

Sample Deliverables: Statistical Testing Service

Overview:

This document provides a sample of what you can expect from our **statistical testing service**, which includes preparing, cleaning up and performing a variety of statistical tests (e.g. descriptive and inferential statistical tests) on your data set.

With this service, you will receive **four key deliverables**:

1. A **high-level opening overview**, covering the steps undertaken, a rationale for each step and brief notes regarding the relevant outcomes.
2. A **statistical report** (in PDF or Excel format), including the graphs, charts and tables generated during the testing process.
3. The **statistical software files** (e.g. .SAV and .SPV files for SPSS, or .CSV and .R files for R), which you can use for any further analyses you may wish to undertake.
4. A brief **live 1-on-1 session** to discuss any questions after you've reviewed the aforementioned documents (optional).

Note that the purpose of the statistical testing service is purely to prepare, clean up and test the statistical data using suitable software so that you don't have to learn the software and analytical procedures from scratch. Importantly, this **does not include a detailed write-up or analysis**. However, we can provide further analysis assistance on a 1-on-1 coaching basis (billed separately).

The sample on the pages that follow includes a set of statistical tests run on a dataset from Kaggle, which can be found here:

<https://www.kaggle.com/spscientist/students-performance-in-exams> .

Queries:

If you have any questions regarding our statistical testing service, please feel free to email us at hello@gradcoach.com.

Sample: High-level Overview

This document outlines the **purpose** of the various tests and the **steps taken** during the testing process. Brief notes regarding the outcomes of specific tests may be provided where relevant.

Below is a sample extract from a high-level overview. The full document can be downloaded here: <https://www.dropbox.com/s/mvvaqd7jgjs18th/Overview.docx?dl=0>

Approach and rationale:

- Descriptive statistics of categorical variables to understand the sample
- Descriptive statistics analysing each of the three scores by each of the categorical variables
- Inferential statistics comparing the three scores among the factors of each of the categorical variables
- Inferential statistics comparing the scores to each other
- Graphs to visualise relevant trends/outcomes

The analysis process:

Step 1: Importing, processing and cleaning the data in SPSS

Step 2: Descriptive statistics for each categorical variable

- Frequencies and percentages of each variable for each category
- Bar graphs visually depicting differences

Step 3: Descriptive statistics of scores overall and by categorical variables

- "Descriptives" table of scores: These tables are overwhelming, but focus on the following three statistics:
 - o Mean: the average.
 - o Median: the score of the person in the 50th percentile
 - o Standard deviation: a statistical indication of how spread out (or variable) the results are.
- "Normality: Tests to see whether the values are normally distributed (a common assumption among multiple tests).
 - o Two normality tests are conducted: the Kolmogorov-Smirnov and Shapiro-Wilk tests
 - o For values where "sig" is less than 0.05 (or lower if your cut-off is less than this value), normality is considered as not necessarily normally distributed.
 - o For the majority of tests, normality is not normally distributed. This impacts which inferential tests I will prioritise.

Sample: Statistical Report

This section includes the **outputs generated** by the statistical analysis software of choice (e.g. SPSS or R). This will often include the following where relevant/applicable:

- Descriptive statistics of the sample demographics
- Validity, reliability or other statistics for assumptions relevant to the tests that follow
- Descriptive statistics of the variables under evaluation
- Inferential statistics relevant to the research aims and objectives

These outputs are frequently in the form of **tables and graphs**. As mentioned previously, will not provide a write-up or interpretation of the data. Should you need further assistance with the interpretation, we can discuss this in the follow-up call (optional) or as part of a coaching engagement (billed separately).

Below, some sample outputs are included. The full outputs can be downloaded here:

<https://www.dropbox.com/s/3ekxv8arqtpyyvi/Output.pdf?dl=0>

Race or ethnicity

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid group A	89	8.9	8.9	8.9
group B	190	19.0	19.0	27.9
group C	319	31.9	31.9	59.8
group D	262	26.2	26.2	86.0
group E	140	14.0	14.0	100.0
Total	1000	100.0	100.0	

Parent level of education

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid associate's degree	222	22.2	22.2	22.2
bachelor's degree	118	11.8	11.8	34.0
high school	196	19.6	19.6	53.6
master's degree	59	5.9	5.9	59.5
some college	226	22.6	22.6	82.1
some high school	179	17.9	17.9	100.0
Total	1000	100.0	100.0	

