

Klíčová slova (anglicky):

Data visualization, deception, deceptive techniques, graphs, interventions, visual literacy

Abstract (in English):

Deceptive data visualization techniques are an increasingly emerging phenomenon. Previously, even simple visualizations were so costly and labor-intensive to create that one could rely on the authority of their creators. However, this is no longer true and anyone with access to a computer and the Internet is able to create an unprecedented number of visualizations, some of them deceptive, intentionally or not. Visual literacy is not part of basic education, and so most people have no way to defend themselves against them. In this bachelor thesis, we summarize existing knowledge regarding deceptive techniques and research areas that clarify how visualizations can be deceptive. In the practical part, we measured the effect size of 9 deceptive techniques, 5 of which have not yet been tested on a sample of university students (N=724). We also investigated how this deceptiveness is modified by the presence of a one-time textual intervention, for which we created several levels, increasing in their detail. At the same time, we also measured the visual literacy of all participants and observed whether the level of this ability affected the effect of deceptive techniques. A significant deceptive effect emerged for 6 of the 9 techniques (at least between the two levels of manipulation). At the same time, we also found the effect of the single text intervention to be inconclusive and suggest further steps for research on this approach of protection against deceptive visualizations. Higher levels of visual literacy also did not prove to be a good protection against these techniques, so we conclude that their detection is a specific skill that must be purposefully taught.