Leader Mental Toughness Project

Data Explanation for SP17, FL17, & SP18

* General notes
  + I went through all scales from all semesters in the SP18 semester to make sure that the info below is correct, particularly concerning the different scales/anchored used across all 3 semesters. I should rely on this document for reporting purposes when writing up analyses and different scales.
  + The variable names for reversed items contain an R at the end in *most* cases (I forgot to do this in some, as explained in R code)
  + Should impossibly quick responses be removed?
    - The cumulative time spent on the survey [cumTime] for one respondent was 411 sec, which is just under 7 minutes. I don't think it would be possible to read and respond to all questions in 7 minutes.
    - Should 15 or 20 min be set as a minimum amount of time spent on the survey?
* **Key difference between surveys:**
  + In the SP17 and FL17 semesters, items were grouped by scale and the scales were ordered in a manner that attempted to spread out scales so that respondents didn't feel like they were responding to the same scale over and over again.
  + In SP18, items were blocked into three general groups and randomly ordered within those blocks.
    - The logic for randomizing items was to decrease any ordering effects that might occur with scales being separated, and also to decrease the likelihood that items occurring next to each other sound the same and thus are likely to result in mindless responding with the same response.
      * Prediction: I predict that this will decrease the internal reliability of scales to some degree, but only because such internal reliabilities are artificially high when all similar items are grouped together in a survey.
    - \*In addition, only one item was shown on the screen at a time in order to slow participants down a bit and to decrease automatic responding with the same answer.
    - The logic for the block ordering was based on other research (I have citation somewhere…) that put outcome variables before their predictors in the survey in order to minimize any exaggeration effects that might occur from participants seeing and being primed by the predictor items before seeing the outcome items.
    - The first block included the leadership scales where all used the same 3rd person formatting; block came first because these are primary outcome variables
    - The second block included big five inventory and leadership non-resistance. The leadership non-resistance items were put here because these are expected to result from everyday non-resistance (e.g., UH, DIS) and so the leadership non-resistance items were answered before these other scales. The BFI was included here just to provide items with which to mix the leadership non-resistance items.
    - The third block included all remaining scales, all of which had a self-report format. In addition, all of these scales had a general, non-leadership focus (participants were told this in survey itself).
* Demographics:
  + gender: 1 = male; 2 = female
  + gradYr: Year they'll be graduating
* Scales and individual items:
  + formalExp – How many formal leadership positions
    - SP17 & FL17: 0-4 (none at all – very many)
    - SP18: 1-5 (never, once, twice, three times, four or more times)
  + informalExp – How many informal leadership positions
    - SP17 & FL17: 0-4 (none at all – very many)
    - SP18: 1-5 (never, once, twice, three times, four or more times)
  + VMIbenefits
    - SP17: 0-4 (not at all – very much)
    - FL17 and SP18 data doesn't contain this variable
  + VMItrain\_1-4: VMI Training Benefits
    - Instead of VMIbenefits (previous), which was a single-item question about how their leadership has benefitted from VMI training, the FL17 survey asked 4 items about how VMI training has benefitted their leadership.
    - 0-4 (Not at all – Very much)
    - SP18: 1-5 (Not at all – Very much)
  + uh\_1-20: Unconditional Happiness Scale
    - SP17 & FL17 range: 0-8 (never, rarely, sometimes, often, always [with a # between each])
    - SP18: 1-5 (never, sometimes, about half the time, most of the time, always)
    - single factor scale – all items averaged together.
    - No reverse-coded items.
    - This is a scale some colleagues and I have been validating for a while. Any scale reliability analysis that you can run on this would be great. See analysis section at end of hypothesis document.
    - New items that may form a physical discomfort subscale: uh\_4, 8, 12, 18, 22 [uh\_22 was missing in SP17 data]
    - The SP17 survey accidentally cut off the last 5 items. The FL17 survey contains all 25. So uh\_21-25 are only in FL17
  + ili\_1-15: Identity Leadership Inventory
    - essentially the same instructions and 3rd-person format for all 3 semesters.
    - range: 1-7 (strongly disagree – strongly agree)
    - No reverse-coded items
    - average for total identity leadership score
    - subscales:
      * prototypicality: ili\_1, ili\_5, ili\_9, ili\_13
      * champion: ili\_2, ili\_6, ili\_10, ili\_14
      * entrepreneur: ili\_3, ili\_7, ili\_11, ili\_15
      * embedder: ili\_4, ili\_8, ili\_12
  + bfi\_1-44: Big Five Inventory (Personality)
    - Range: 1-7 (strongly disagree – strongly agree)
      * Same all 3 semesters
    - There ARE reversed items, indicated by R – be sure to address this when using scores.
