**General comments**

Thank you for the opportunity to be a reviewer for the registered report " Unveiling the Positivity Bias on Social Media: A Registered Experimental Study On Facebook, Instagram, And X". I believe the research explores a very interesting and important topic, which is how the positivity bias differs across different social media platforms. Although I am not an expert in the field of social media research, I believe that the goal and need for the study are clearly explained and that the proposed methods seem appropriate. Below are some comments and suggestions to further improve the proposed research.

**Specific comments**

Major comments

* The proposed research is both interesting and relevant, and the study is well explained. However, it would enhance clarity to explicitly state that H1 replicates an established phenomenon (the positivity bias), while H2 introduces a novel perspective by examining this bias across various social media platforms. Although this distinction is mentioned in the general introduction, it could be discussed more explicitly in section 4.1.
* While the different hypotheses are well explained, it would be beneficial to also formulate a specific research question for the confirmatory aspect of the study, not solely for the exploratory part.
* Adding additional background information on the relevance and significance of emoticon usage and post length in social media would enrich the relevance of the exploratory aspect of the study.
* Clarification is needed regarding the statement "whose text will not be coded by the researcher”. Why are some texts not coded by the researcher?
* The authors do a sample size calculation based on expected effect sizes; however, they do not mention calculating effect sizes for the planned analyses. Incorporating effect size calculations alongside the planned statistical analyses would be beneficial.
* Similarly, while the authors adeptly outline their interpretation of significant results, it would be beneficial to explicitly address how this interpretation may be contingent upon the effect size.
* Clarification for the criteria for data exclusion is needed. Will neutral data be excluded again? Are participants removed if valence cannot be accurately coded? Additionally, are there any other criteria for outlier exclusions, such as excessively short or long posts?

Minor comments

* The introduction and/or abstract would benefit from an earlier definition of "positive bias," (this sentence may be written earlier “leading users to predominantly share and engage with positive content rather than negative or neutral ones”)
* Clarify whether the question regarding participants' usage of Facebook, Instagram, and Twitter at least once a month relates solely to interacting with the platform or includes posting content as well.
* Instagram also requires to add a picture alongside the text (which the other platforms do not). This should be discussed somewhere in the paper.
* Including the full questionnaire in the supplement would aid in study replication. Clarify the types of socio-demographic questions asked, such as defining "current situation" mentioned in the exploratory research.
* Specify what "enough participants" means for the planned sensitivity analyses.
* The authors mentioned having three conditions when doing the power analysis (section 4.2) but did not clarify what these conditions are. While it was understood as the type of social media in the exploratory study, it would be helpful to explain what they are in the registered study.
* Since the questionnaires will only be answered on smartphones, it would be interesting to include a question about where people typically use each social media platform (could be added as a control variable). I could imagine that especially older adults use Facebook and Twitter also on their computer.
* Another suggestion is to include a question where participants rate the valence of their social media posts themselves and compare these ratings with those from the authors. It would be interesting to know whether those differ and whether conclusions would change. A control question regarding whether people usually share events on several platforms could also be added.