

Building a Better Email Promotion: ChatGPT and Double Machine Learning

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Research Questions

- How can firms leverage ChatGPT and observational data to generate new email promotions?
- Are Ada Embeddings a viable solution to encoding text-based data in empirical work?

Testing

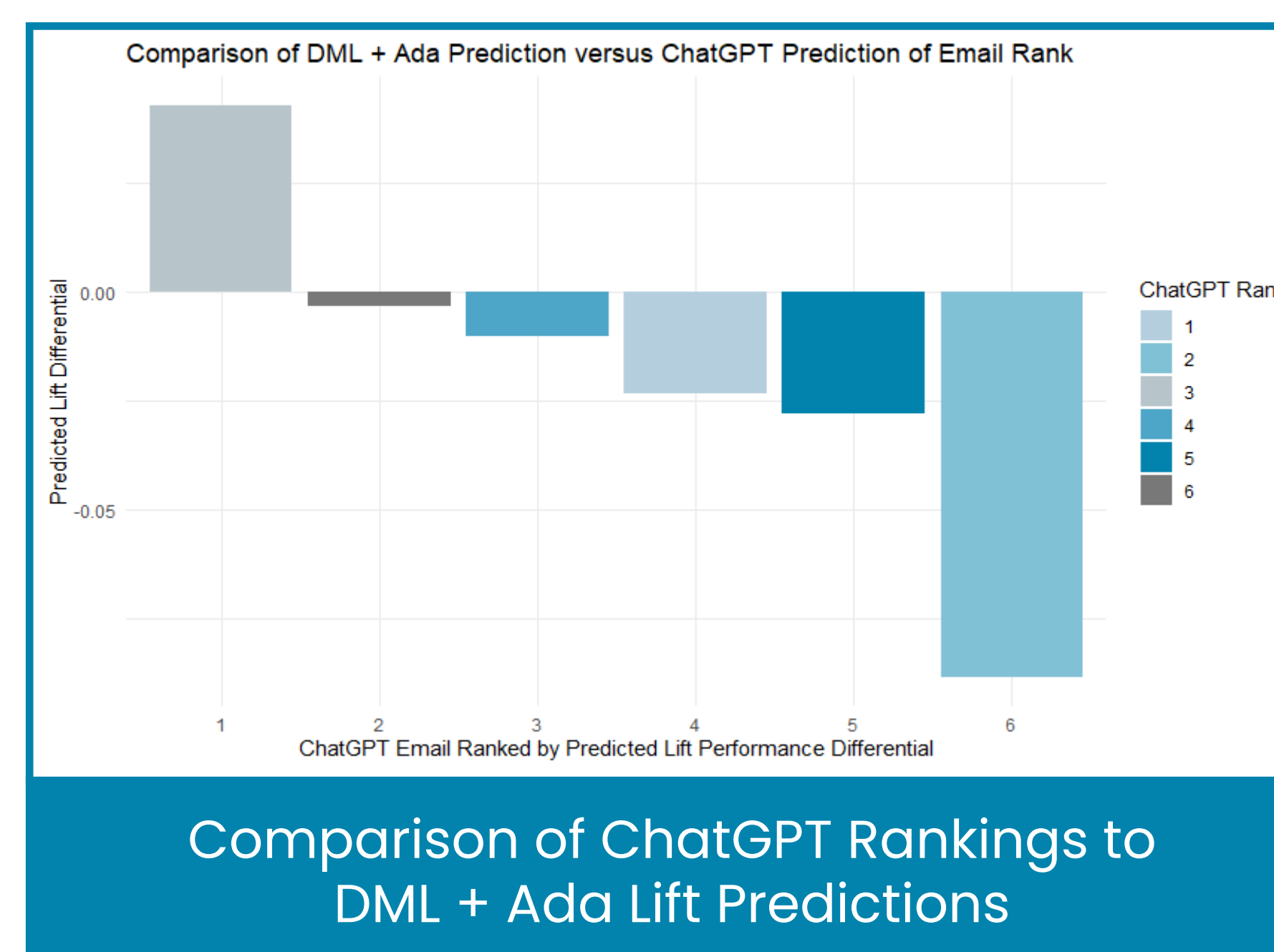
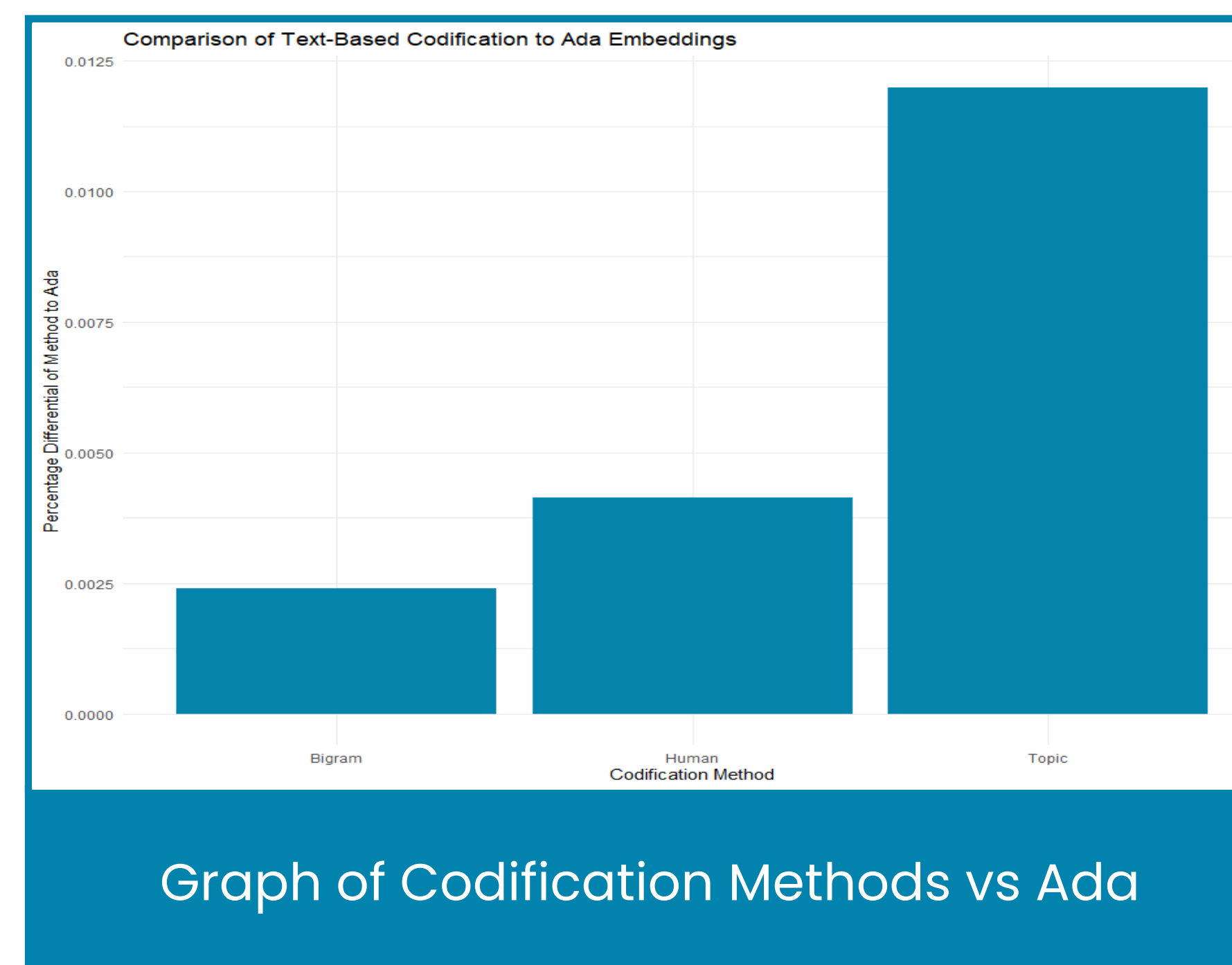
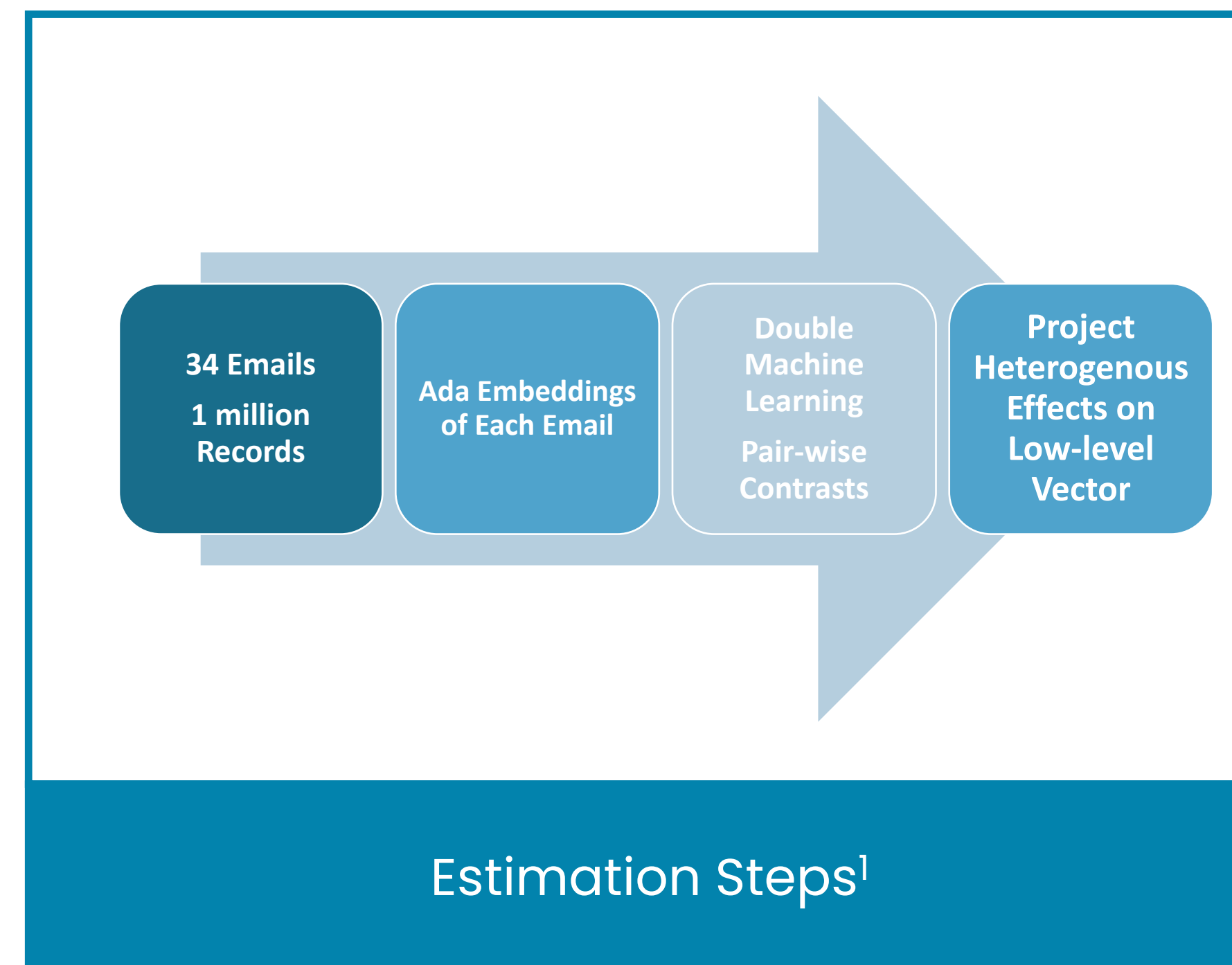
- Comparing Ada Embeddings performance in predicting heterogenous treatment effects vs. other methods
- Testing Ada Embeddings ability to predict the effect of “new” email promotions
- Comparing ChatGPT vs. our approach in predicting the success of generated email promotions

