

Team decision making considering uncertainty in data visualisation

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

Abstract. Information and data visualisation are powerful tools in order to present results and make decisions. In order to understand how data visualisation may change the group decision-making depending on the graphs seen by the participating members, we created a case study in two different contexts (Spain-Japan). In which, students have to make decisions to manage a small business. For example, to agree on how to run a bakery: total number of loaves to be made, the price at which it has to be sold, and the number of doughs to be made for the next day. Students will participate in a series of rounds where they are asked to: 1) write individually how they would run the business; 2) in groups they decide and discuss the different ideas and what decisions they make regarding the mentioned variables (price, loaves and doughs); 3) the teacher performs a simulation with the students' data and shows the results using tables; 4) Individually, write if what was done was different from what they proposed and explain what they had done differently. After completing some rounds, students are asked to participate again, but this time in step 3 they are given a graph instead of a table. In this way, we can see if there are significant differences when making decisions based on graphs or tables. In the light of the results, some design decisions and recommendations could be provided to teachers to improve decision making activities related to engineering education and new transdisciplinary fields.

Keywords. Group decision, Data interpretation, Decision making, Business case study

¹ Corresponding Author, Mail: aabella@elisava.net