Questions:

- Is there any literature you could share on the five-point test?
  - I looked whether I could find a review article on the test, however, I primarily found research papers on it. Lex wrote a brief description- I hope that this helps as a starting point: The Five point test (FPT), also known as the Design Fluency Test, is a cognitive assessment tool that measures an individual's ability to generate as many different/novel designs as possible within a certain amount of time, using a limited set of shapes and lines. The FPT has been used in research to investigate various aspects of cognitive functioning, such as executive functioning (such as strategy use), working memory, and creative thinking. The advantage is that it is a standardized measure: The FPT has a standardized administration protocol and scoring system, which potentially increases e.g., the reliability of the test administration. Based on research, the FPT is believed to be able to detect subtle cognitive changes within and differences in cognitive functioning among individuals. Also, given the fact that the instruction is relatively easy, it can be used across different populations, including children, adults, and older adults, making it a versatile tool.

- Why did you choose this five-point test and not another test for figural fluency?
  - This is a good question. There are several alternative versions or modifications of so-called design fluency tests- in which a person has to draw as many drawings as

possible within a specific time interval. There are two types of design fluency tests: so-called freeform conditions (in which there are no rules regarding what the drawings should like) and there are so-called constrained drawings conditions, where there are rules installed. The five-point test (FPT) is a constrained drawing condition. Compared to freeform conditions, the FPT (or any constrained drawing subtest) exhibits a more structured pattern, offers ease of completion and scoring, and enables the assessment of complex cognitive functions (called executive functions) with reduced reliance on visuo-constructive and visual-motor skills. Also, we thought that it is easier to administer on a computer. That is why we opted for a constrained drawing subtest. Why did we choose the FPT then? That is a bit arbitrary. There are many alternatives described in the literature, such as the Modified Five-Point Test (MFPT) and the Ruff figural fluency test. However, we had already some experience with (and published on) the FPT. We were also interested in the strategies that this test prompts individuals to employ. We hypothesized that the symmetric placement of dots in the FPT, as opposed to the asymmetric placement in some other tests, may encourage the use of strategies like rotation, especially among young individuals. But this is just a hypothesis.

- Why did you choose to give the participants 3 minutes?
  - Different versions of the FPT use different time intervals. Some of them use 90 seconds intervals, other e.g., 3 minutes. This is an arbitrary choice, but we wanted to ensure we obtained enough data points (i.e., that the participants had enough time to construct many unique drawings). To do

so, we believe that participants had to be given enough time to think of new drawings and e.g., strategies. That is why we opted for the longer interval.

- What is the age range of the participants?
  - We administrated this test among students at secondary school in Limburg who are in grade 3 and therefore typically 15 years of age.

Data understanding
Domain understanding
combo Domain Data

Further Research
Reason why test

Instruction five point test data

Introduction

The Five point test (FPT), also known as the Design Fluency Test, is a cognitive assessment tool that measures an individual's ability to generate as many different/novel designs as possible within a certain amount of time, using a limited set of shapes and lines. The FPT has been used in research to investigate various aspects of cognitive functioning, such as executive functioning (such as strategy use), working memory, and creative thinking. The advantage is that it is a standardized measure: The FPT has a standardized administration protocol and scoring system, which potentially increases e.g., the reliability of the test administration. Based on research, the FPT is believed to be able to detect subtle cognitive changes within and differences in cognitive functioning among individuals. Also, given the fact that the instruction is relatively easy, it can be used across different populations, including children, adults, and older adults, making it a versatile tool.

The traditional scoring is to give participants within a limited time interval (e.g., 90 seconds or in our case 180 seconds) and then count all unique patterns and subtract the number of doubles.

We administrated this test among students at secondary school in Limburg who are in grade 3 and therefore typically 15 years of age. Although the test is traditionally administered on paper, we developed an online version of the FPT. This allows us to measure e.g., reaction times more precisely.

Variables in main file (Ozdb_fivepoints_vo3_2019-2020_vo4_2020-2021.csv)

primary counts the order in which submitted patterns entered the server.

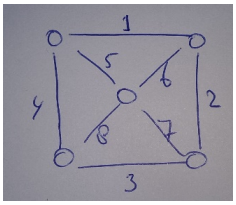
idll_vo3lv is the student identifier, so best is to sort first on idll_vo3lv and than on primary, to get the input student by student for each of them on the right order.

name is the type of data that is stored and value the content of this data

timestamp is the time this data was stored

name can be:

patternsm: The submitted pattern, giving a 1 for each line that is drawn and 0 for each line that is not drawn when submitting the figure. This is the numbering of the lines:



timestampsm: how many milliseconds after the page was retrieved did the student submit the pattern
statuscl: For each click was it an on- or an off-click
numbercl: In what order have the lines been clicked (in theory statuscl can be derived from this. The first time a line is clicked it should be on, the second time it should be an off, …).
timestampcl: gives for each click the unix time stamp
timestampload: Gives thes unix time stamp for the moment the page was loaded. Timestampload + timestampload = the time the page was submitted

Original set up
The original set-up can be seen (in Dutch) at inventaar.nl/vragenlijst
You need a password to enter, that can be used once. We will provide some passwords.

