

# Peer Review Comments

**Article:** Basic-Sontic, A., & Brick, C. (2018). Personality Trait Effects on Green Household Installations. *Collabra: Psychology*, 4(1): 8. DOI: <https://doi.org/10.1525/collabra.120>

**Article type:** Original Research Report

**Editor:** M. Brent Donnellan

**Article submitted:** 09 November 2017

**Editor decision:** Accept Submission

**Revision submitted:**

**Article accepted:** 20 February 2018

**Article published:** 09 April 2018

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## Responses for Version 1

**Reviewer:** This reviewer has chosen to remain anonymous.

**Affiliation:** --

**Competing Interests Statement:** None

**Review Completed:** 15 December 2017

**Recommendation:** Revisions Required

### 1) General comments and summary of recommendation

Describe your overall impressions and your recommendation, including changes or revisions. Please note that you should pay attention to scientific, methodological, and ethical soundness only, not novelty, topicality, or scope. A checklist of things to you may want to consider is below:

- Are the methodologies used appropriate?
- Are any methodological weaknesses addressed?
- Is all statistical analysis sound?
- Does the conclusion (if present) reflect the argument, is it supported by data/facts?
- Is the article logically structured, succinct, and does the argument flow coherently?
- Are the references adequate and appropriate?:

Review of Collabra 120-1404, "Personality trait effects on green household installations"

This manuscript reports on the associations, in a nationally representative sample of German adults, of personality variables with adoption of "green" household installations, using risk preferences and environmental concerns as mediators. The results show near-zero associations of the personality variables with green installations, with these extremely weak effects being partly mediated by environmental concerns.

I think that this study has basically been conducted competently, but I have some suggestions for revision.

The main recommendation is to state more forthrightly that the observed associations are extremely weak. Even though these effects reach statistical significance in this very large sample, they are so small as to be quite unimportant. It should be mentioned prominently that personality (at least as summarized by the Big Five) probably doesn't matter much in determining who (in this population)

will do green installations.

Having said this, I think that the authors should mention that the personality measures, being very brief, will be rather limited in their reliability and validity, which will in turn limit any associations with variables such as green household installations. But even taking this into account, the true associations are still likely to be quite weak; even if one doubled or tripled the observed associations, they would still be small.

(By the way, I would be wary of any possible suggestions to use SEM analyses to compute true score correlations for the personality variables, because with very few items and with complications such as acquiescence and secondary loadings, it would be difficult to have confidence in the accuracy of the true score correlations obtained in this way.)

Despite the nearly null findings of this report, it's still possible that personality variables would predict green installation behaviours: The study (from Germany) by Hilbig et al. (2013) showed that HEXACO Honesty-Humility was fairly strongly related to ecological behaviours. Moreover, the lack of greed exhibited by high-H persons might contribute to the decision to adopt a green installation at some personal expense. I doubt that the link would be strong, but it could be mentioned that (in spite of the otherwise near-zero links found here), it remains possible that this personality dimension would predict green household installations in this population.

Other results that should be reported:

The full correlation matrix should be shown.

The alpha reliabilities of the Big Five measures should be given.

Smaller Points

p. 3: "long-term profitable" would usually be phrased as "profitable in the long term"

p. 4: the Big Five model might be considered "dominant" in the sense that it is still being widely used, but it has been superseded as the best summary of personality structure; so, it would be better to say "historically dominant" or something like that, to avoid giving the impression that the Big Five is actually the best model

p. 5: insert "Big Five" before "personality factors", because as noted above another factor of a different model is sometimes found to be relevant also

p. 8: the idea that any link between high Conscientiousness and environmental concern is due to "the ambition of conscientious people to strive for pro-environmental values" seems unparsimonious and implausible; it's more likely that those people simply don't like being negligent in any context

p. 13: high-E and low-E would be better as extraverted and introverted, respectively

2) Figures/tables/data availability:

Please comment on the author's use of tables, charts, figures, if relevant. Please acknowledge that adequate underlying data is available to ensure reproducibility (see open data policies per discipline of Collabra here):

Please see my suggestion in the main review regarding another table that would be useful. Also, I wasn't able to open the supplementary data files, but I assume that the underlying data are available in useful form for other researchers.

