

COVID-19 impact statement

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The Effects of Visual and Design Features on the Perception of Correlation in Scatterplots

A thesis submitted to the University of Manchester for the degree of
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in the Faculty of Science and Engineering

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Abstract

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Lay abstract

This is lay abstract text.

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2.10 Objectives and Contributions

Chapter 3

General Methodology

3.1 Introduction

As researchers, the selection of appropriate methods is crucial in order that our interpretations may be based in truth. The selection of methods necessarily entails research of its own, with approaches each having distinct advantages and disadvantages, and thus the decisions that were made are discussed below. It is worth noting that different methods may produce different results, meaning this thesis cannot claim to be an entire representation of knowledge, but rather a reflection of the researcher, the ways the research was done, and the particular philosophical environment that fostered the work.

3.2 Experimental Methods

In order to understand how changing visual and design features can affect interpretations of scatter-plots, the work presented here tests hypotheses using controlled experiments. This allows for the isolation of factors of interest from other features, and allows us to establish causality with regards to effects. The use of empirical studies in visualisation has a rich history [1], and facilitates the move towards designing from the ground up based on theory, as opposed to a more traditional paradigm in which visualisations are only tested after they have been designed by technical experts.

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References

- [1] H. Lam, E. Bertini, P. Isenberg, C. Plaisant, and S. Carpendale. “Empirical Studies in Information Visualization: Seven Scenarios”. In: *IEEE Transactions on Visualization and Computer Graphics* 18.9 (Sept. 2012), pp. 1520–1536. ISSN: 1077-2626. doi: 10.1109/TVCG.2011.279. (Visited on 03/14/2024) (cited on p. 16).

Appendices

Appendix A

First appendix

A.1 Section in Appendix