# Questionnaire Design (12 points)

A researcher has developed a new 6-item measure of agoraphobia (“AG\_New”). Data were collected from 99 participants who completed the new measure. Participants also completed an existing 12-item measure of agoraphobia symptoms (“AG\_EXIST”), in order to measure the concurrent validity of AG\_New. Participants also completed an existing 5-item measure of generalised anxiety symptoms (Gen\_Anx), in order to measure the discriminant validity of AG\_New (i.e., how the measure discriminates from a measure of a related, but separate construct).

Description of AG\_New

* AG\_New has 6 items/questions.
* Each item is rated on a 5-point Likert scale: 1 = strongly disagree; 5 = strongly agree.
* Two items are reverse-scored: **AG\_New2** and **AG\_New4** (see below)
* Higher scores indicate higher levels of agoraphobia.

Description of AG\_EXIST

* AG\_EXIST has 12 items/questions, but only the **Total score** is shown in the database.
* Higher scores indicate higher levels of agoraphobia.

Description of Gen\_Anx

* Gen\_Anx has 5 items/questions, but only the **Total score** is shown in the database.
* Higher scores indicate higher levels of generalised anxiety.

SPSS Data file

* The SPSS data file is called DAS-exercises-questionnaires.sav and is available on Blackboard. Please download the file for your own use.
* For **AG\_New**, there is one variable for each item: AG\_New1, AG\_New2, AG\_New3, AG\_New4, AG\_New5, AG\_New6.
* AG\_New2 and AG\_New4 are reverse-scored.
* For **AG\_EXIST,** there is one variable showing the Total score: **AG\_EXIST\_TOT.**
* For **Gen\_Anx,** there is one variable showing the Total score: **Gen\_Anx\_Tot.**
* There are no missing data points, so you don’t need to worry about how to deal with missing data.

Prior to answering the questions below, you will need to conduct the following procedures in SPSS:

* Recode reversed items.
* Calculate a total score for AG\_New. Please use the sum of the 6 items for this. Remember to use the reverse-scaled versions of **AG\_New2** and **AG\_New4,** not the originals.

Now answer the following questions for assessment:

1. What is the Cronbach’s alpha score for AG\_New, rounded to 3 decimal places? (2 points)
2. What does the Cronbach’s Alpha score indicate about the reliability of AG\_New? (2 points)
3. Which questions/items would increase the reliability of AG\_New if they were deleted/removed? (2 points)
4. What is the Pearson correlation between your total score for AG\_New and AG\_EXIST\_TOT, rounded to 3 decimal places? (1 point)

1. What does this correlation indicate about the concurrent validity of AG\_New? (2 points)
2. What is the Pearson correlation between your Total score for AG\_New and Gen\_Anx\_Tot, rounded to 3 decimal places? (1 point)
3. What does this correlation indicate about the discriminant validity of AG\_New? (2 points)

# Multiple Regression (24 points)

The dataset for this task is titled “DAS Set Exercises Regression.sav” and located in the assessment folder. This dataset is from a study based on the theory of planned behaviour (Ajzen, 1991) and it included measures of attitudes (*attitude*), subjective norms (*norm*), perceived control (*control*), and intentions (*intention*). In line with the theory, we want to test if intention is predicted by the other three variables.

Before starting the task, you should examine the datafile. It has been cleaned for you and the steps needed to prepare questionnaire data for analysis have been completed. This includes the removal of irrelevant variables, recoding, confirming scale reliability, and the creation of new items based on scale scores. In short - the variables included in this dataset are the ones needed to complete this task.

All variables are measured on a 5-point scale, with higher scores indicating greater endorsement. For example, an *attitude* score of 4 means that the participant had a positive attitude towards the behavior.

A participant identification variable (*pid*) is also included. This is only needed for task 4.

1. **Descriptive statistics and bivariate correlations
2 points available:** 1 point for the correct data; 1 point for a correctly formatted APA table

Provide a table(s) in APA 7 style that presents the descriptive statistics and bivariate correlations of the variables in the dataset. Note – do not include the participant identification number in this table(s). You may include descriptives and correlations on a single table or individually so long as APA 7 style is followed.