3) Ethical approval:

If humans or animals have been used as research subjects, and/or tissue or field sampling, are the necessary statements of ethical approval by a relevant authority present? Where humans have participated in research, informed consent should also be declared.

If not, please detail where you think a further ethics approval/statement/follow-up is required:

Such a statement is not included. But I assume that the GSOEP data were collected in ways that were consistent with ethical treatment of research participants.

4) Language:

Is the text well written and jargon free? Please comment on the quality of English and any need for improvement beyond the scope of this process:

The text is generally well written.

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**Reviewer:** This reviewer has chosen to remain anonymous.

**Affiliation:** --

**Competing Interests Statement:** I have no competing interests with regard to this research.

**Review Completed:** 20 December 2017

**Recommendation:** Revisions Required

1) General comments and summary of recommendation

Describe your overall impressions and your recommendation, including changes or revisions. Please note that you should pay attention to scientific, methodological, and ethical soundness only, not novelty, topicality, or scope. A checklist of things to you may want to consider is below:

- Are the methodologies used appropriate?
- Are any methodological weaknesses addressed?

- Is all statistical analysis sound?
- Does the conclusion (if present) reflect the argument, is it supported by data/facts?
- Is the article logically structured, succinct, and does the argument flow coherently?
- Are the references adequate and appropriate?:

This manuscript examines how the Big Five personality traits relate to investments in solar and alternative energy systems with the help of a large data set from the German Socio-Economic Panel. The authors find that openness to experience and neuroticism are positively linked to green investments, while extraversion is negatively linked to investments. Furthermore, the authors find evidence that these three personality traits are linked to investments via their relationships with environmental concern.

The findings contribute to a topic that is still somewhat under-studied—how personality traits, and the Big Five specifically, relate to environmental actions and investments. The authors also consider potential mediational paths that may lead from the Big Five traits to energy investments. Overall, the results are both novel and useful.

#### Strengths:

1. The paper is quite well written, and is clear in almost all regards.
2. The sample size is quite large and the sample is nationally representative.
3. The authors go beyond main effects of how personality relates to investments, and incorporate two potential, plausible mediators (i.e., environmental concern and risk preferences).
4. From an environmental impact standpoint, green investments are an important behavior worth studying.

#### Limitations:

1. It would be useful if in the abstract the authors could list which specific personality traits they found to be linked to investments.
2. It is a very minor point, but the language implying a causative relationship between the traits of openness and conscientiousness and pro-environmental behavior is a little strong (i.e., there is no published research that I know of manipulating/changing Big Five traits and measuring environmental behavior).
3. It would be useful to know the scale reliabilities of the Big Five trait measures.

4. Given the focal behavior, it makes sense to exclude renters. Relatedly, do the authors have any sense whether the households chose to make green investments themselves, or is it possible that some of the households who stated they have green energy installations inherited them, of sorts, if they recently bought their house?

5. I appreciate that the authors test two different models for handling data that includes multiple respondents per household, and household members with varying degrees of decision-making authority. Both models seem like reasonable approaches, but I would also be curious to know if the authors considered a model where each household member's traits were entered as independent predictors when they both stated they made decisions together (so not averaging the traits, whether household member stated they were equally involved in decisions). A closely related approach would have been to use each household member's traits as independent predictors, controlling for respondents nested within households in a multilevel model. Were either of these approaches considered? Also, can the authors cite relevant published research where similar approaches were used as the two models currently included in the manuscript?

6. It seems that the mediation model included all five personality traits as predictors at the same time (so one model, not five), but I did not see this explicitly stated anywhere. Assuming this is correct, the authors may just want to clearly state this on p. 12 or 13.

7. It may be worth a brief mention in the discussion that increasingly personality researchers have been exploring how and when personality traits change over time (e.g., Roberts et al., 2006; Roberts et al., 2017). Tailoring messages to match different personality traits and concerns is the classic approach to bridging the gap between personality research and behavior change, but brief acknowledgment of this growing work on personality change may lead to some interesting ideas/insights in the discussion.

8. It is worth acknowledging in the discussion that risk preferences and environmental concern were each measured with only one item, which may somewhat decrease our confidence in the mediation findings.

