Unit 4 – Personal investigations

Investigation 1 ………………………………………………………………………………………………………………

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| **Content** | **Covered in class** | **Not sure** | **Getting there** | **Got it 😊** | **Links to** |
| Hypotheses |  |  |  |  |  |
| Variables |  |  |  |  |  |
| Methodology (including experimental design if appropriate) |  |  |  |  |  |
| Sampling |  |  |  |  |  |
| Descriptive statistics |  |  |  |  |  |
| Graphical representation |  |  |  |  |  |
| Inferential statistics |  |  |  |  |  |
| Reliability |  |  |  |  |  |
| Validity |  |  |  |  |  |
| Ethics |  |  |  |  |  |
| Areas of improvement |  |  |  |  |  |

Investigation 2 ………………………………………………………………………………………………………………

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| **Content** | **Covered in class** | **Not sure** | **Getting there** | **Got it 😊** | **Links to** |
| Hypotheses |  |  |  |  |  |
| Variables |  |  |  |  |  |
| Methodology (including experimental design if appropriate) |  |  |  |  |  |
| Sampling |  |  |  |  |  |
| Descriptive statistics |  |  |  |  |  |
| Graphical representation |  |  |  |  |  |
| Inferential statistics |  |  |  |  |  |
| Reliability |  |  |  |  |  |
| Validity |  |  |  |  |  |
| Ethics |  |  |  |  |  |
| Areas of improvement |  |  |  |  |  |

Unit 4 – Application of research methods to novel scenarios

### (Remember you will need to revise the content from Unit 2, section B for your exam.)

### Methodology

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| **Content** | **Covered in class** | **Not sure** | **Getting there** | **Got it 😊** | **Links to** |
| Knowledge and understanding of brain scans  *(A research method which involves taking images of the living brain to investigate brain function e.g. PET, fMRI and CAT scans.)* |  |  |  |  |  |
| Evaluation of brain scans  (*Consider the methodology in order to make a judgment about it, for example about how good or bad it is.*) |  |  |  |  |  |
| Knowledge and understanding of longitudinal studies  (*A method which involves conducting research over a long period of time in order to observe long-term effects of X on a specific behaviour. It may utilise a range of other methodologies such as case studies, interviews etc.)* |  |  |  |  |  |
| Evaluation of longitudinal studies  (*Consider the methodology in order to make a judgment about it, for example about how good or bad it is.*) |  |  |  |  |  |
| Knowledge and understanding of cross-sectional studies  *(A method which involves comparing one group of participants, representing a cross-section of society, against another at the same point in time.)* |  |  |  |  |  |
| Evaluation of cross-sectional studies  (*Consider the methodology in order to make a judgment about it, for example about how good or bad it is.*) |  |  |  |  |  |

### Assessing reliability

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| **Content** | **Covered in class** | **Not sure** | **Getting there** | **Got it 😊** | **Links to** |
| Knowledge and understanding of inter-rater reliability  *(Where two or more psychologists produce consistent results by using a standardised procedure, agreed coding system, or correlation of their data.)* |  |  |  |  |  |
| Application of inter-rater reliability  *(Able to apply this to research scenarios.)* |  |  |  |  |  |
| Knowledge and understanding of test-retest reliability  *(Involves testing and retesting the same participants over time, with the same test, and comparing their scores. If the scores are the same the test has external reliability.)* |  |  |  |  |  |
| Application of test-retest reliability  *(Able to apply this to research scenarios.)* |  |  |  |  |  |
| Knowledge and understanding of split-half reliability  *(Involves splitting a pp’s test answers in half and seeing whether s/he got the same or similar scores on the two halves. If so, internal reliability is high; if not, it is low and individual questions would need to be redesigned.)* |  |  |  |  |  |
| Application of split-half reliability  *(Able to apply this to research scenarios.)* |  |  |  |  |  |

