

Comparing Self-Reported Subjective Wellbeing to Sentiment Analysis Approaches to Measuring Happiness

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STUDY

992

Participants

Motivation:

The lexical model of emotion and the cognitive appraisal model of emotion entail significantly different epistemological assumptions about what emotions are and how they might be measured.

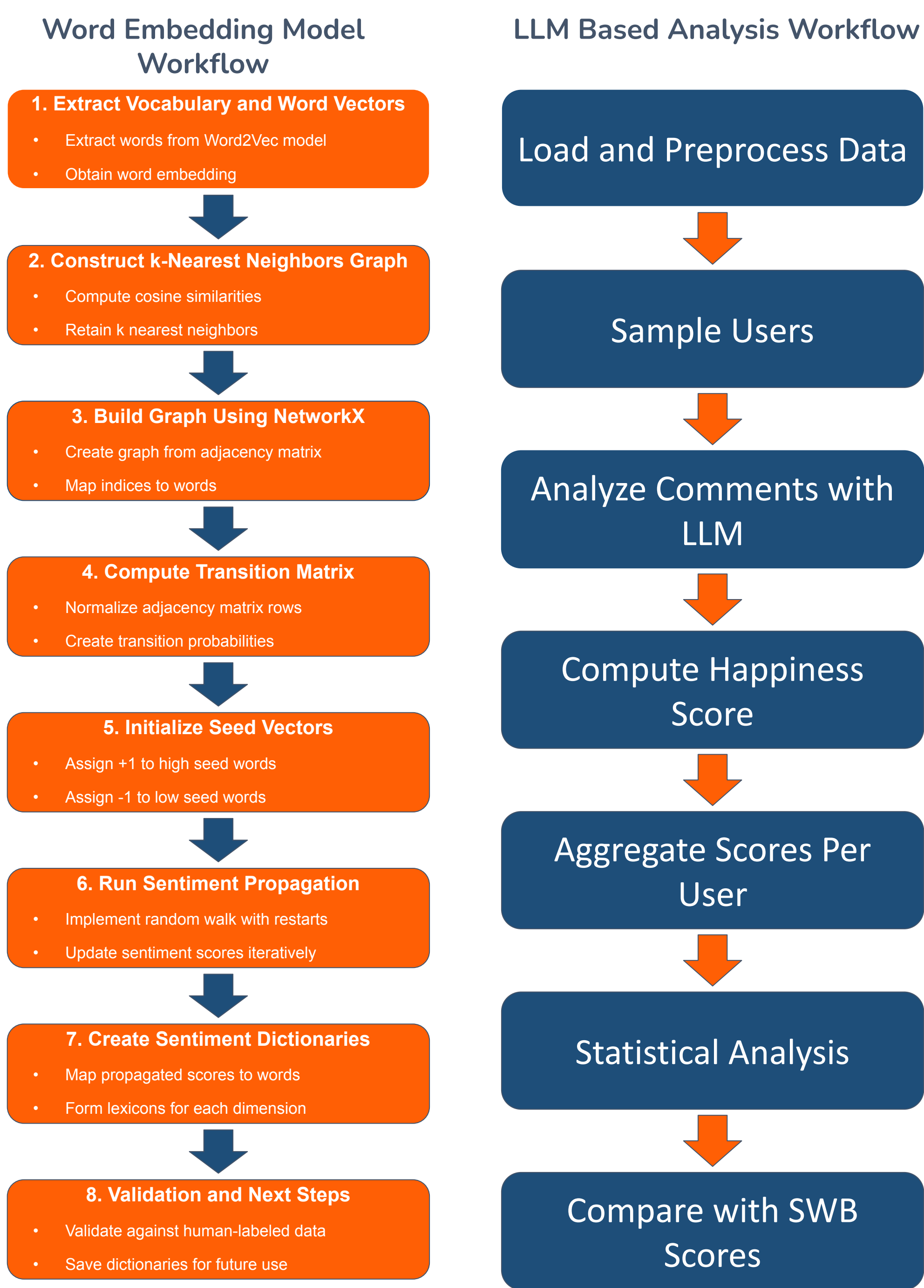
Research Questions:

- RQ1:** Does the lexical model of emotion operationalize happiness in a way that is aligned with the cognitive appraisal model of emotion?
- RQ2:** How well do Large Language Models (LLMs) operationalize the concept of happiness compared to the cognitive appraisal model of emotion?

