.082)		−0.044	(0.046)				
past farming	0.296	(0.029)	***	0.287	(0.029)	***	0.287	(0.051)	***	0.308	(0.036)	***			
aesthetic nature experience	0.030	(0.026)		0.073	(0.025)	**	−0.028	(0.044)		0.034	(0.027)				
aesthetic nature experience * group	0.062	(0.025)	*	0.026	(0.025)		0.083	(0.045)	·	0.018	(0.044)				
<i>Path 1.2: aesthetic nature experience ~</i>															
past farming	0.247	(0.032)	***	0.253	(0.033)	***	0.312	(0.077)	***	0.193	(0.040)	***			
religious nature experience	0.494	(0.047)	**	0.390	(0.049)	***	0.565	(0.068)	***	0.519	(0.050)	***			
religious nature experience * assets	−0.153	(0.051)	**	−0.095	(0.051)	·	−0.115	(0.095)		−0.157	(0.054)	**			
<i>Path 1.1: religious nature experience ~</i>															
past farming	0.151	(0.019)	***	0.150	(0.019)	***	0.066	(0.057)		0.196	(0.023)	***			
<i>group ~</i>															
abstract thinking	−0.037	(0.019)	*	−0.033	(0.019)	·				−0.016	(0.031)		0.074	(0.046)	
time preference	−0.062	(0.018)	**	−0.056	(0.018)	**				−0.118	(0.030)	***	−0.027	(0.046)	
agreeableness	−0.073	(0.023)	**	−0.083	(0.022)	***				−0.089	(0.038)	*	0.065	(0.053)	
knowledge	0.050	(0.019)	*	0.050	(0.019)	*				0.027	(0.032)		−0.093	(0.046)	*
education	0.068	(0.027)	*	0.069	(0.027)	*				0.183	(0.044)	***	0.111	(0.063)	·
<i>nature connection * assets * group ~</i>															
nature connection * assets	0.640	(0.024)	***	0.571	(0.024)	***	0.922	(0.050)	***						
RMSEA	0.073			0.069			0.092			0.204			0.141		
SRMR	0.043			0.045			0.037			0.042			0.054		

Note: For demonstration purpose only theoretically meaningful controls included. Non-meaningful model parts omitted from subgroup estimation (last 2 columns). Coefficients from standardized variables. Standard errors in parentheses, sign. codes: '***' < 0.001 '**' < 0.01 '*' < 0.05 '·' < 0.1. RMSEA and SRMR < 0.08 required for acceptable fit, where SRMR does not penalize additional variables. Sample size varies with outlier correction (after imputation).

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