### Assessing validity

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| **Content** | **Covered in class** | **Not sure** | **Getting there** | **Got it 😊** | **Links to** |
| Knowledge and understanding of concurrent validity  *(Validating a measurement by comparing it with an established measurement that has known validity. If similar results occur on both tests, then this new test is valid. If not, then the new test would have to be redesigned and tested.)* |  |  |  |  |  |
| Application of concurrent validity  *(Able to apply this to research scenarios.)* |  |  |  |  |  |
| Knowledge and understanding of construct validity  *(The most sophisticated test of validity as it looks at whether the overall results reflect the phenomena as a whole (external validity). Checking the existing definitions of the behaviour being studied and redesigning the test if it measures a different construct.)* |  |  |  |  |  |
| Application of construct validity  *(Able to apply this to research scenarios.)* |  |  |  |  |  |
| Knowledge and understanding of content validity  *(This objectively checks the method of measuring behaviour is accurate and decides whether it is a fair test that achieves the aims of the study (internal validity). Ask an expert in that specific area of behaviour to check the test is valid.)* |  |  |  |  |  |
| Application of content validity  *(Able to apply this to research scenarios.)* |  |  |  |  |  |
| Knowledge and understanding of predictive validity  *(The degree to which a test accurately forecasts a future outcome on a more broadly related topic. Do the findings apply in different and more varied situations? E.g. Do those with high IQ score gain higher grades in exams?)* |  |  |  |  |  |
| Application of predictive validity  *(Able to apply this to research scenarios.)* |  |  |  |  |  |
| Knowledge and understanding of face validity  *(The least sophisticated measure of validity. This validity is simply whether the test appears to measure what it claims to, and hence is subjective. Tests where the purpose is clear, even to naïve respondents, are said to have this validity.)* |  |  |  |  |  |
| Application of face validity  *(Able to apply this to research scenarios.)* |  |  |  |  |  |

### Graphical representation

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| **Content** | **Covered in class** | | | **Not sure** | | **Getting there** | | **Got it 😊** | | **Links to** |
| Knowledge and understanding of distribution curves  *(Linear representations of data that include a mean, median and modal score to show a spread of data.)* |  | | |  | |  | |  | |  |
| Able to construct distribution curves  *(Able to create this graphical representation from a set of data.)* | |  |  | |  | |  | |  | |
| Able to interpret distribution curves  *(Able to draw conclusions from the graphical representation about what the data shows.)* | |  |  | |  | |  | |  | |
| Knowledge and understanding of normal distribution  *(A type of distribution where the mean, median and mode are equal. This can be referred to as a bell curve.)* |  | | |  | |  | |  | |  |
| Able to construct normal distribution  *(Able to create this graphical representation from a set of data.)* | |  |  | |  | |  | |  | |
| Able to interpret normal distribution  *(Able to draw conclusions from the graphical representation about what the data shows.)* | |  |  | |  | |  | |  | |
| Knowledge and understanding of positive skewed distribution  *(A type of skewed distribution, where the mode is less than the mean.)* |  | | |  | |  | |  | |  |
| Able to construct positive skewed distribution  *(Able to create this graphical representation from a set of data.)* | |  |  | |  | |  | |  | |
| Able to interpret positive skewed distribution  *(Able to draw conclusions from the graphical representation about what the data shows.)* | |  |  | |  | |  | |  | |
| Knowledge and understanding of negative skewed distribution  *(A type of skewed distribution, where the mode is greater than the mean.)* |  | | |  | |  | |  | |  |
| Able to construct negative skewed distribution  *(Able to create this graphical representation from a set of data.)* | |  |  | |  | |  | |  | |
| Able to interpret negative skewed distribution  *(Able to draw conclusions from the graphical representation about what the data shows.)* | |  |  | |  | |  | |  | |