1. **Analysis of multiple regression (12 points available)**

Run an analysis of multiple regression to predict *intention* from *attitude*, *norm,* and *control*. Answer the following questions.

* 1. Is the model statistically significant? Report the appropriately formatted statistics to support your answer.
	**2 point available**: 1 point for correct statistics; 1 point for correctly formatted reporting
	2. How much variance in the outcome is explained by the model?
	**2 points available** for reporting the correct statistic(s)
	3. Write the unstandardized multiple regression equation for the predicted outcome and calculate the predicted *intention* of someone with the following scores: *attitude* = 2; *norm* = 5; *control* = 3.
	**4 points available:** 2 points for the correct equation; 2 points for the correct predicted outcome
	4. Report the β coefficient and the *p*-value of the three predictors. Which predictor was strongest and how much unique variance in the outcome did it explain?
	**4 points available:** 2 points for *all* correct β coefficients and their respective *p-*values; 2 points for correctly identifying the strongest predictor and calculating the variance it explains in the outcome.
1. **Multiple regression assumption checks (4 points available)**

Run assumption checks on the analysis of question 2 to answer the following questions. You **do not** need to provide graphs/figures of your output to fully answer these questions.
**You can earn 1 point per correct answer to a maximum of 4 points.**

* 1. Has the assumption of linearity been met? Provide a brief explanation (1-2 sentences) of your conclusion.
	2. Has the assumption of independence been met? Provide a brief explanation (1-2 sentences) of your conclusion.
	3. Has the assumption of normality been met? Provide a brief explanation (1-2 sentences) of your conclusion.
	4. Has the assumption of homoscedasticity been met? Provide a brief explanation (1-2 sentences) of your conclusion.
	5. Is there evidence of multicollinearity? Provide a brief explanation (1-2 sentences) of your conclusion.
1. **Multiple regression outliers (6 points available)**

Run a check for any unusual and influential observations. Doing so will reveal **one** outlier.

* 1. Which case (identified by the participant ID variable) has been identified as an outlier?
	**2 points available for identifying the outlier**
	2. Remove this individual case from your data however you best see fit and then rerun the analysis. Is the model statistically significant *and* has its fit improved relative to the original analysis of question 2? Report the appropriately formatted statistics to support your answer.
	**4 points available:** 2 points for the correct F-ratio statistics; 2 points for the correct statistics on model fit.

# One-way and Repeated Measures ANOVA (25 points)

This set exercise will consist of two datasets. One is titled “**DAS Set Exercises One-way ANOVA.sav**”. The other is titled “**DAS Set Exercises Factorial ANOVA.sav**”. Both are in the assessment folder of the DAS Blackboard. Details of each dataset will be explained alongside their respective questions.

**Tasks 1 - 3**

The first three tasks of this exercise will use the dataset titled “**DAS Set Exercises One-way ANOVA.sav**”. Before beginning the tasks, examine the data file. It has been cleaned and labelled for you and all the steps needed to prepare the dataset for analysis have been completed. As such, the variables that are included in this dataset are the ones needed to complete these tasks.

This dataset is about the efficacy of three different diets.

Experiment overview: Participants were randomly allocated to one of three diets (described below) over the course of a 10-week period. The aim was to test the effect of these three diets on weight loss.

The variables in this dataset are as follows:

***diet*** – A nominal variable indicating which diet condition participants were in. The diets were either the Atkins diet, the Keto diet, or reduced portion sizes (no specific diet, just less food consumption).

***preweight*** – A continuous variable indicating participant weight (kg) before starting the diet.

***weight10weeks*** – A continuous variable indicating participant weight (kg) 10 weeks into the diet.

***weightLOST*** – A continuous variable indicating how much total weight participants lost over the course of the 10 weeks. Larger numbers equal more weight loss. Negative values indicate weight gain.

1. **Descriptive Statistics (2 points available)**

Provide a table in APA 7 style that presents the key descriptive statistics (mean, SD, minimum, maximum, N) of the continuous variables.

