Impact of data visualization on individual rational decisions

M. Midori Sugihara [a,1], Ainoa Abella [b], Jonathan Chacón [b], Tomiya Kimura [a], Toma Testuya [a], and Vanja Čok [c]
[a]*Keio University*
[b]*Elisava Barcelona School of Design and Engineering (UVIC-UCC),*
[c] *University of Ljubljana*

Abstract. With the proliferation of information systems and technology, people are required to explore data, gather information, and make choices to solve problems for rational decision making in an environment where vast amounts of data are being generated daily. In today's information age, data visualization is said to help users understand patterns, trends, and correlations in data and support data-based decision making. On the other hand, however, it is said that there are few studies have quantitatively measured the extent to which data visualization supports human decision making the paucity of studies using decision-making tasks has been noted. Therefore, we used a case study to examine whether data visualization improves decision-making performance, especially in decision making with uncertainty in management. Participants of this case study attended business school and received training in managerial decision making. They were asked to make decisions to run their businesses, each with an awareness of the competition, as in a real management scenario. The participants use the dashboard of visual representations of their businesses; another used the table. Based on the obtained results, we have studied the economic contribution of data visualization. Our study will not only show the quantitative extent of the contribution of data visualization to decision makers, but also provide useful insights on how data visualization can be used as a tool for decision makers and data analysts to work hand in hand for better decision making in organizations.

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[1] Corresponding Author, Mail: m.sugihara@keio.jp