DISPLAY PROPERTIES AND EXPERTISE IN FINANCIAL UIs

Abstract

Financial traders usually interact with high amount of data visualized on several displays. The display properties of their systems as well as their previous experience are expected to have an influence on the quality of their interaction and the resulting financial decisions. However, to date, little empirical evidence is available addressing financial user interfaces. Research in human factors with professionals from data-rich domains has shown that display clutter can degrade user performance, lead to confusion, and influence the distribution of visual attention. Furthermore, previous findings indicate that the impact of display clutter varies depending on the expertise of the system user. This dissertation presents four papers investigating how display clutter and expertise can have an impact on visual attention and financial judgment performance.

The first paper approaches display clutter theoretically in connection with the concept of user experience, and lays out how display clutter can influence the user experience. The second paper investigates main effects and the interaction effect of display clutter and expertise in a controlled two-by-two experiment. It shows that not only expertise, but also the combination of expertise and display clutter have an effect on judgment performance as well as the visual attention control. The third manuscript confirms the results from paper two with more ecologically valid stimuli and explores the impact of display clutter on two different financial tasks, risk judgment performance and investment decisions. It shows that the type of task has an influence on the consistency, concordance as well as confidence of risk judgments and investment decisions; the visual attention measures, however, are not affected. In the fourth manuscript the focus lies on the influence of expertise on risk judgment performance in relation to judgment confidence. The results show confidence differences between experts and novices, despite similar judgment performances.