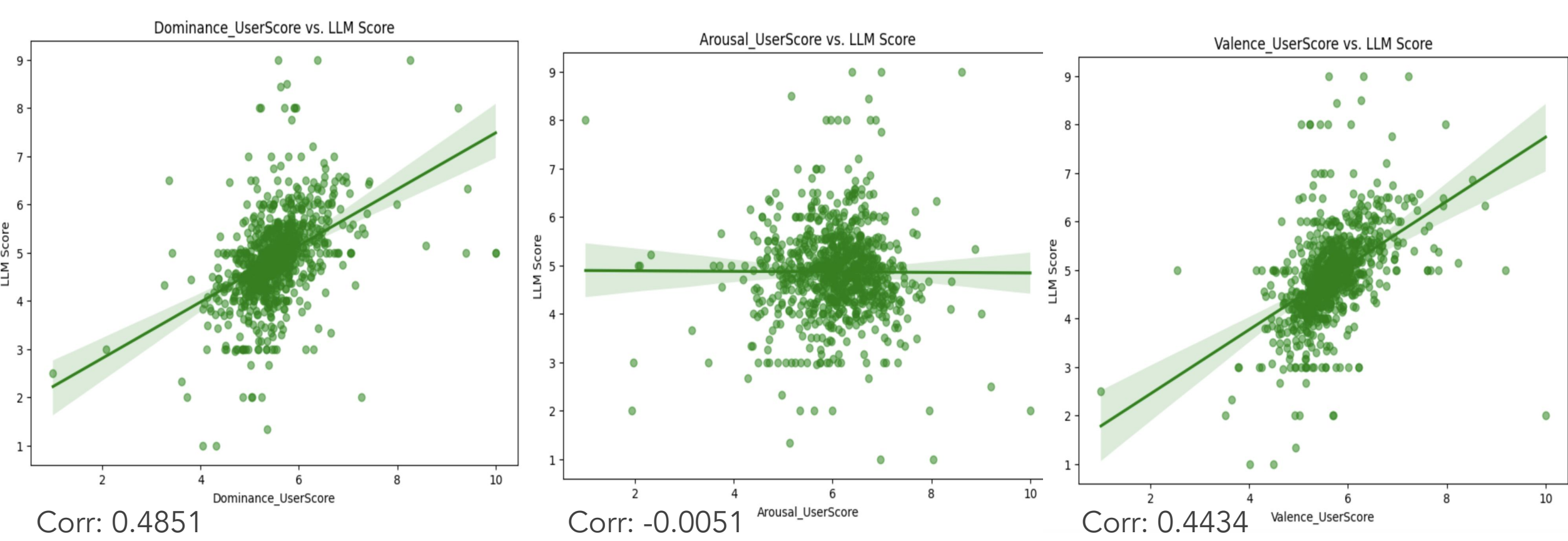
Data Collection:

We used a sample of 992 Reddit users who responded to an informal Subjective Wellbeing survey. We applied XANEW and an LLM to measure positive and negative affect in the respondents' comments and attempted to measure correlations between the derived sentiment values and the users' self-reported measurements. If the methods measured the same concept, we expected the scores to be meaningfully correlated.

