

Use of a Business Intelligence Software for Interactive Visualization of Data on the Swiss Elite Sports System

Authors : Corinne Zurmuehle, Andreas Christoph Weber

Abstract : In 2019, the Swiss Federal Institute of Sport Magglingen (SFISM) conducted a mixed-methods study on the Swiss elite sports system, which yielded a large quantity of research data. In a quantitative online survey, 1151 elite sports athletes, 542 coaches, and 102 Performance Directors of national sports federations (NF) have submitted their perceptions of the national support measures of the Swiss elite sports system. These data provide an essential database for the further development of the Swiss elite sports system. The results were published in a report presenting the results divided into 40 Olympic summer and 14 winter sports (Olympic classification). The authors of this paper assume that, in practice, this division is too unspecific to assess where further measures would be needed. The aim of this paper is to find appropriate parameters for data visualization in order to identify disparities in sports promotion that allow an assessment of where further interventions by Swiss Olympic (NF umbrella organization) are required. Method: First, the variable 'salary earned from sport' was defined as a variable to measure the impact of elite sports promotion. This variable was chosen as a measure as it represents an important indicator for the professionalization of elite athletes and therefore reflects national level sports promotion measures applied by Swiss Olympic. Afterwards, the variable salary was tested with regard to the correlation between Olympic classification [a], calculating the Eta coefficient. To estimate the appropriate parameters for data visualization, the correlation between salary and four further parameters was analyzed by calculating the Eta coefficient: [a] sport; [b] prioritization (from 1 to 5) of the sports by Swiss Olympic; [c] gender; [d] employment level in sports. Results & Discussion: The analyses reveal a very small correlation between salary and Olympic classification ($\eta^2 = .011$, $p = .005$). Gender demonstrates an even small correlation ($\eta^2 = .006$, $p = .014$). The parameter prioritization was correlating with small effect ($\eta^2 = .017$, $p = .001$) as did employment level ($\eta^2 = .028$, $p < .001$). The highest correlation was identified by the parameter sport with a moderate effect ($\eta^2 = .075$, $p = .047$). The analyses show that the disparities in sports promotion cannot be determined by a particular parameter but presumably explained by a combination of several parameters. We argue that the possibility of combining parameters for data visualization should be enabled when the analysis is provided to Swiss Olympic for further strategic decision-making. However, the inclusion of multiple parameters massively multiplies the number of graphs and is therefore not suitable for practical use. Therefore, we suggest to apply interactive dashboards for data visualization using Business Intelligence Software. Practical & Theoretical Contribution: This contribution provides the first attempt to use Business Intelligence Software for strategic decision-making in national level sports regarding the prioritization of national resources for sports and athletes. This allows to set specific parameters with a significant effect as filters. By using filters, parameters can be combined and compared against each other and set individually for each strategic decision.

Keywords : data visualization, business intelligence, Swiss elite sports system, strategic decision-making

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