



**Northumbria
University**
NEWCASTLE

PE7025 Assessment 2: Quantitative Assignment

Dr Ascen Pagán

Purpose of Quantitative Assignment

- To do data analysis using SPSS and report the results using standard APA conventions.
- Designed to feed into these learning outcomes:
 - MKU1: By the end of the module, you will understand fundamental concepts and principles in quantitative data analysis.
 - MIPS1: By the end of the module, you will be able to independently read advanced literature on quantitative methods to further your own understanding.
 - MIPS2: By the end of the module, you will be able to appropriately apply the techniques for data analysis outlined in the syllabus, report their results in an adequate way, and use these results to critically evaluate your own research and that of others.

The Assignment Folder

- Quantitative Assignment
 - PE7025 Quant PDA assignment 2021 – The brief
 - Assessment.sav - the data
 - APA format for statistical notion and other things.pdf
 - Quantitative Assignment Formatting Guidance

- Practice-Quant Questions
 - Similar exercises
 - Answer guides


The Brief

1. A researcher is interested in the relationships between the following four variables: On-line game addiction, narcissistic personality traits, self-control, and aggression. Data are collected from a sample of 226 individuals. The data can be found in the assessment SPSS spreadsheet 'assessment.sav'. For each variable, higher values indicate greater levels of the variable. Analyse the data using SPSS and report the results using standard APA conventions. (20 marks)
2. Following the initial analysis conducted in Q1 the researcher goes on to look at which of the variables (On-line game addiction, narcissistic personality traits, and self-control) are the best predictors of aggression. Analyse the data using SPSS and report the results using standard APA conventions. (30 marks)
3. The researcher also thinks that it is possible that there are sex differences for these variables. You will also find codes for males and females in the data set. Analyse the data using SPSS to investigate this, and report the results using standard APA conventions. (20 marks)
4. As a further investigation, the researcher wants to see if playing a violent video game increases levels of aggression. She runs a study in which aggression levels are measured in 40 participants before and after playing a violent video game. Use SPSS to compare the variables Aggro_pre and Aggro_post in order to answer this question. (10 marks)
5. Explain the advantage of reporting effect sizes in addition to significance levels. (20 marks)

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Data file: 'assessment.sav'

Edit View Data Transform Analyze Graphs Utilities Extensions Window Help 									
	Gender	Aggression	Online_Gaming_Addiction	Narcissism	Self_Control	Participant	Aggro_Pre	Aggro_Post	var
1	Male	36	55	8	154	1	15	16	
2	Female	21	40	6	172	2	24	26	
3	Male	36	35	6	175	3	31	29	
4	Female	10	70	14	175	4	23	23	
5	Female	24	45	7	179	5	34	35	
6	Male	39	50	14	179	6	28	22	
7	Female	33	50	11	179	7	23	26	
8	Male	39	60	14	179	8	31	30	
9	Male	27	60	8	182	9	30	30	
10	Male	36	25	7	182	10	22	25	
11	Female	21	60	8	182	11	9	7	
12	Female	30	55	8	182	12	18	16	
13	Female	24	70	12	182	13	22	23	
14	Female	27	65	6	185	14	24	24	
15	Male	36	60	6	185	15	31	32	

Question 1

(Week 5)

- The focus is clearly on the relationships between
 - On-line game addiction
 - Narcissistic personality traits
 - Self-control
 - Aggression
- State what you are going to do to investigate this
 - Descriptives
 - Scatterplots
- Pearson Correlations Produce a table of descriptive statistics
 - Mean
 - Standard Deviation
 - Skew
 - Kurtosis
 - N

Question 1

- Comment on any observed deviations in skew or kurtosis (Z-scores that are greater than ± 1.96) but indicate that no transformations will be performed. Indeed, there are few options for kurtosis and it is not generally seen as a big problem anyway.
- Present scatter plots between all pairs of variables with lines of best fit added.
 - Could be individually or in a matrix.
 - Comment on what the relationships look like.
 - Do there seem to be any outliers, and if so, do they look like they are going to make an unacceptable impact on the relationship observed?
- Present correlations matrix.
 - Comment on the strength, significance and direction of the correlations.



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Question 2

- It requires multiple regression (Week 10)
- Briefly indicate whether the variables would be expected to be good predictors based on correlations reported in question 1
 - R Squared
 - Anova – significance and what it means
 - Individual Predictors
 - Beta coefficients and confidence intervals
 - T-tests for the beta coefficients
 - Part correlations (compare to zero order)
 - Collinearity
- Indicate which appears to be best predictor, second, third.
- State the regression equation

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Question 3

- State that you performed **Independent Sample t-tests** to identify if sex differences exist. (Week 7)

- Table of descriptive statistics

- Mean, SD, N

- Report each t-test separately:

The 31 participants in the rosemary condition ($M = 15.90$, $SD = 2.45$) performed significantly better on time based prospective memory than the 34 participants in the no aroma condition ($M = 14.41$, $SD = 2.451$), $t(63) = -2.59$, $p = .012$. Calculation of Cohen's d indicated the presence of a medium effect size, $d = .64$, 95% CI [.14, 1.14].

- Draw an overall conclusion. Are there sex differences? Which variables? How big? Consistently in the same direction?

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Question 4

- State that you performed a **Paired samples t-test** to see if aggression after playing the game is greater than before (Week 8)

- Table of descriptive statistics

- Means, SD, N

- Report t-test. For example:

The results from the time based prospective memory test ($M = 15.12$, $SD = 2.42$) and the event based prospective memory test ($M = 15.75$, $SD = 1.64$) revealed significantly better performance for event based prospective memory, $t(64) = -2.11$, $p = .039$. Calculation of Cohen's d indicated the presence of a small effect size, $d = .26$, 95%CI [.01, .50].

- Draw a conclusion. Is the effect potentially important?

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5. **Explain the advantage of reporting effect sizes in addition to significance levels. (20 marks)**

Question 5

- What is statistical significance?
- What is effect size?
- The distinction between statistical significance and scientific (or practical) importance.
- Give an example
- Factors that affect significance
- Problem with effect sizes eg many different types
- Value of effect size in addition to statistical significance
- Overall summary/conclusion

Quantitative Assignment (60%)

■ Word limit

- 2000 words is just a guide for the overall assignment and doesn't include content of tables or plots.
- You should be able to easily answer all five questions within 2000 words though.

■ APA Guidelines

- These can be super specific. I like to exercise some common sense.
- Decimal places. As long as you are consistent, it is fine. For example, use 2 or 3, but stick with your choice.
- Use of italics (or not) is not going to lose you marks.
- Tables should be clear but its not important to format them exactly as in APA guidelines.
- Important! Do not copy and paste tables/output direct from SPSS. You can earn marks by redrawing tables, and you must give them appropriate legends.

Questions on the Discussion Board

- We can answer any questions you may have about the practice exercises and/or the weekly content but please remember we cannot provide any feedback for the exercises in the quantitative assignment.
- You need to engage with the weekly content before you try to answer the questions in the quantitative assignment. **READ THE CHAPTERS** in the essential reading book.
- Please, check the Quantitative Assignment board before posting your question.
- There will be a live webinar on 17th June at 5 pm about the quantitative assignment.
- This assignment **needs to be submitted by 23:59 UK time on 4th July 2021.**