## References

Roberts, B. W., Luo, J., Briley, D. A., Chow, P. I., Su, R., & Hill, P. L. (2017). A systematic review of personality trait change through intervention. *Psychological Bulletin*, 143, 117-141.

Roberts, B. W., Walton, K. E., & Viechtbauer, W. (2006). Patterns of mean-level change in personality traits across the life course: A meta-analysis of longitudinal studies. *Psychological Bulletin*, 132, 1-25.

## 2) Figures/tables/data availability:

Please comment on the author's use of tables, charts, figures, if relevant. Please acknowledge that adequate underlying data is available to ensure reproducibility (see open data policies per discipline of Collabra here):

The tables are clear, effective, and sufficient.

3) Ethical approval:

If humans or animals have been used as research subjects, and/or tissue or field sampling, are the necessary statements of ethical approval by a relevant authority present? Where humans have participated in research, informed consent should also be declared.

If not, please detail where you think a further ethics approval/statement/follow-up is required.:

Not applicable, given the nature of the data (i.e., previously collected).

4) Language:

Is the text well written and jargon free? Please comment on the quality of English and any need for improvement beyond the scope of this process.:

The writing is clear and effective.

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### Editor Decision for Version 1

**Editor:** Brent Donnellan

**Affiliation:** Michigan State University, US

**Editor decision:** Revisions Required

**Decision date:** 14 January 2018

Dear Mr Ante Basic-Sontic,

Thank you for submitting your work to Collabra: Psychology. First, I should I apologize for the time your paper spent in review. It took me some time to find reviewers and then I also took some time off for the end of the year holidays. This created delays in processing and I am sorry. I read your paper and then I read the comments from the two reviewers. These individuals are extraordinarily well qualified to review this paper and I thank them for their service to this journal.

As you will read below, the reviewers raised questions about the work and offered constructive suggestions. The bottom line was positive so I think we can move forward with a revise decision. The topic is interesting and the dataset seems appropriate for addressing initial questions in this line of inquiry. I do not plan to send this back out for review and thus the time lag to the final decision should be greatly reduced if and when you submit the revised manuscript. My plan would be to review the new version and the letter of response and then make a final up or down decision. I still reserve the right to consult with one or both reviewers if anything drastically changes.

The reviewers did an outstanding job and you should address each of their concerns either in the revised text or in the response letter. I will highlight some issues that came up as I read your paper. I acknowledge that you might disagree with some (or all) of the points so feel free to pushback

against any suggestions you believe will harm your work. Just describe your counterpoints in the letter.

1. I agree with reviewer concerns about causal language. Please edit the paper throughout to make it clear that you are dealing with associations and that much of the existing literature is focused on associations. Phrases like “personality ... causes meaningful life outcomes” and “psychological traits lead to pro-environmental behaviours” are fairly common in the paper. At an abstract level, I am prone to thinking about traits as having causal force but the existing data to supports such claims are controversial. Thus, I ask that you do edit the text accordingly. I think this strategy will also reduce negativity in readers who sensitive to this concern.

2. I also think you should be clear that you are focused on personality trait domains and you are drawing on a particular structural model in the paper. There is more to personality to traits and as noted by one of the reviewers, there are other trait models in the literature besides the Big Five. Modifying the Introduction and discussing any potential limitations would help address these related concerns. There might be other individual differences that are stronger correlates of the variables you are studying.

3. The current study has numerous design strengths but the brief measures of the Big Five trait domains is a limitation. Please reference the work about the limitations of short forms (see e.g., Credé et al., 2012). I also think it is fine to point out the reality that big panel studies are often limited to short personality measures because of the multiple foci of the projects. The choice is often between a data from a short form versus no personality data.

4. I thought the Introduction was a little long so you might be able to streamline the work with judicious editing to get to the proposed model and Method section more quickly.

5. Were there differences in terms of personality measures or other variables between renters and home owners?

6. In conducting analyses on the last word model, I think it would make to sense to run a supplementary test excluding the cases where you had to average trait ratings because both people were equally involved. (I am pretty sure that couples are not strongly matched on trait levels and this might be a further consideration when considering this issue). One of the reviewers provided interesting suggestions for dyad-level approaches to this general issue that are well worth considering.