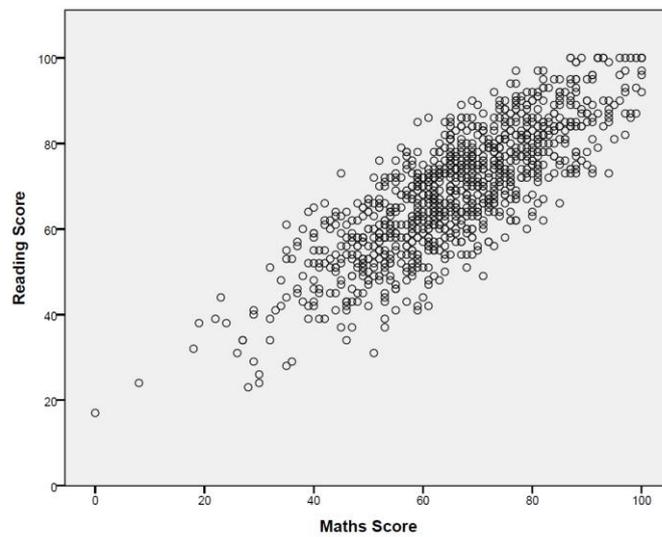
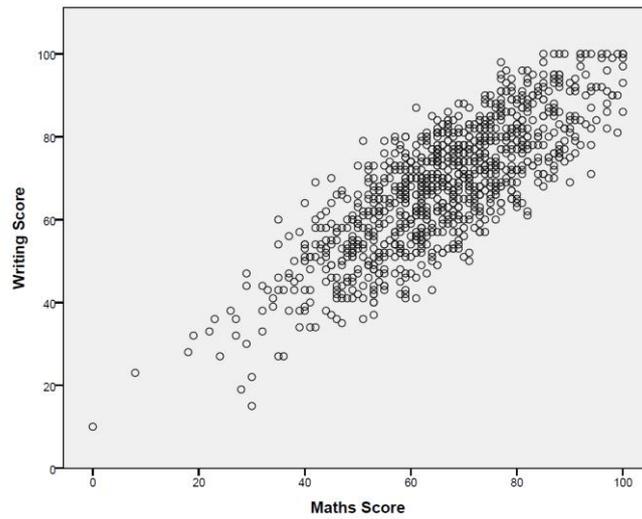
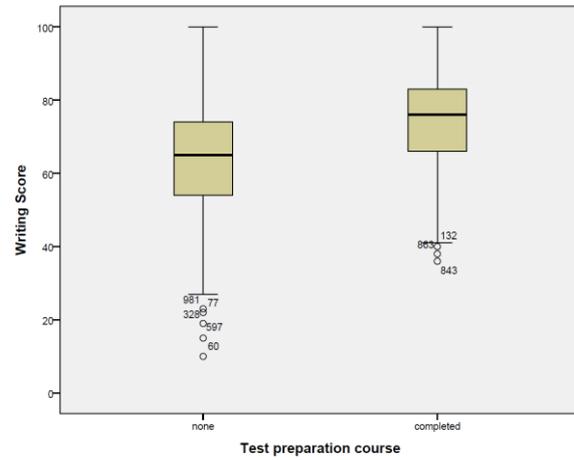
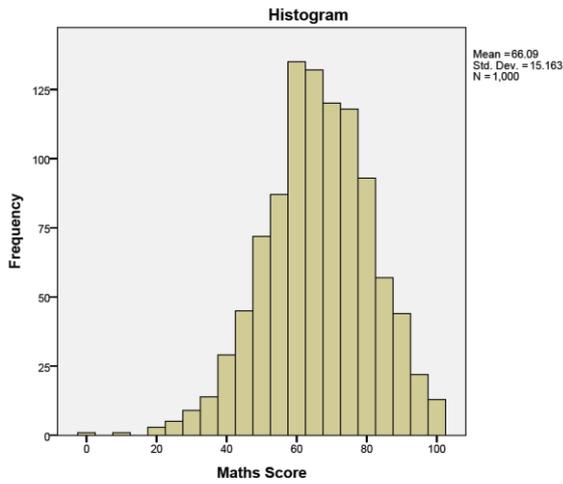
Tests of Normality

Test preparation course	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Maths Score none	.037	642	.041	.992	642	.002
completed	.029	358	.200*	.994	358	.139
Reading Score none	.038	642	.027	.994	642	.017
completed	.065	358	.001	.986	358	.001
Writing Score none	.036	642	.041	.995	642	.042
completed	.058	358	.005	.986	358	.001

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

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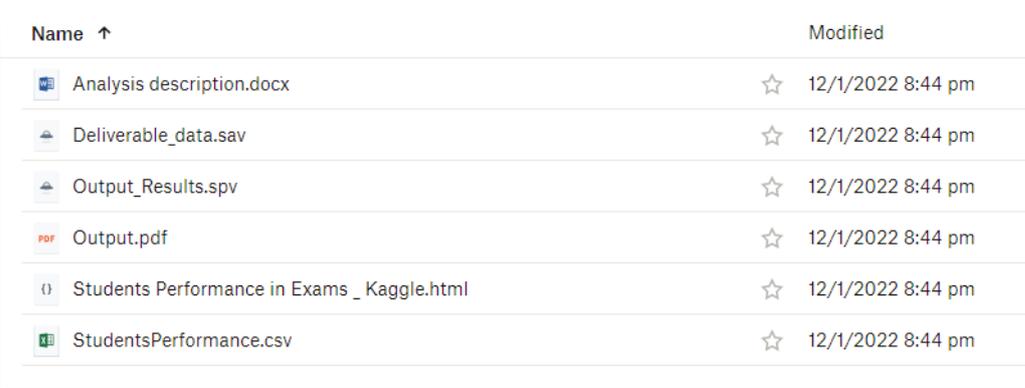


Sample: Supporting Files

Depending on the statistical program/software used, this will include:

- The **data** file generated by the statistical software (e.g. SAV file for SPSS)
- The **output** file generated by the statistical software (e.g. SPV file for SPSS)
- Any other data files used as part of the statistical testing procedure

These allow you to undertake any additional analyses using the relevant software, should you wish. They may also be required by your institution as supporting documentation for your research project.



Name ↑	Modified
 Analysis description.docx	☆ 12/1/2022 8:44 pm
 Deliverable_data.sav	☆ 12/1/2022 8:44 pm
 Output_Results.spv	☆ 12/1/2022 8:44 pm
 Output.pdf	☆ 12/1/2022 8:44 pm
 Students Performance in Exams _ Kaggle.html	☆ 12/1/2022 8:44 pm
 StudentsPerformance.csv	☆ 12/1/2022 8:44 pm

1-On-1 Debrief Call (Optional)

If you would like, we can include a call to discuss any questions after you have reviewed the files that we provide you with. Please let us know in advance if you'd like this so that we can include it in your quote.

As mentioned, should you require additional assistance to interpret the data and develop your analysis chapter, we can assist with this on a coaching basis (billed separately). Feel free to contact us should you wish to learn more about this.