**Review Registered Report**

The proposed study aims to investigate the varying effects of financial scarcity-related cues on cognitive performance (sustained attention) among poor and non-poor individuals. The primary focus of the study involves conducting a comprehensive online experiment involving 3000 Hungarian respondents to test this hypothesis. In addition, the authors intend to perform exploratory analyses to gain a more thorough understanding of the heterogeneity in treatment effects across various populations and the role of different types of financial scarcity-related cues.

Overall, the proposal provides a detailed description of the hypothesis, experimental design, and methods to be employed. However, several key aspects require attention and refinement to strengthen both the study’s design and its theoretical framework. I recommend incorporating the following comments to improve the setup of the study.

**Main comments**

1. Definition and measures of financial scarcity

Financial scarcity is commonly defined as ‘having less than you feel you need’, aligning with the subjective poverty definition rather than absolute or relative ones (see Hagenaars & De Vos, 1988). Given this definition, the study’s conceptualization raises some issues:

* The authors employ a poverty index encompassing measures of absolute objective, absolute relative, and subjective poverty. It's essential to clarify why this approach is chosen over focusing solely on subjective poverty, as commonly used in scarcity literature.
* Regarding financial scarcity priming, the authors utilize cues related to both absolute and relative scarcity. The rationale behind this choice (compared to cues related to subjective financial scarcity) should be provided, or consideration should be given to adjusting the cues to focus solely on subjective scarcity.

2. Outcome measure and mechanisms

The study focuses on sustained attention as outcome measure for cognitive performance. This raises three concerns.

* Given that the study focuses only on a single dimension of cognitive performance, I think that the scope should be adjusted to sustained attention as outcome rather than cognitive performance. Adjustments to the title, abstract, and introduction are necessary if the authors concur.
* The theoretical underpinnings regarding how scarcity affects sustained attention require improvement, particularly in describing the specific effects of scarcity-induced cues on sustained attention. Incorporating recent literature on this topic, see De Bruijn & Antonides (2022) and Haushofer & Salicath (2024) for overviews, would enhance the theoretical framework.
* I doubt whether scarcity-induced cues deteriorate sustained attention for individuals facing scarcity. According to scarcity theory, two mechanisms might be at play: Tunneling and cognitive load (Mullainathan & Shafir, 2013; De Bruijn & Antonides, 2022). In the introduction section of the protocol, the authors mainly focuses (implicitly) on cognitive load as mechanism predicting that scarcity-induced cues may deteriorate sustained attention. However, scarcity theory also predicts that scarcity might improve attentional focus under specific conditions. The authors should address whether both mechanisms are at play and whether that changes the theoretical predictions.

3. Appropriateness of online setting

I have concerns whether the online setting is appropriate for the priming experiment. I refer to the comments of Shah et al. (2023) on a replication study executed by O’Donell et al. (2023). Given this debate, the authors should justify why an online experiment is appropriate for their study and incorporate measures to check the validity of the experimental design in online settings.

**Additional comments based on the five Stage 1 criteria**

1A. The scientific validity of the research question

The research question is: Do financial-scarcity-related cues deteriorate disproportionately the cognitive performance of poor individuals?

* The research question should avoid subjective terms like ‘disproportionately’ to enhance objectivity.
* Given the inclusion of separate experimental conditions for absolute and relative scarcity cues, consider formulating a hypothesis that addresses potential differences between these conditions.

1B. Logic, rationale, and plausibility of the proposed hypotheses

See above. While the difference between absolute and relative scarcity-related cues is acknowledged, no specific hypothesis is proposed. Consider either formulating a separate hypothesis or reducing the emphasis on this distinction in the paper.

1C. Soundness and feasibility of the methodology and analysis pipeline

Some minor comments:

* inconsistencies between the stated number of experimental groups (Hypothesis: two experimental conditions) and the experimental design (Figure 1: Three experimental conditions) need clarification.
* The survey incorporates questions related to financial scarcity. According to the experimental design, half of the participants have to answer these questions prior to the experimental part; the other half afterwards. I think that answering these questions before may affect the experimental part. As a consequence, I recommend to consider shifting the survey-part to the end of the experiment.
* The measure for subjective volume of financial debt may not be an ideal measure. For example, households with own houses usually have high debts (mortgages), but the experienced burdens of these debts are small given the type of debt (secured). An alternative might be the subjective measure of debts used by Lusardi et al. (2018) and De Bruijn & Antonides (2020).
* Clarify the rationale for using a continuous measure for poverty (Poverty Index) compared to binary measures typically used in previous studies.

The proposed sample size is well-supported by a power analysis and seems to be realistic.

1D. Clarity and degree of methodological detail

The Stage 1 protocol provides sufficient detail to ensure reproducibility and protect against research bias.

1E. Sufficient outcome-neutral conditions

Pre-specification of data quality checks in the protocol demonstrates a commitment to ensuring outcome-neutral conditions.

**References**

De Bruijn, E. J., & Antonides, G. (2020). Determinants of financial worry and rumination. Journal of Economic Psychology, 76, 102233.

Hagenaars, A., & de Vos, K. (1988). The definition and measurement of poverty. The Journal of Human Resources, 23(2), 211.

Haushofer, J., & Salicath, D. (2023). The Psychology of Poverty: Where Do We Stand?. Social Philosophy and Policy, 40(1), 150-184.

Lusardi, A., & Mitchell, O. S. (2018). Older women’s labor market attachment, retirement planning, and household debt. In C. Goldin, & L. F. Katz (Eds.). Women working longer: Increased employment at older ages (pp. 185–215). The University of Chicago Press.

O’Donnell, M., Dev, A. S., Antonoplis, S., Baum, S. M., Benedetti, A. H., Brown, N. D., ... & Nelson, L. D. (2021). Empirical audit and review and an assessment of evidentiary value in research on the psychological consequences of scarcity. Proceedings of the national academy of sciences, 118(44), e2103313118.

Shah, A. K., Zhao, J., Mullainathan, S., & Shafir, E. (2023). A scarcity literature mischaracterized with an empirical audit. Proceedings of the National Academy of Sciences, 120(26), e2206054120.