Methods:

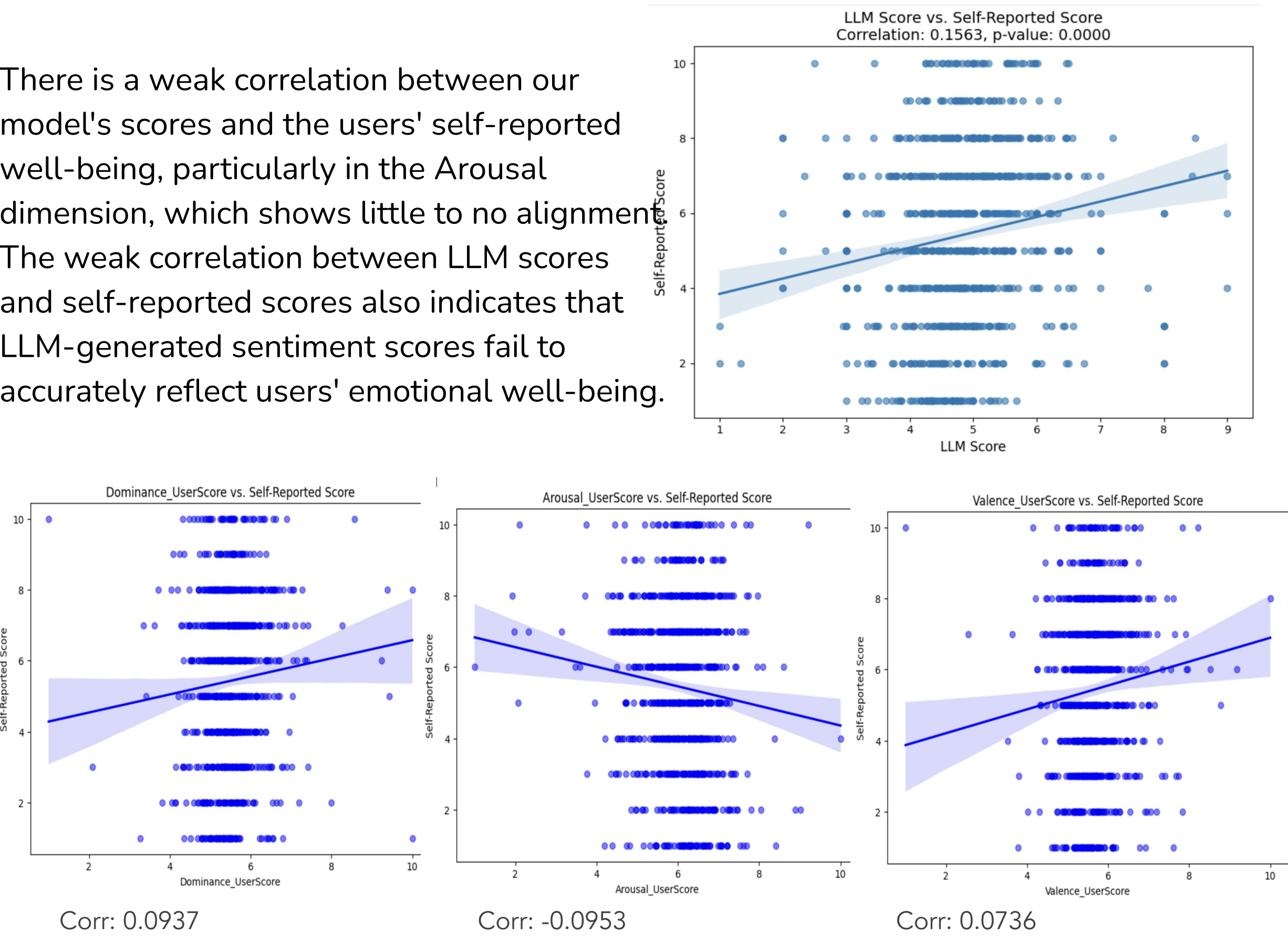


Results:



Our findings indicate that the sentiment propagation model's Valence and Dominance dimensions align moderately with the sentiment assessments provided by the language model (LLM), suggesting that the word embedding model captures certain aspects of sentiment recognized by the LLM.

There is a weak correlation between our model's scores and the users' self-reported well-being, particularly in the Arousal dimension, which shows little to no alignment. The weak correlation between LLM scores and self-reported scores also indicates that LLM-generated sentiment scores fail to accurately reflect users' emotional well-being.



Conclusions:

- The ANEW model of happiness is not aligned with the self-reported happiness scores. This suggests that the cognitive appraisal and lexical models of happiness are not measuring the same concept.
- LLMs are marginally more aligned with the cognitive appraisal model.