7. I agree with the reviewer about the need for a large correlation matrix. Please make this the new Table 2 in the paper.

8. There are a number of control variables. They seem reasonable but I ask that you provide a sentence or two to justify each one.

9. You might walk readers through the regressions in a little more depth given the prediction to a binary outcome.

10. I do have reservations about tests of mediation with cross-sectional data in line with concerns

expressed in the literature. I ask you to consider citing that work (see work by Maxwell and Cole for example) and reflecting on the limitations. Likewise, addressing issues with #1 and making it clear what the current analyses are able to show (and not show) will help address this concern.

Credé, M., Harms, P., Niehorster, S., & Gaye-Valentine, A. (2012). An evaluation of the consequences of using short measures of the Big Five personality traits. *Journal of personality and social psychology*, 102(4), 874.

Maxwell, S. E., & Cole, D. A. (2007). Bias in cross-sectional analyses of longitudinal mediation. *Psychological methods*, 12(1), 23.

Maxwell, S. E., Cole, D. A., & Mitchell, M. A. (2011). Bias in cross-sectional analyses of longitudinal mediation: Partial and complete mediation under an autoregressive model. *Multivariate Behavioral Research*, 46(5), 816-841.

To access your submission account, follow the below instructions:

- 1) login to the journal webpage with username and password
- 2) click on the submission title
- 3) click 'Review' menu option
- 4) download Reviewed file and make revisions based on review feedback
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- 6) Click the 'notify editor' icon and email the confirmation of re-submission and any relevant comments to the journal.

Please ensure that your revised files adhere to our author guidelines, and that the files are fully copyedited/proofed prior to upload. Please also ensure that all copyright permissions have been obtained. This is the last opportunity for major editing; therefore please fully check your file prior to re-submission.

If you have any questions or difficulties during this process, please do contact us. Could you have the revisions submitted within 60 days? If you cannot make this deadline, please let us know as early as possible.

Thank you for trusting us with your work.

Brent Donnellan

Michigan State University

donnel59@msu.edu

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## Author's Response to Review Comments for Version 1

**Author:** Ante Basic-Sontic

**Affiliation:** Department of Land Economy, University of Cambridge, UK

**Revision submitted:** 02 February 2018

Dear Professor Brent Donnellan,

Thank you for your invitation to revise and resubmit our research paper "Personality trait effects on green household installations". We very much appreciate the time and effort you and the Reviewers have put into the assessment of the paper. We carefully discussed the comments and revised the paper accordingly, and feel it is much improved. We hope that we adequately addressed the concerns. Please find the detailed revisions attached or in the supplementary material "Revisions" (120-1577-1-SP.docx).

Kind regards,

Ante Basic-Sontic

Department of Land Economy, University of Cambridge

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## Editor Decision for Version 2

**Editor:** Brent Donnellan

**Affiliation:** Michigan State University, US

**Editor decision:** Revisions Required

**Decision date:** 15 February 2018

Dear Mr Ante Basic-Sontic,

Thank you for submitting your revised work to Collabra: Psychology. I read the new version and then your letter of response. I think this is almost ready to go but I had few minor lingering concerns that can be addressed with a last revision. This, my decision is essentially a conditional accept pending attention to these last issues. You might still disagree with some (or all) of the points so feel free to pushback against any suggestions you believe will harm your work. Just describe your counterpoints in the letter.

1. The use of causal language is greatly improved in this draft but there are some vestiges that should be addressed. For example:

In the Abstract you say "depend on the Bi Five...". Can you use "associated with" here instead?

Affect appears on the first line of page 4. Can you use "associated with" here again as well?

Predicted appears on page 5. Can you qualify that with "statistically"?

The term "impact" appears in H5EC.

I won't make further suggestions but please consider one last revision with an eye toward this issue.

2. Instead of saying neurotic people can you say people high on neuroticism?

3. You might be a bit more specific about the issue with content coverage with short measures on page 20.

That's it. I think one last edit to address these issues and make the writing as crisp as possible and this should be good to go.