**2 points available:** 1 point for correct data; 1 point for a correctly formatted APA table.

1. **Repeated-measures ANOVA (4 points available)**

For this task you will run a repeated measures ANOVA to test if dieting resulted in weight loss. For this task you will use weight before dieting (***preweight***) and weight after dieting (***weight10weeks***) as the levels of your repeated-measures factor.

* 1. Is it necessary to check Mauchly’s Test of Sphericity for this analysis? Briefly explain your answer (1-2 sentences).
	**1 point available** for a correct answer *and* explanation
	2. Is there a statistically significant main effect of the repeated factor? Provide a brief (1-4 sentences) write up of the results. In your write up include the appropriately formatted inferential statistics, descriptives of the repeated factor, and an interpretation of the results in plain English.
	**3 points available**: 1 point for correct inferential statistics *and* descriptive statistics; 1 point for correct formatting of the results; 1 point for a clear and accurate interpretation of the results.
1. **Between-participants one-way ANOVA (7 points available)**

For this task you will test the effectiveness of the three diets (***diet***). You will conduct a between-participants one-way ANOVA with total weight loss (***weightLOST***) as your dependent variable.

* 1. Check Levene’s Test of Equality of Error Variance. Has this assumption been met? Report the appropriately formatted statistics to support your answer.

**1 point available** for a correct answer with correctly formatted statistics

* 1. Is there a statistically significant main effect of the type of diet? Report the appropriately formatted statistics to support your answer. Additionally, report the mean weight loss of each condition and offer a brief interpretation (1-3 sentences) of these descriptives.
	**3 points available:** 1 point for correct inferential *and* descriptive statistics; 1 point for correct formatting of the results; 1 point for a clear and accurate interpretation
	2. To understand the main effect, conduct post-hoc multiple comparisons with Tukey’s correction. Write a brief (1-3 sentences) summary of the results that includes both means and *p*-values.
	**3 points available**: 1 point for correct descriptive statistics; 1 point for correct *p*-values; 1 point for a clear and accurate summary

**Task 4**

Task 4 will use the second dataset titled “**DAS Set Exercises Factorial ANOVA.sav**”. Before beginning the tasks, examine the data file. It has been cleaned and labelled for you and all the steps needed to prepare the dataset for analysis have been completed. As such, the variables that are included in this dataset are the ones needed to complete these tasks.

This dataset is from an experiment that is testing the effectiveness of different problem-solving techniques on the production of creative solutions.

Experiment Overview: Participants were randomly allocated to employ one of two different problem-solving techniques. Training on the assigned technique was provided and participants were presented with a nuanced and open-ended problem (i.e., a workplace dilemma). They were asked to generate as many solutions as possible to the problem. Afterwards they were asked to report if they considered themselves to be a creative person.

The variables in the dataset are as follows:

***creativePerson***– A nominal variable for which participants simply responded “yes” or “no” when asked if they considered themselves to be a creative person.

***technique*** – A nominal variable indicating which problem-solving technique participants were randomly allocated to. This is a between-participants variable indicating if participants were randomly assigned to employ either the ‘5-Step’ approach to problem solving or the ‘Mind Map’ approach to problem solving.

***solutions*** – A continuous variable indicating the number of potential solutions provided. This score is no indication of solution quality, simply a raw number of how many solutions were provided.

1. **2 x 2 Between-participants factorial ANOVA (12 points available)**

For this task you will run a 2x2 between-participants factorial ANOVA to test for an effect of creativity (***creativePerson***) and problem-solving technique (***technique***) on the number of solutions provided (***solutions***). You will also test for an interaction between the two factors and run any necessary follow-up analyses on the effects that are found.

