

Anne Hilger^a, Arnaud Natal^b

How to handle personality traits and cognitive skills variables in the NEEMISIS-1 (2016-17) survey wave?

Abstract: This short note aims to provide the key to handling the personality traits and cognitive skills variables in the NEEMISIS-1 (2016-17) survey wave. After a brief description of the data collected in ten villages in rural South India, this note provides the details needed to link the questions to the Big-5 traits and gives the correct answer to the Raven matrix test.

Keywords: India, Big-5, skills, methodology

^aWorld Bank.

^barnaud.natal@u-bordeaux.fr. ORCID: 0000-0003-1301-2281. Univ. Bordeaux, and IFP

Data

NEEMSIS-1 (2016-17) was the second wave of a longitudinal data collection project. It covered a mostly agricultural area on the border between Viluppuram and Cuddalore districts, which include two industrial towns (Neyveli and Cuddalore) and a regional business center (Panruti). The region was selected because it exhibits several key tendencies in the State: strong diversification of rural activities, the rise of rural trade centers and some degree of industrialisation, and various forms of agrarian transition, spanning from peri-urbanised villages, and villages that remain largely agricultural. The 2010 first wave randomly selected 405 households in 10 villages (from 175 to 500 households in size), using a stratified sampling framework based on land characteristics, proximity to small towns (Panruti, Viluppuram, Cuddalore), and caste. Half of villages are irrigated, the other half have dry lands; within villages, half of the sample was selected from the mostly upper- and middle-caste Ur part of the village, and the other half from the Colony part, where Dalits mainly live.

The NEEMSIS consists of comprehensive household and individual level modules, completed by the household head, and a randomly chosen younger member of the household (older than 18 and younger than 35). The total sample size of the individual survey is 953 individuals. This individual-level survey provides more detailed information on labor force participation, labor outcomes, and social networks, alongside a cognitive skills and personality traits assessment (Raven's Colored Progressive Matrices, literacy, numeracy, and a Big-5 questionnaire).

Personality traits questions

Our module on Big-Five personality traits consists of a set of 35 questions with seven questions for each trait following O. P. John and Srivastava long inventory. The Big-5 model constitutes the central personality trait taxonomy in psychology. Based on the work of Goldberg and McCrae and Costa, the Big-5 model identifies five dimensions of personality: emotional stability (ability to feel stable and balanced emotions); extraversion (tendency to seek stimulation and company from others); openness to experience (capacity to be creative and unstructured); agreeableness (perceptions of others that are caring, compassionate, and altruistic); conscientiousness (capacity to display self-discipline, act dutifully, and strive for achievement against measures or outside expectations).

Six more questions allow us to measure the Grit, which is the individual's perseverance of effort combined with the passion for a particular long-term goal or end state.

Here is the correspondence table between questions and personality traits.

n	Item	Question	Trait
1	curious	Are you curious, interested in learning new things?	Openness
2	interestbyart	Are you interested in nature, art or music?	Openness
3	repetitivetasks	Do you prefer work that involves repetitive tasks and routines?	Openness
4	inventive	Are you inventive, and discover new ways of doing things?	Openness
5	liketothink	Do you like to think a lot, and reflect about ideas?	Openness
6	newideas	Do you come up with original or new ideas?	Openness
7	activeimagination	Do you have an active imagination?	Openness
8	organized	Are you organized?	Conscientiousness
9	makeplans	Do you make plans and stick to them?	Conscientiousness
10	workhard	Do you work hard to do things well and on time?	Conscientiousness
11	appointmentontime	Do you get to work and appointments on time?	Conscientiousness
12	putoffduties	Do you put off your duties in order to relax?	Conscientiousness
13	easilydistracted	Do you get easily distracted?	Conscientiousness
14	completeduties	Do you complete your duties on time?	Conscientiousness
15	enjoypeople	Do you enjoy being with people?	Extraversion

16	sharefeelings	Do you easily share your thoughts and feelings with other people?	Extraversion
17	shywithpeople	Are you shy with people?	Extraversion
18	enthusiastic	Are you enthusiastic and full of energy?	Extraversion
19	talktomanypeople	In social gatherings, do you like to talk to many people?	Extraversion
20	talkative	Are you talkative?	Extraversion
21	expressedthoughts	Are you comfortable expressing your thoughts and opinions to others?	Extraversion
22	workwithother	Do you work well with other people?	Agreeableness
23	understandotherfeeling	Do you try to understand how other people feel and think?	Agreeableness
24	trustingofother	Are you generally trusting of other people?	Agreeableness
25	rudetooother	Do you tend to be rude to other people?	Agreeableness
26	toleratefaults	Do you tolerate faults in other people?	Agreeableness
27	forgiveother	Do you forgive other people easily?	Agreeableness
28	helpfulwithothers	Are you helpful with others?	Agreeableness
29	managestress	Do you manage stress well?	Emotional stability
30	nervous	Do you get nervous easily?	Emotional stability
31	changemood	Do you have sudden changes in your mood?	Emotional stability
32	feeldepressed	Do you feel sad, depressed?	Emotional stability
33	easilyupset	Do you get easily upset?	Emotional stability

34	worryalot	Do you worry a lot?	Emotional stability
35	staycalm	Do you stay calm in tense or stressful situations?	Emotional stability
36	tryhard	Do you try very hard even after making mistakes?	Grit
37	stickwithgoals	Do you stick to your goals despite obstacles and setbacks?	Grit
38	goaftergoal	Do you go after a goal, even if it takes a year or more to reach?	Grit
39	finishwhatbegin	Do you finish whatever you begin?	Grit
40	finishtasks	Do you finish your tasks, even if they take a long time to complete?	Grit
41	keepworking	Do you keep working very hard even when you feel like quitting?	Grit

Individuals respond on a Likert scale from “1 – Almost never” to “5 – Almost always” for the 41 affirmative questions.

Seven questions are reversely coded. They are supposed to be the opposite of seven other questions. It allows us to measure the acquiescence bias through the acquiescence score, which is the tendency to answer more in one direction (agree or disagree) over the other.

Here is the couple of reverse coded questions:

1. rudetooother AND helpfulwithothers
2. putoffduties AND completeduties
3. easilydistracted AND makeplans
4. shywithpeople AND talktomanypeople
5. repetitivetasks AND curious
6. nervous AND staycalm
7. worryalot AND managestress

Raven progressive matrices

Raven progressive matrices capture concepts of fluid intelligence, which is the rate at which people learn.

Here are correct answers to each matrix:

Set A	Set Ab	Set B
a1 = 4	ab1 = 4	b1 = 2
a2 = 5	ab2 = 5	b2 = 6
a3 = 1	ab3 = 1	b3 = 1
a4 = 2	ab4 = 6	b4 = 2
a5 = 6	ab5 = 2	b5 = 1
a6 = 3	ab6 = 1	b6 = 3
a7 = 6	ab7 = 3	b7 = 5
a8 = 2	ab8 = 4	b8 = 6
a9 = 1	ab9 = 6	b9 = 4
a10 = 3	ab10 = 3	b10 = 3
a11 = 4	ab11 = 5	b11 = 4
a12 = 5	ab12 = 2	b12 = 5

From several items to key variables

To see in detail how to construct Big-5 personality trait variables and cognitive skills variables, see:

- Natal, A., & Nordman, C. J. (2023). A Change is Gonna Come: Measures and Stability of Personality Traits in Rural South India.
- Natal, A., & Nordman, C. J. (2023). Psychology of Debt in Rural South India.