PSI Additional Data for Dimension Reduction

Important Notes

Note1: The following data has been synthesised. It is not related to the original students. It has been incorporated for the purposes of this CA only.

Note2: You do not need to use this dataset if you feel there are variables in the original which you feel you can use to demonstrate dimension reduction.

Overview of additional data included in the dataset

The results each student achieved on a 50-item IPIP Big-Five personality inventory has been included. The Big Five personality factors are as follows:

- Openness: characterized by originality, curiosity, and ingenuity. Sometimes referred to as Culture because of its emphasis on intellectualism, polish, and independence of mind. Sometimes referred to as Intellect because of its emphasis on intelligence, sophistication, and reflection.
- Conscientiousness: characterized by orderliness, responsibility, and dependability. Sometimes referred to as Dependability.
- Extraversion is characterized by talkativeness, assertiveness, and energy. Sometimes referred to as Surgency.
- Agreeableness is characterized by good-naturedness, cooperativeness, and trust. Can also be seen as a combination of friendliness and compliance.
- Neuroticism/Emotional Stability is characterized by likelihood to be upset and is the polar opposite of emotional stability. Sometimes scored in the opposite direction and referred to as Emotional Stability.

The IPIP items were administered using a 5-point, Likert-type scale ranging from 1 (disagree) to 5 (agree) as in the original instrument. This has resulted in 50 extra variables being added for each row. Each variable represents the student's answer from 1 to 5 for each question or 0 if the question was not answered. The questionnaire is described in more detail later in this document.

If you wish to try the questionnaire yourself, you can do so at https://openpsychometrics.org/tests/IPIP-BFFM/.

If you wish to choose Option B for the assignment, then you need to conduct a dimension reduction on **some** of these 50 variables. You need a theory about which variables contribute to which of the big five personality factors. The internal consistency of the IPIP 50 item inventory has been shown to achieve a reliability level (Cronbach α) reported by are between 0.79 to 0.87[1].

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[1] Goldberg LR, Johnson JA, Eber HW, et al. The international personality item pool and the future of public-domain personality measures. J Res Pers 2006;40:84-96

The IPIP Big-Five 50 item Questionnaire

The questionnaire used consisted of 10 items for each of the Big-Five personality factors: Extraversion (E), Agreeableness (A), Conscientiousness (C), Neuroticism (N), and Openness (O). Students were asked to rate the following items on a five point scale where 1=Disagree, 3=Neutral, 5=Agree (0=missed).

E1 I am the life of the party. E2 I don't talk a lot. E3 I feel comfortable around people. E4 I keep in the background. E5 I start conversations. E6 I have little to say. E7 I talk to a lot of different people at parties. E8 I don't like to draw attention to myself. E9 I don't mind being the center of attention. E10 I am quiet around strangers.	N1 I get stressed out easily. N2 I am relaxed most of the time. N3 I worry about things. N4 I seldom feel blue. N5 I am easily disturbed. N6 I get upset easily. N7 I change my mood a lot. N8 I have frequent mood swings. N9 I get irritated easily. N10 I often feel blue.	O1 I have a rich vocabulary. O2 I have difficulty understanding abstract ideas. O3 I have a vivid imagination. O4 I am not interested in abstract ideas. O5 I have excellent ideas. O6 I do not have a good imagination. O7 I am quick to understand things. O8 I use difficult words. O9 I spend time reflecting on things. O10 I am full of ideas.
A1 I feel little concern for others. A2 I am interested in people. A3 I insult people. A4 I sympathize with others' feelings. A5 I am not interested in other people's problems. A6 I have a soft heart. A7 I am not really interested in others. A8 I take time out for others. A9 I feel others' emotions. A10 I make people feel at ease.	C1 I am always prepared. C2 I leave my belongings around. C3 I pay attention to details. C4 I make a mess of things. C5 I get chores done right away. C6 I often forget to put things back in their proper place. C7 I like order. C8 I shirk my duties. C9 I follow a schedule. C10 I am exacting in my work.	

Details of which questions map onto which of the five personality factors are shown in the following table:

Personality Factor	Directly Scored Items	Reverse-Scored Items
Extraversion	• Am the life of the party. • Feel comfortable around people. • Start conversations. • Talk to a lot of people at parties. • Don't mind being center of attention.	• Don't talk a lot. • Stay in the background. • Have little to say. • Don't like to draw attention to myself. • Am quiet around strangers.
Agreeableness	• Am interested in people. • Sympathize with others' feelings. • Have a soft heart. • Take time out for others. • Feel others' emotions. • Make people feel at ease.	• Feel little concern for others. • Insult people. • Am not really interested in others. • Am not interested in other people's problems.
Emotional Stability **Neuroticism**	• Am relaxed most of the time. • Seldom feel blue.	• Get stressed out easily. • Worry about things. • Am easily disturbed. • Get upset easily. • Change my mood a lot. • Have frequent mood swings. • Get irritated easily. • Often feel blue.
Conscientiousness	• Am always prepared. • Pay attention to details. • Get chores done right away. • Like order. • Follow a schedule. • Am exacting in my work.	• Leave my belongings around. • Make a mess of things. • Avoid doing my duties. • Often forget to put things back in their proper places.
Openness	• Have a rich vocabulary. • Have a vivid imagination. • Have excellent ideas. • Am quick to understand things. • Use difficult words. • Spend time reflecting on things. • Am full of ideas.	• Am not interested in abstract ideas. • Do not have a good imagination. • Have difficulty understanding abstract ideas.