* 1. Has the analysis met the assumption of homogeneity of error variance? Report the appropriately formatted statistics to justify your answer.
	**2 points available**: 1 for the correct statistics; 1 for the correct format
	2. Are there significant main effects of the two factors? Is there a significant interaction? Report the appropriately formatted statistics to justify your answers.
	**4 points available**: 1 point for each correct effect (3 total); 1 point for correct formatting throughout
	3. Conduct tests of simple main effects to fully understand your interaction. Report the appropriately formatted statistics of the ***statistically significant*** simple main effects with a brief (1-2) sentence explanation of each.
	**6 points available**: 2 points for each correctly identified SME with the correctly formatted results, 1 point for each correct explanation/interpretation of the SME

# Interpretative Phenomenological Analysis (IPA) (24 points)

Task 1 (6 points)

Answer the following short-answer questions about the methods involved in IPA. Each correct answer scores 1 point. In all cases, the correct answer has just 1-3 words. Be as precise as you can, but don’t write long answers.

Which is the most common data collection method for IPA studies?

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“Drawing together the experiential statements and producing a structure which allows you to point to all of the most interesting and important aspects of your participant’s account.” What is being explained here?

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Which idea in IPA is concerned with the dynamic relationships between the part and the whole in analysis?

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Which principle of IPA is the main reason for analysing one case at a time rather than taking all cases as a single data set?

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“The researcher making sense of the participant making sense of their experience” – what is being defined here?

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When a researcher draws together some initial notes and impressions about the participant’s lived experience in a phrase such as “Life has moved on, but their friendship stays strong”, they have created what?

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Task 2 (6 points)

Macran et al. (1999) report an IPA study about psychotherapists receiving personal therapy, and the implications for their own practice. This is an extract from the data analysis (Macran et al., 1999, p. 427):

“Each of the participants could recall times when they found it difficult to keep their feelings separate from their clients’ feelings and were ‘dragged in’. Andrew described a time when he was unable to maintain this distinction, and his feelings started to become confused with those of his clients. Such an experience was one of the reasons he decided to enter his current spell of therapy.

‘I’ve been embroiled sexually with a couple of clients. Not in the sense of actually breaking the boundaries, but it was getting rather sort of hot and steamy and uncomfortable … I was getting confused … wasn’t really able to step back and see the wood for the trees … [Therapy] helped me be true about what was mine and what was theirs and to actually process my own feelings and my own needs on my own and not try to get my needs met in the therapy I was giving.’ (Andrew)”

This extract is typical of an IPA in many ways. Name *three* of the ways in which it is a good example of IPA (rather than any other form of qualitative or quantitative data analysis). Use just one line of writing for each aspect.

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2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Scoring:*** 6 points are available in total. Missing or wrong answers will receive no points, ambiguous or incomplete answers will receive 1 point, and correct and complete answers will receive 2 points.

Task 3 (12 points)

In an unpublished IPA study, the following quotations were all associated with the same theme. They are all from an interview with an international student at a British university. Read the quotations carefully, with IPA principles in mind, and think about what connects them. Then write a short explanation (one paragraph, ca. 100 words) of the theme. Remember to include the several experiential aspects that make up the theme.

“the experience I really have at university is that people are pushed into cliques…I observe that they tend to stick to people from their own country or culture or speak the same language. I realised that even though we speak about multinational societies and globalisation, and that all people are the same, I realise that in theory this does exist, but in reality its very different – and that people still make company with those they share a similar background e.g. British with British, Europeans with Europeans, Asians with Asians, Africans with Africans (…)”

“At the beginning I did approach a lot people and managed to make some friends, but once we all began to settle in a bit, the British students moved to different social circles, made up of majority British.”

“Sometimes people are just not interested in you or anything or anyone else. Even the foreigners tend to just focus on their needs, or their own groups sometimes. I cannot say that I have experienced any racism or enmity, but I just feel like a foreigner here.”

“Also, another thing is that the society is different so it can be difficult to adjust. More than that, sometimes even when you find a new society, they are not so welcoming, and you need to fight or try extra harder for things. They don’t consider you part of them. You are considered an outcast which is a key point for me. I cannot say that the people are not friendly, just that they are not interested at all. You can feel invisible, sad, anger, sometimes disappointed, even in yourself, because you start to think ‘what’s wrong?’ Yes, that’s how I feel and I guess people in my position might feel the same, and maybe are the key points.”

***Scoring:*** 12 points are available. The marker will check your answer for groundedness in the data, clarity and completeness, and award points accordingly.