

#### Case 4. Theory and objectives

The aim of this exercise is to gather empirical evidence in support of the unidimensionality of the items in the Subjective Vitality Scale (SVS; Ryan & Frederick, 1997; Spanish adaptation by Molina-García, Castillo & Pablos, 2007) presented in Case 2, and estimate the internal consistency reliability of the total scores of SVS. Again, the total scores are obtained as the mean of the responses of each individual over all items.

As it can be seen, the scale and the objectives are the same as in Case 2. The theoretical background is also the same: We think that the six items will conform with a unidimensional scale with no other restrictions. In order to facilitate the access to their content, the items are reproduced in Table 1. More details on the SVS scale can be found in the document “Case 2. Theory and objectives”.

The data set Case4.txt contains the simulated responses of 600 independent participants who voluntarily would have responded to SVS using a five-points Likert scale, where a high value express high subjective vitality.

In the present exercise, the item response distributions show clear ceiling effects. This would be the case, for instance, if the 600 participants came from a human group characterized by a very high subjective vitality. Other possible explanations for the observed ceiling effects could be the presence of response biases such as social desirability or acquiescence.

In this exercise we propose analytical solutions for this type of data. Nevertheless, it should be kept in mind that statistical results do not provide evidence on the real or biased origin of the ceiling effects and that, as a rule, we prefer item response distributions showing more balanced response options.

Table 1. Items from the SVS to be analysed in Case 4

Item	Content
Y1	I feel alive and vital.
Y2	Sometimes I am so alive I just want to burst.
Y3	I have energy and spirit.
Y4	I look forward to each new day.
Y5	I nearly always feel awake and alert.
Y6	I feel energized.

#### References

- Molina-García, J., Castillo, I., & Pablos, C. (2007). Bienestar psicológico y práctica deportiva en universitarios [Psychological well-being and sport practice in university students]. *Motricidad. European Journal of Human Movement*, 18, 79-91.
- Ryan, R.M., & Frederick, C. (1997). On energy, personality and health: Subjective vitality as a dynamic reflection of well-being. *Journal of Personality*, 65, 529-565.