To access your submission account, follow the below instructions:

- 1) login to the journal webpage with username and password
- 2) click on the submission title
- 3) click 'Review' menu option
- 4) download Reviewed file and make revisions based on review feedback
- 5) upload the edited file
- 6) Click the 'notify editor' icon and email the confirmation of re-submission and any relevant comments to the journal.

Please ensure that your revised files adhere to our author guidelines, and that the files are fully copyedited/proofed prior to upload. Please also ensure that all copyright permissions have been obtained. This is the last opportunity for major editing; therefore please fully check your file prior to re-submission.

If you have any questions or difficulties during this process, please do contact us. Could you have the revisions submitted within 60 days? If you cannot make this deadline, please let us know as early as possible.

Thank you for trusting us with your work.

Brent Donnellan

Michigan State University

donnel59@msu.edu

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## Author's Response to Review Comments for Version 2

**Author:** Ante Basic-Sontic

**Affiliation:** Department of Land Economy, University of Cambridge, UK

**Revision submitted:** 17 February 2018

Dear Professor Brent Donnellan,

Thank you for taking time for the second review.

Below, please find our responses to your comments:

1. We edited the outlined and several other phrases to further tone down the wording on causality. We believe that we have addressed all relevant passages now. For instance:

"... personality traits drive..." was replaced with "... personality traits are associated with..." (p. 3)

"... the influence of psychological factors..." was replaced with "... psychological factors such as personality traits might be less associated..." (p. 6)

"... each of the Big Five traits influences..." was replaced with "... each of the Big Five traits relates to..." (p. 6)

"... predictive power of personality..." was replaced with "... the relationships between personality..." (p. 10)

"... Big Five traits affected..." was replaced with "...Big Five were linked to ..." (p. 16)

2. We exchanged "neurotic" with "high on neuroticism" and adjusted phrases of the same structure (e.g. individuals high on Openness to Experience).

3. We extended the elaboration on short measures in the "Limitations and future research" section:

"When time and resources are limited, personality researchers are often confronted with the choice between a brief or no measure of personality at all (Gosling, Rentfrow, & Swann, 2003). For example, the longest instrument of the Big Five with 240 items (Costa & MacCrae, 1992) takes approximately 45 minutes to complete and is possibly impractical for surveys with multiple focuses, such as panel studies.

The brief 15-item version of the Big Five Inventory in this study revealed a low reliability of the personality trait dimensions as assessed by Cronbach's alphas. Because low score reliabilities may obscure true relationships (Credé et al., 2012), the short personality inventory might be a reason for the weak link

found between personality traits and green investments. Futures studies could use more items per trait to assess whether the weak associations are indeed related to reliability and validity issues of the personality measures, or instead to the presumption that historically large subsidies for green installations in Germany (particularly solar panels) may have obscured more subtle associations with personality.

Similarly, the validity of the single-item measures of risk preference and environmental concern could be improved by the use of multiple items, which could reduce measurement error and therefore increase the validity of the variables (Credé et al., 2012). This would also allow to test for internal consistency of reliability of these measures which cannot be computed with single-item scales." (p. 20)

We adjusted several other passages to clarify our statements and improve wording. You can find an overview of all changes in the uploaded supplementary file "Manuscript\_R2\_track\_change".

We hope that we have adequately addressed the outlined issues in your email.

Best regards,

Ante

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## Editor Decision for Version 2

**Editor:** Brent Donnellan

**Affiliation:** Michigan State University, US

**Editor decision:** Accept Submission

**Decision date:** 20 February 2018

Dear Mr Ante Basic-Sontic,

Thank you for submitting the last revision of your submission to Collabra: Psychology, "Personality trait effects on green household installations". I read your letter of response and the latest version. I am now happy to accept your submission for publication, pending the completion of copyediting and formatting processes. Congratulations! I look forward to seeing this paper in the literature.

As there are no further reviewer revisions to make, you do not have to complete any tasks at this point. The accepted submission will now undergo final copyediting. You will be contacted once this is complete to answer any queries that may have arisen during copyediting and to allow a final chance to edit the files prior to typesetting. If you wish to view your submission during this time, you can log in via the journal website.

Thank you for trusting Collabra: Psychology with your work. Please consider us again in the future.

Sincerely,

Brent Donnellan

Michigan State University

donnel59@msu.edu