    - Subscales (average for scores):
      * Extraversion: bfi\_1, bfi\_6R, bfi\_11, bfi\_16, bfi\_21R, bfi\_26, bfi\_31R, bfi\_36
      * Agreeableness: bfi\_2R, bfi\_7, bfi\_12R, bfi\_17, bfi\_22, bfi\_27R, bfi\_32, bfi\_37R, bfi\_42
      * Conscientiousness: bfi\_3, bfi\_8R, bfi\_13, bfi\_18R, bfi\_23R, bfi\_28, bfi\_33, bfi\_38, bfi\_43R
      * Neuroticism: bfi\_4, bfi\_9R, bfi\_14, bfi\_19, bfi\_24R, bfi\_29, bfi\_34R, bfi\_39
      * Openness: bfi\_5, bfi\_10, bfi\_15, bfi\_20, bfi\_25, bfi\_30, bfi\_35R, bfi\_40, bfi\_41R, bfi\_44
  + ffmq\_1-15: Five Factor Mindfulness Questionnaire
    - SP17 & FL17 Range: 0 – 4 (Almost never, rarely, sometimes, often, Almost always)
    - SP18: 1-5 (never, sometimes, about half the time, most of the time, always)
    - Reversed items denoted by R
    - Subscales:
      * Observing: ffmq\_1, ffmq\_6, ffmq\_11
      * Describing: ffmq\_2, ffmq\_7R, ffmq\_12
      * Acting with awareness: ffmq\_3R, ffmq\_8R, ffmq\_13R
      * Nonjudging: ffmq\_4R, ffmq\_9R, ffmq\_14R
      * Nonreactivity: ffmq\_5, ffmq\_10, ffmq\_15
    - It looks like past research calculates the subscores and total scores by summing the items. To calculate the total score, they just sum across all items (see Baer et al., 2012, p. 758).
      * Previous study found that Observing subscale should not be included in total, so DO NOT include Observing subscale
    - For the present research, we're just focusing on "acting with awareness" subscale in analyses with all semesters
  + uh-vmi\_1-9: Unconditional Happiness Scale – VMI Version
    - SP17 & FL17 range: 0-8 (never, rarely, sometimes, often, always [with a # between each])
    - SP18: 1-5 (never, sometimes, about half the time, most of the time, always)
    - Single factor, average all items (no reverse-scored items)
    - This is a new scale, so any analyses that would get at its reliability would be good.
  + auth\_1-14: Authentic leadership scale
    - SP17, FL17, SP18 Scale range: 1 – 7 (strongly disagree – strongly agree)
    - Same scale format and instructions for all 3 semesters.
    - No reverse-scored items
    - The authors concluded that an overall authentic leadership score should not be calculated/used. Instead, the subscales should be treated as separate factors.
    - Subscales:
      * Self-Awareness: auth\_4, auth\_7, auth\_11
      * Relational Transparency: auth\_1, auth\_8, auth\_12
      * Internalized Moral Perspective: auth\_2, auth\_5, auth\_9, auth\_13
      * Balanced Processing: auth\_3, auth\_6, auth\_10, auth\_14
  + grt\_1-8: Grit
    - SP17, FL17, & SP18 scale range: 1 – 5 (Not like me at all – Very much like me)
    - Single factor
    - reversed items: grt\_1, grt\_3, grt\_5, grt\_6 (Note that these reversed items don't have the R at the end, but should be reversed)
  + leadChal\_1-13: Leading through Challenge Scale ("Leader Toughness Scale")
    - SP17, FL17, & SP18 scale range: 1 – 7 (strongly disagree – strongly agree)
    - SP18: Different scale instructions and format. Now uses 3rd person wording that was used for other leadership scales (ALI, TFL, and ILI)
    - No reversed items
    - Subscales:
      * Embracing: leadChal\_2, leadChal\_5, leadChal\_8, leadChal\_11
      * Functioning: leadChal\_1, leadChal\_4, leadChal\_7, leadChal\_10, leadChal\_13
      * Perseverance: leadChal\_3, leadChal\_6, leadChal\_9, leadChal\_12
    - If factor analysis supports this factor structure, calculate total score accordingly.
  + chalFreq: Number of times you've led groups of people in challenging situations.
    - SP17 & FL17 Responses:
      * 0 = Never
      * 1 = Once
      * 2 = Twice
      * 3 = Three times
      * 4 = 4 or more times
    - SP18 Responses:
      * 1 = Never
      * 2 = Once
      * 3 = Twice
      * 4 = Three times
      * 5 = 4 or more times
  + sc-hw\_1R-10R: State Self-Control Capacity Scale (short 10-item version, see "State Self-Regulation & Scoring.pdf doc")
    - High score = high self-control and low ego-depletion (low cognitive fatigue)
    - SP17 & FL17 Scale range: 0 – 8 (never, rarely, sometimes, often, always [with a # between each])
    - SP18: 1-5 (never, sometimes, about half the time, most of the time, always)
    - Reversed items: ALL items reversed EXCEPT sc-hw\_4 & sc-hw\_8
  + dis\_1-6: Discomfort Intolerance Scale
    - SP17 & FL 17 Scale range: 1 – 9 (Not at all like me – Extremely like me)
    - SP18 range: 1-5 (Not at all like me – Extremely like me) – scale anchors are same in this semester, but without the empty numbers in between
    - Note that this scale measures discomfort INtolerance, so higher scores mean you are MORE INTOLERANT (i.e., less tolerant).