Timing
We used a time limit of 180 seconds. Usually, participants get 90 seconds for completing this test. In the data set, you'll find that sometimes people continued slightly longer than 180 seconds. You can take out all the responses after 180 seconds, but also use shorter time spans.
In some other cases, the timing does not make sense. These problems could result from problems with the script in the web page running well in the local environment or because respondents used the forward and back buttons of the browser. If timing is important, the best approach is not to use very long spells.

Big 5 data
The file big5.csv contains the responses of participants on a Big 5 personality test. The theory of the Big 5 distinguishes five personality traits: Openness, Conscientiousness, Extraversion, Agreeableness, and Emotional stability (for more information, see e.g., https://en.wikipedia.org/wiki/Big_Five_personality_traits). For each traits, several statements are given to the student (items) asking to participant to state to which extent this applies to him. These responses are then together form a score for each trait. This is the stata code that generated the five factors, so you can see which questions belong to which trait:

alpha karak2_vo3lv karak87_vo3lv karak89_vo3lv karak5_vo3lv karak94_vo3lv karak2b_vo3lv, gen(open) item std
alpha karak6_vo3lv karak8_vo3lv karak7_vo3lv karak10b_vo3lv karak95_vo3lv karak98_vo3lv, gen(cons) item std
alpha karak12_vo3lv karak88b_vo3lv karak11b_vo3lv karak53b_vo3lv karak96_vo3lv, gen(extra) item std
alpha karak50_vo3lv karak16_vo3lv karak15_vo3lv karak93_vo3lv karak16b_vo3lv, gen(agree) item std
alpha karak92_vo3lv karak20_vo3lv karak19_vo3lv karak90_vo3lv karak97_vo3lv, gen(neur) item std

These are the items (in Dutch):

karak2_vo3lv double %12.0g Ik barst van de ideeën
karak6_vo3lv double %12.0g Ik doe klusjes meteen
karak12_vo3lv double %12.0g Ik ben stil in een groep van vreemden
karak50_vo3lv double %12.0g Ik leef mee met anderen
karak92_vo3lv double %12.0g Ik stel andere kinderen op hun gemak
karak87_vo3lv double %12.0g Ik zoek graag allerlei informatie bij elkaar
karak8_vo3lv double %12.0g Ik houd me altijd aan afspraken
karak88b_vo3lv double %12.0g Ik vind het leuk om het middelpunt van de belangstelling te zijn
karak16_vo3lv double %12.0g Ik ben geïnteresseerd in anderen
karak20_vo3lv double %12.0g Ik ben snel gestrest
karak89_vo3lv double %12.0g Ik denk lang over dingen na
karak7_vo3lv double %12.0g Ik laat mijn spullen slingeren
karak11b_vo3lv double %12.0g Ik praat niet veel
karak15_vo3lv double %12.0g Ik probeer mensen te helpen
karak19_vo3lv double %12.0g Ik raak makkelijk van streek
karak5_vo3lv double %12.0g Ik heb een grote woordenschat
karak10b_vo3lv double %12.0g Ik ben netjes en precies als ik iets moet doen
karak53b_vo3lv double %12.0g Ik begin gesprekken met anderen

karak93_vo3lv double %12.0g Ik begrijp vaak hoe anderen zich voelen
karak90_vo3lv double %12.0g Ik denk vaak dat iets misgaat of fout afloopt
karak94_vo3lv double %12.0g Ik ben geïnteresseerd in moeilijke ideeën
karak95_vo3lv double %12.0g Ik ben altijd goed voorbereid
karak96_vo3lv double %12.0g Ik praat met veel verschillende kinderen op feesten
karak16b_vo3lv double %12.0g Ik ben niet echt geïnteresseerd in anderen
karak97_vo3lv double %12.0g Ik ben snel boos
karak2b_vo3lv double %12.0g Ik heb heel goede ideeën
karak98_vo3lv double %12.0g Ik maak er vaak een puinhoop van

Test at primary school

The file eindtoets.csv contains the scores of students at the test they took at the end of primary education. Schools can take several tests. This file only contains the version by CITO. Furthermore, we only have this information for a part of Limburg. Therefore, there are substantially fewer observation than we have in the Five Points Test. The main score, which is calculated as a weighed combination of the subscales, ranges from 500 to 550 for students. There are also scores for three subscales: i.e., for language (8000), [illegible] (8001), and knowledge about the world (wereldorientatie) (8002), with both the number and percentage of right answers.

math