

Link to perseverance questionnaire: cpp.sh/3blb

Click 'Run' to run questionnaire program. Answer 'yes' or 'no' to questions in box at bottom of screen

Literature basis:

Lucas, G. M., Gratch, J., Cheng, L., & Marsella, S. (2015). When the going gets tough: Grit predicts costly perseverance. *Journal of Research in Personality*, 59, 15-22.

From grit, we deduced the response categories of motivation, self-efficacy, and class attendance (since we are making the questionnaire specifically for students).

Research Project Idea and Motivation on Reliability and Validity:

In order to test the reliability and validity of our instrument, it is best to have students as samples, because they are whom the questions are mainly directed to.

In order to test the reliability of the instrument, there should be a large sample size (the larger the better), in which the respondents were chosen at random.

To measure the reliability of the questionnaire, different approaches can be taken. Given the short nature of it, some reliability measures would be inefficient. However, the questionnaire is targeted at students within a time span of one semester. Knowing this, the test-retest reliability measure can be used to gain some insights into the reliability of the questionnaire. The time span of one semester should allow the same questionnaire to be given to the students at different times within the semester. For example, the questionnaire could be given to the same large sample of students at the beginning of the semester, at the middle of the semester, and at the end of it. Comparing the results between the same individuals at different points in time should give an idea of the reliability of the test. However, one limitation of this is that the questionnaire is measuring perseverance in terms of motivation, grades and class participation, which are all factors that may change over time in the course of the semester. To fix this, in the case that the test results become completely unreliable after measuring it over a one semester span, the time span can be shortened to the course of a quartile or of a month.

Another way the reliability of the test can be estimated is to compare results using the interrater reliability test. Because, according to the theory used, motivation, class participation and grades are all related; the sample picked could be people that score the same results in grades (which is a very specific measure as people are asked to fill in their average grade) and their results can be compared in the other set of questions.

In order to test for construct validity, the samples should perform two different questionnaires, one being the instrument and another a validated questionnaire that also tests perseverance. These scores should be compared for all samples. With statistics, it will then be possible to tell if

the instrument is comparable to a validated questionnaire. If so, then the instrument passes the test for construct validity.

Another way validity could be checked is to give the respondents the questionnaire. After completing it, the respondents should be given a test and told that they failed. They then should be given the option to attempt a similar test again. If they choose the option of attempting the test again, they should score on the higher half of the instrument, while if they choose to give up, they should score on the lower half of the instrument. See if this coincides with the sample. This should tell whether perseverance is being measured or not.

Because the questionnaire measures something that could be linked to social desirability, the fact that respondents may answer to our questionnaire in a socially desirable way should be considered. This could be done by measuring the social desirability of the questionnaire's questions and then take it into account when doing the responses' statistical analysis. Another way would be to rephrase the questions in a way that social desirability does not increase responses of defensiveness in the students. This however turned out to be very difficult while thinking of questions to measure our construct.