    - ~~There are reversed items: 1, 2, & 4~~ (my online survey numbered the items differently, hence the incorrect numbering)
      * SP18: I left the incorrect placement of the R in variables for this dataset so that the same code from previous semesters could be used for analysis this semester.
    - Reversed items should be: 1, 3, 6
    - Subscales:
      * Discomfort intolerance: dis\_1R, dis\_2R
      * Discomfort avoidance: Items dis\_3, dis\_5, dis\_6
      * (Item 4 doesn’t seem to be included in the subscales due to cross-loadings)
      * I decided to just combine all items for total score calculations.
  + tfl\_1-18: Transformational leadership
    - This is one scale plus part from another – so not all items will be used in analysis
    - SP17, FL17, SP18 Response range: 1 – 7 (strongly disagree – strongly agree)
    - Same 3rd person format/instructions in all 3 semesters
    - One reversed item (tfl\_13R)
    - Subscales:
      * Vision: tfl\_1, tfl\_7, tfl\_13R
      * Inspirational motivation: tfl\_2, tfl\_8, tfl\_14
      * Intellectual stimulation: tfl\_3, tfl\_9, tfl\_15
      * Supportive leadership (individualized consideration): tfl\_4, tfl\_10, tfl\_16
      * Personal recognition: tfl\_5, tfl\_11, tfl\_17
      * Idealized influence: tfl\_6, tfl\_12, tfl\_18
    - **\*Idealized influence items are from a different scale and should NOT be used in analyses for any semester**
  + brs\_1-6: Brief resilience scale
    - Single factor
    - Reversed items: 2, 4, 6 (items in dataset don't contain the R at the end)
    - SP17, FL17, SP18 Response range: 1 – 7 (strongly disagree – strongly agree)
    - Average all items for score
    - Decided to not use this in current analyses.
  + sc-now\_1R-8R: State Self-Control Capacity Scale (short 10-item version, see "State Self-Regulation & Scoring.pdf doc")
    - SP17: Same items as sc-hw, except 2 items (#2 and #3) of those items weren't included here – other difference is that this is asking how they currently feel while taking the survey, not in general while doing homework.
      * I kept the numbering the same as in the hw version, so the sc-now items do not contain an item 2 or 3.
    - FL17: I added back in items 2 & 3: sc-now\_2R, sc-now\_3R
    - High score = high self-control and low ego-depletion (low cognitive fatigue)
    - SP17 & FL17 Scale range: 0 – 8 (Not at all – Very much)
    - Reversed items: ALL items reversed EXCEPT sc-hw\_4 & sc-hw\_8
    - SP18: This scale not included SP18 semester
  + lnr\_1R-8R: Leadership non-resistance scale
    - SP18 only: New scale that was only used in SP18
    - Scale range: 1-5 (never, sometimes, about half the time, most of the time, always)
    - ALL items reversed: All items ask about cognitive resistance, so high non-resistance would mean low scores on all of these items
      * To reverse score items, should calculate 6 – [item].
    - Average all items (after reverse-coding all variables) for total score.
  + har\_1-15: Hardiness
    - SP18 only: This scale only included in SP18 survey
    - Scale range: 1-4 (Not at all true, a little true, quite true, completely true)
      * This scale is what is used in original scale
    - 6 items reversed – variable names have R at end.
      * Reversed items: 3, 4, 8, 11, 13, 14
      * To reverse score items, should calculate 5 – [item]
    - Average all items (after reverse-coding relevant variables) for total score.
  + mt\_1-8: Mental toughness
    - SP18 only: This scale only included in SP18 survey
    - No reversed items
    - Scale range: 1-5 (never true, sometimes true, about half the time true, most of the time true, always true)
      * This is different from the original scale which uses 1-7 with "False, 100% of the time" and "True, 100% of the time" at the two extremes with no anchors in between.
    - Average all items for total score.
  + gpa
    - This was open-ended and an optional question, so there are missing data.
  + uh-now: Unconditional happiness right now
    - Single item question
    - SP17 & FL17 Response range: 1 – 9 (Not at all internally calm – Completely internally calm)
    - SP18: Not included this semester
  + cumTime: Cumulative time spent on survey