Results

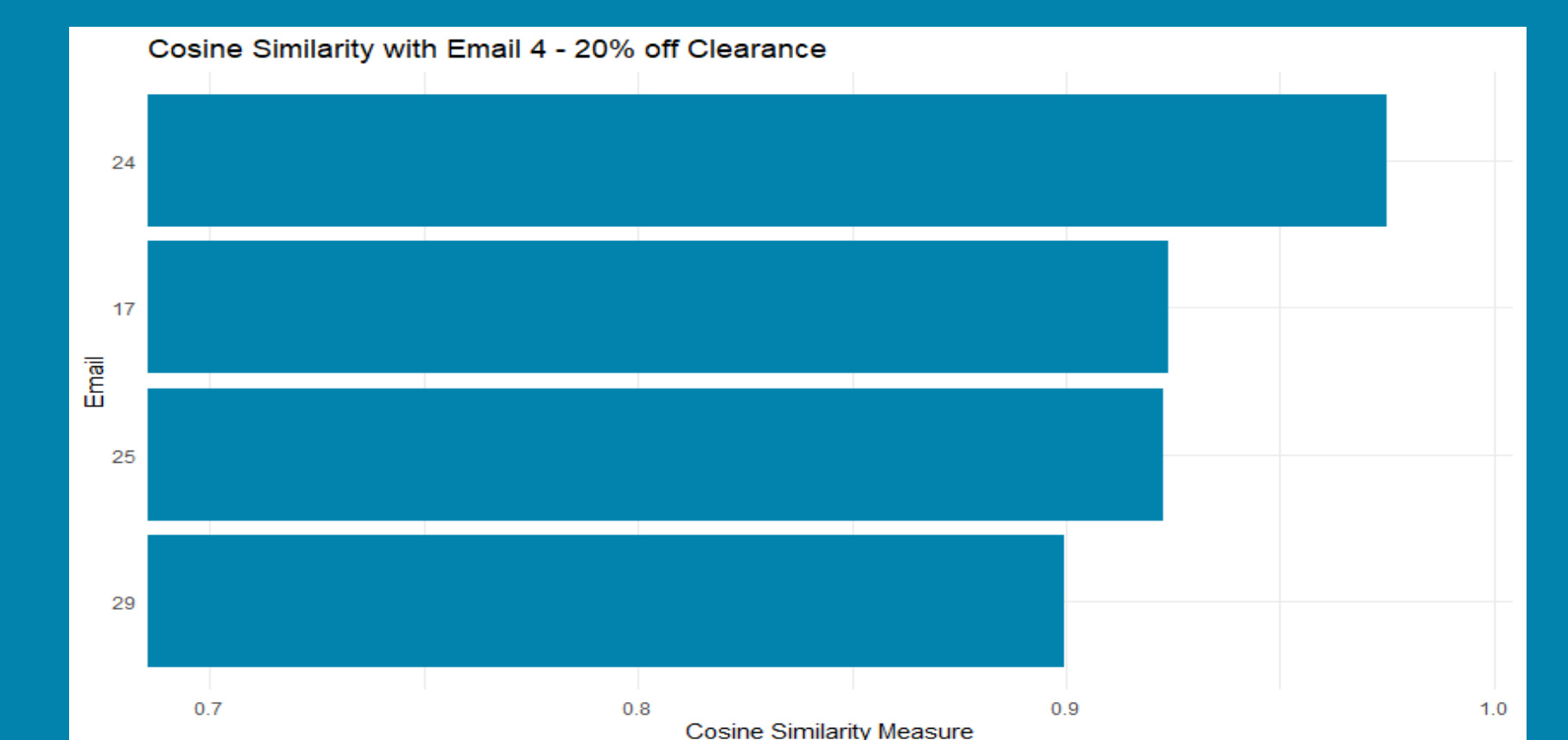
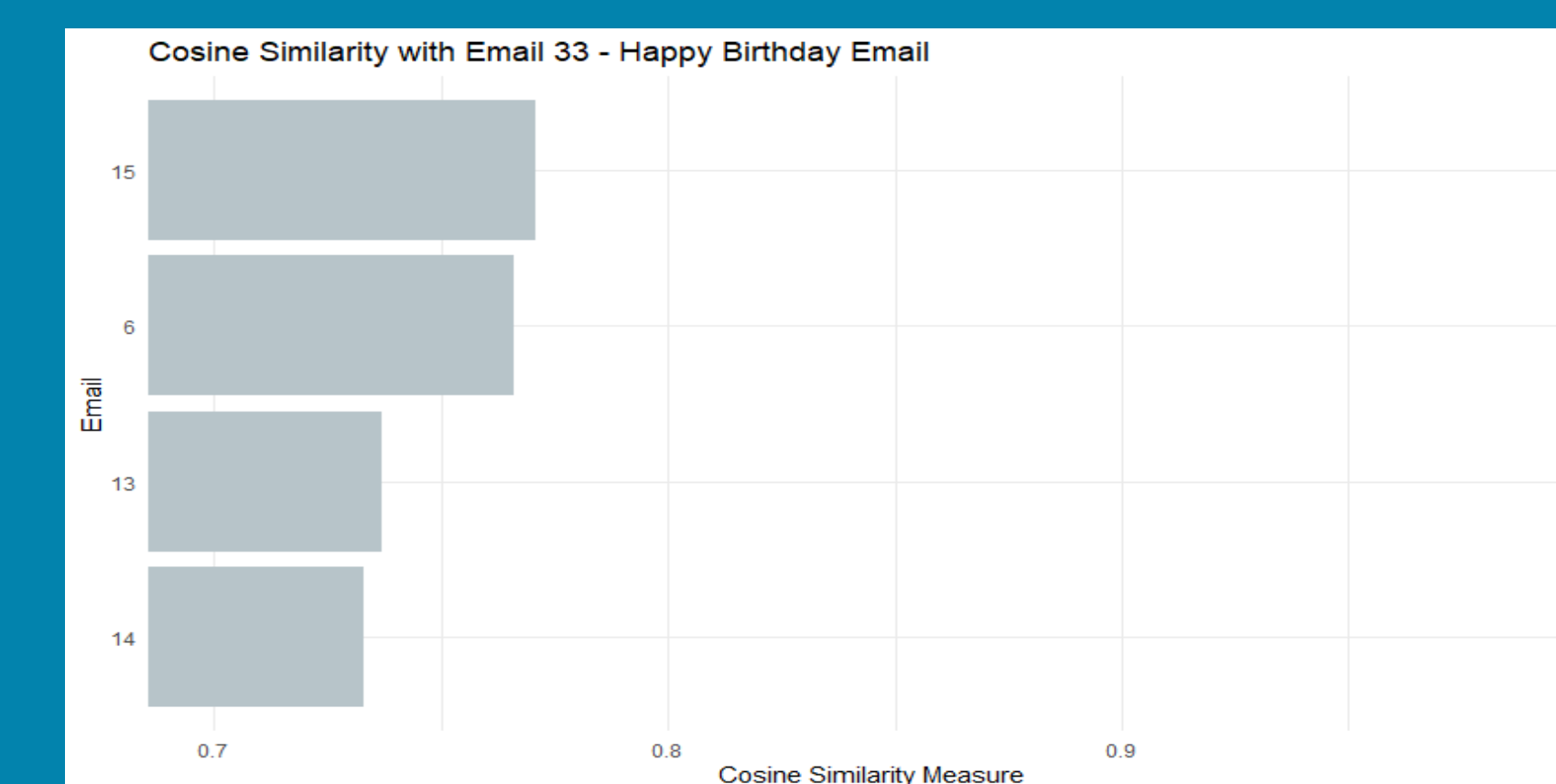
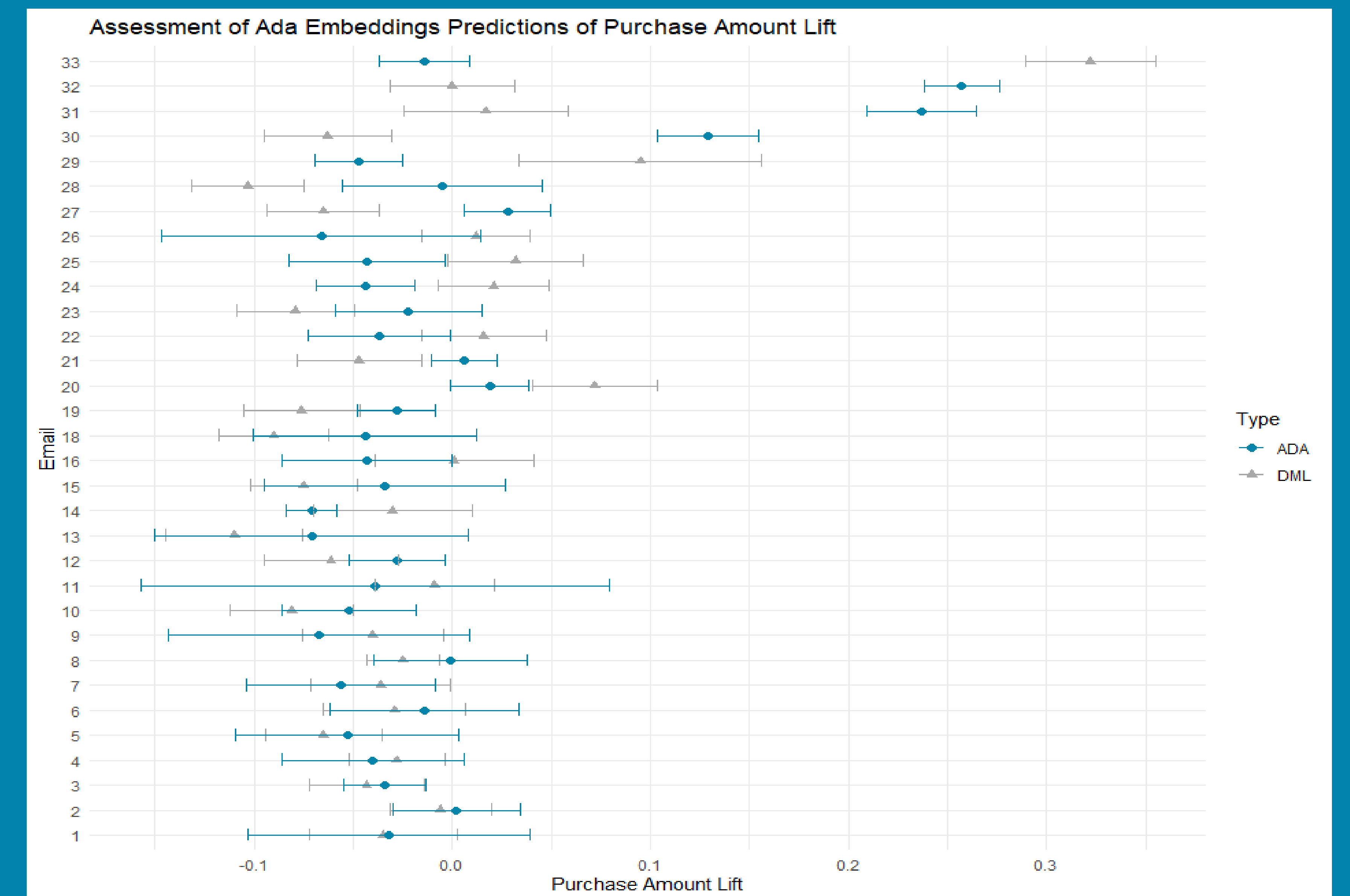
- Ada Embeddings surpass Human Codification in prediction of heterogenous treatment outcomes
- ChatGPT (Ada Embeddings) with DML can develop and predict the outcomes of new email promotions

Discussion

- Context is required to create a successful email promotion
- Ada Embeddings are a viable alternative to Human Codification



Saturation of the Feature Space is Critical for Forward Prediction of New Email Promotions



References

Ellickson, Paul, Wreetabrata Kar, and James C. Reeder, III, “Estimating Marketing Component Effects: Double Machine Learning from Targeted Digital Promotions”, *Marketing Science*, 2023, **42**:4, 704–728.

