Advanced data analysis for the design of a personalized sports app
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Abstract

For the design of a mobile sports application it is important to tailor the app to the user. This thesis has two major purposes: (1) to discover distinctive groups within participants of the Dam tot Dam loop 2014 regarding their preferences of mobile sports apps. (2) To investigate in which characteristics these groups differ significantly. To accomplish these tasks, the K-means clustering algorithm was applied on the answers to 20 questions referring to various app features answered by participants which indicated that they utilize apps during their training. Additionally, principal component analysis was conducted in order to gain insight on which of the proposed app features caused most variance and which features the participants agreed on. The results show that two groups can be defined which have considerably different preferences. One of which is mainly interested in tracking speed during their training and to keep track of their progress after. This group consists predominantly of males and a significantly higher percentage of participants of the 16km run (79.3% over 20.7% 6.4km). On the contrary, a group of predominantly women with a lower percentage 16km (59.2% over 40.8% 6.4km) participants was discovered. This group considered each of the proposed features relatively important, including features with a advisory or motivational role. Other significant differences were found between these groups including characteristics with respect to motivation and self perceived health.