**Data Analysis**

**Task 3 (optional, 2 points)**

Dataset Data\_MASQLong.csv contains data regarding students’ mood and anxiety symptoms throughout an academic year (a total of 4 measurements were taken for each participant at T1, T2, T3, and T4), collected at the Northwest Mexico University as a preregistration study.

The Faceted Inventory of the Five-Factor Model (FI-FFM) was used to assess personality. It was designed to measure the facets of Big Five personality traits and consists of 207 items (Watson et al., 2017) with a 5-point Likert-type format ranging from strongly disagree to strongly agree.

The mini-MASQ (Casillas & Clark, 2000) is a 26-item instrument employing a five-point Likert-style scale. It includes abbreviated versions of three mini-MASQ scales: general distress, anhedonic depression, and anxious arousal.

Source: <https://osf.io/yjter/>

**Description of variables:**

|  |  |
| --- | --- |
| **Variable name** | **Meaning** |
| ID | Participant ID |
| Age\_T1 | Age Time Point 1 |
| Gender | Gender:   1. Female 2. Male |
| Edu\_T1 | Education Level 1   1. Bachelors in Arts (undergraduate) 2. Engineering (undergraduate) 3. Masters (graduate) 4. Doctorate (graduate) 5. Specialty (graduate) |
| MH\_Diag\_T1 | Self report mental health disorder diagnosis Time Point 1   1. Mental health disorder diagnosis 2. No mental health disorder diagnosis |
| MASQ\_DG\_mean\_T1 | Mean of MASQ General Distress items at Time Point 1 (mean value of the mini-MASQ General Distress scale for a participants) |
| MASQAN\_mean\_T1 | Mean of MASQ Anxious Arousal items at Time Point 1 (mean value of the mini-MASQ Anxious Arousal scale for a participants) |
| MASQ\_ANH\_mean\_T1 | Mean of MASQ Anhedonic Depression items at Time Point 1 (mean value of the mini-MASQ Anhedonic Depression scale for a participants) |
| MASQDG\_sum\_T1 | Sum of the scores for MASQ General Distress items at Time Point 1 (mean value of the mini-MASQ General Distress scale for a participants) |
| MASQAN\_sum\_T1 | Sum of the scores for MASQ Anxious Arousal items at Time Point 1 (mean value of the mini-MASQ Anxious Arousal scale for a participants) |
| MASQ\_ANH\_sum\_T1 | Sum of the scores for MASQ Anhedonic Depression items at Time Point 1 (mean value of the mini-MASQ Anhedonic Depression scale for a participants) |
| Neuro\_T1 | FFIFM Neuroticism Time Point 1 (Anxiety estimate based on the FI-FFM questionary) |
| Extra\_T1 | FFIFM Extraversion Time Point 1 (Extraversion estimate based on the FI-FFM questionary) |
| ExtraAgT1\_mean | FFIFM Extraversion Agentic Time Point 1 (e.g., speak my mind, take charge in a group of people, like the sensation of going really fast) |
| ExtraComT1\_mean | FFIFM Extraversion Communal Time Point 1 (e.g., enjoy spending time with people, would describe myself as cheerful, like places that are crowded and exciting) |
| Age\_T2 | Age Time Point 2 |
| MASQDG\_mean\_T2 | Average of MASQ General Distress items at Time Point 2 |
| MASQAN\_mean\_T2 | Average of MASQ Anxious Arousal items at Time Point 2 |
| MASQ\_ANH\_mean\_T2 | Average of MASQ Anhedonic Depression items at Time Point 2 |
| MASQDG\_sum\_T2 | Sum of the scores for MASQ General Distress items at Time Point 2 |
| MASQAN\_sum\_T2 | Sum of the scores for MASQ Anxious Arousal items at Time Point 2 |
| MASQ\_ANH\_sum\_T2 | Sum of the scores for MASQ Anhedonic Depression items at Time Point 2 |
| Age\_T3 | Age Time Point 3 |
| MH\_Diag\_T3 | Self report mental health disorder diagnosis Time Point 3 |
| MASQDG\_mean\_T3 | Average of MASQ General Distress items at Time Point 3 |
| MASQAN\_mean\_T3 | Average of MASQ Anxious Arousal items at Time Point 3 |
| MASQ\_ANH\_mean\_T3 | Average of MASQ Anhedonic Depression items at Time Point 3 |
| MASQDG\_sum\_T3 | Sum of the scores for MASQ General Distress items at Time Point 3 |
| MASQAN\_sum\_T3 | Sum of the scores for MASQ Anxious Arousal items at Time Point 3 |
| MASQ\_ANH\_sum\_T3 | Sum of the scores for MASQ Anhedonic Depression items at Time Point 3 |
| Age\_T4 | Age Time Point 4 |
| MASQDG\_mean\_T4 | Average of MASQ General Distress items at Time Point 4 |
| MASQAN\_mean\_T4 | Average of MASQ Anxious Arousal items at Time Point 4 |
| MASQ\_ANH\_mean\_T4 | Average of MASQ Anhedonic Depression items at Time Point 4 |
| MASQDG\_sum\_T4 | Sum of the scores of MASQ General Distress items at Time Point 4 |
| MASQAN\_sum\_T4 | Sum of the scores of MASQ Anxious Arousal items at Time Point 4 |
| MASQ\_ANH\_sum\_T4 | Sum of the scores of MASQ Anhedonic Depression items at Time Point 4 |
| Age\_T1\_group | Age group division:  “17-20”  “21-22”  “>23” |

*Note*. MASQ=Mood and Anxiety Symptom Questionnaire; FIFFM=Five Facet Mindfulness

**Questions**

Please, consider the following tasks:

Analyze two variables:

1. Extra\_T1
2. MASQAN\_sum\_T1

Select appropriate tests to check if there is a difference in values of each variable in the following groups:

* People with and without mental health disorder diagnosis (MH\_Diag\_T1)
* Males and females (Gender)
* People of different age groups (Age\_T1\_group)

Compare the values of the following variables for time points T1 and T4:

* MASQ\_ANH\_sum\_\*
* MASQDG\_sum\_\*

Explain the selection of each statistical test. Formulate the hypotheses. Interpret the results of analysis.

Please note that this task is optional. Upload the Jupyter Notebook with comments and answers in Smart LMS. The deadline is 25 September 23:55.  The task can be done individually or in a group of 2 students. If the task was done in a group, then one member of the group should upload the task indicating the surnames of the group members in the file name.