Which personal factors are associated with group creativity?

*A recommendation by **Julia M. Rohrer** 🆔 based on peer reviews by of the STAGE 2 REPORT:*

What determines whether groups of people can come up with ideas that are both original and useful? Since the 1960s, this question has been intensively studied with the help of more or less structured group creativity activities such as brainstorming or creative problem solving, with subsequent rating of the generated ideas.

In this line of research, personal factors—such as personality traits, and other interindividual differences in emotion and cognition—have received substantial attention as potential correlates of creative outcomes of group activities. This has spawned a sprawling literature that, to date, has not yet been synthesized. Thus, empirical findings in this literature, which are also sometimes contradictory, have not yet been well-integrated.

In the present study, Fillon et al. (2022) conducted the first meta-analysis of correlations between personal factors and group creativity outcomes. The authors searched and synthesized the existing published literature according to predetermined criteria to (1) assess the overall relationship between a broad list of personal factors and creativity outcomes in group settings and (2) explore potential moderators of these relationships.

In total, 11 studies could be included in the meta-analysis. They provided weak support for a positive correlation between self-efficacy and the three investigated group creative outcomes, number of ideas, originality of ideas, and usefulness of ideas. With respect to moderators, many of the planned analyses could not be conducted due to the low number of studies. The only finding that arose was weak evidence for the idea that time constraint moderates associations: relationships between personal factors and group creativity outcomes were slightly stronger for tasks limited to 20 minutes rather than 10 minutes. Statistical power overall was low across studies.

The authors conclude their meta-analysis with the observation that the available data on the topic are very limited. They suggest that to improve our knowledge of the topic, future studies should adhere to standardized

creativity methods and protocols and implement expert ratings of creativity. They also call for increasing the availability of raw data in this field of study to improve the accumulation of knowledge about links between personal factors and the creative performance of groups.

The Stage 2 manuscript was evaluated over one round of in-depth review provided by the recommender and Chris Chambers, as the original reviewers were no longer available. Based on additional changes to the manuscript, the recommender judged that the manuscript met the Stage 2 criteria and awarded a positive recommendation. **URL to the preregistered Stage 1 protocol:** `https://osf.io/nybg6` **Level of bias control achieved:** Level 3. *At least some data/evidence that was used to answer the research question had been previously accessed by the authors (e.g. downloaded or otherwise received), but the authors certified that had not yet observed ANY part of the data/evidence prior to IPA.*

List of eligible PCI RR-friendly journals:

- F1000Research

- Peer Community Journal

- PeerJ

- Royal Society Open Science

- Swiss Psychology Open

References:

1. Fillon, A. A., Girandola, F., Bonnardel, N., Kenworth, J. B. & Souchet, L. (2023). Personal factors and group creativity characteristics: A correlational meta-analysis, acceptance of Version 2 by Peer Community in Registered Reports. `https://psyarxiv.com/4br6a/`

Reviews

Evaluation round #1

DOI or URL of the preprint: `https://psyarxiv.com/4br6a/`
Version of the preprint: 1

Authors' reply, 04 May 2023

Dear Prof. Rohrer,

We have conducted several changes based on your comments. Thanks a lot for your proofreading, I also checked the paper with grammarly and paperpal (while I am not that convinced about the suggestions made by paperpal).

As proposed, we modified the Design table by adding a Summary column. We also rephrased many cells that were poorly phrased and false. I emphasized that the moderator test is a Q test (test of heterogeneity) that I conducted via metafor. Same for the published/unpublished studies' moderator.

For the Power analysis section – I am not sure to have correctly addressed the point. The idea is that if someone wants to replicate the effect (to find a correlation between personal factors and creative outcomes in

a group setting), they will have to drastically improve the sample size to improve the power of the study. But that is more something to say in discussion than in result section.

As asked, I added the P-curve figure and deleted the sentences.

Finally, I carefully rechecked the reference section and added missing references. I also added a * to the studies included into the meta-analysis to help the reader find them.

Best regards,

Adrien Fillon

Download tracked changes file

Decision by **Julia M. Rohrer** ⓘ, posted 24 March 2023, validated 24 March 2023

Personal factors and group creativity: Some last minor changes before a recommendation can be issued

Dear Dr. Fillon and colleagues,

Thank you very much for submitting your Stage II Registered Report on the associations between personal factors and group creativity. While the results of the meta-analysis are a bit anticlimactic due to the low number of studies you could include, I believe that this assessment of the existing evidence will be helpful for researchers to orient their future research efforts.

The original reviewers were unavailable to assess the manuscript. Thus, both Chris Chambers and I reviewed the manuscript with an eye on protocol adherence. We both agree that the implementation of your meta-analysis is solid and that the criteria for issuing the recommendation are nearly met.

There are just a couple of minor issues that should be addressed before I can issue the recommendation. First, there were a couple of deviations from the protocol. These appear reasonable given the small number of studies; however, these deviations should still be reported with a brief justification (in the style of the comments you provided in the manuscript with tracked changes). Second, the reporting of the p-curve results seemed somewhat incomplete and I think that I require some clarification with respect to your moderator analysis.

I also proofread the manuscript as well as possible given that I am not a native speaker and fixed some typos and made some suggestions for how to make the text easier to follow in certain parts of the manuscript. These are only suggestions, feel free to reject them if you feel like they do not capture the intention of what you wanted to express. However, in any case, I would recommend carefully reading the whole manuscript once again to catch any remaining errors (possibly with the help of some online tool – I am using Grammarly myself because I am struggling with the English language from time to time…).

Please find attached a Word document with tracked changes that, I hope, makes it easier for you to revise the manuscript. Once again thank you for submitting your work to PCI RR, it was very interesting to learn more about the state of the art of research in group creativity research.

Kind regards,

Julia Rohrer **Download recommender's annotations**