### Inferential statistics

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| **Content** | **Covered in class** | | | **Not sure** | | **Getting there** | | **Got it 😊** | | **Links to** |
| Knowledge and understanding of Chi-Squared test  *(A statistical test that is used when the experimental design is independent groups, when the level of data is nominal and when the hypothesis is predicting a difference between variables. The observed value must be higher than the critical value for results to be considered statistically significant.)* |  | | |  | |  | |  | |  |
| Able to apply Chi-Squared test  *(Able to apply this to research scenarios.)* | |  |  | |  | |  | |  | |
| Able to interpret Chi-Squared test  *(Able to draw conclusions from the inferential statistics about what the data shows.)* | |  |  | |  | |  | |  | |
| Knowledge and understanding of Mann Whitney U test  *(A statistical test that is used when the experimental design is independent groups, when the level of data is at least ordinal and when the hypothesis is predicting a difference between variables. The critical value must be higher than the observed value for results to be significant.)* |  | | |  | |  | |  | |  |
| Able to apply Mann Whitney U test  *(Able to apply this to research scenarios.)* | |  |  | |  | |  | |  | |
| Able to interpret Mann Whitney U test  *(Able to draw conclusions from the inferential statistics about what the data shows.)* | |  |  | |  | |  | |  | |
| Knowledge and understanding of Sign test  *(A statistical test that is used when the experimental design is repeated measures/matched pairs, when the level of data is nominal and when the hypothesis is predicting a difference. The critical value must be higher than the observed value for results to be considered statistically significant.)* |  | | |  | |  | |  | |  |
| Able to apply Sign test  *(Able to apply this to research scenarios.)* | |  |  | |  | |  | |  | |
| Able to interpret Sign test  *(Able to draw conclusions from the inferential statistics about what the data shows.)* | |  |  | |  | |  | |  | |
| Knowledge and understanding of Spearman’s rank order correlation coefficient  *(A statistical test that is used when the level of data is at least ordinal and is related, and when the hypothesis is predicting a correlation/relationship between variables. The observed value must be higher than the critical value for results to be considered statistically significant.)* |  | | |  | |  | |  | |  |
| Able to apply Spearman’s rank order correlation coefficient  *(Able to apply this to research scenarios.)* | |  |  | |  | |  | |  | |
| Able to interpret Spearman’s rank order correlation coefficient  *(Able to draw conclusions from the inferential statistics about what the data shows.)* | |  |  | |  | |  | |  | |
| Knowledge and understanding of Wilcoxon matched pairs signed ranks test  *(A statistical test that is used when the experimental design is repeated measures/matched pairs, when the level of data is at least ordinal and when the hypothesis is predicting a difference between variables. The critical value must be higher than the observed value for results to be significant.)* |  | | |  | |  | |  | |  |
| Able to apply Wilcoxon matched pairs signed ranks test  *(Able to apply this to research scenarios.)* | |  |  | |  | |  | |  | |
| Able to interpret Wilcoxon matched pairs signed ranks test  *(Able to draw conclusions from the inferential statistics about what the data shows.)* | |  |  | |  | |  | |  | |
| Knowledge and understanding of probability values  *(A numerical value that gives an indication of the likelihood that results are due to a real difference/correlation and not due to chance e.g. in psychology we accept a probability value of 95%, where results are due to chance in 5% of cases.)* |  | | |  | |  | |  | |  |
| Able to apply probability values  *(Able to apply this to research scenarios.)* | |  |  | |  | |  | |  | |
| Able to interpret probability values  *(Able to draw conclusions from the inferential statistics about what the data shows.)* | |  |  | |  | |  | |  | |
| Knowledge and understanding of significance levels  *(A numerical value that is usually expressed in value including two decimal places. This level tells you the margin of error that could occur in your results e.g. 0.05 suggests that there is a 5% possibility that results are due to chance and not the difference/correlation between variables.)* |  | | |  | |  | |  | |  |
| Able to apply significance levels  *(Able to apply this to research scenarios.)* | |  |  | |  | |  | |  | |
| Able to interpret significance levels  *(Able to draw conclusions from the inferential statistics about what the data shows.)* | |  |  | |  | |  | |  | |
| Knowledge and understanding of observed (calculated) values  *(The numerical value that is created as a result of inferential statistical analysis of your data. This will be compared to the critical values for the test to calculate the level of significance.)* |  | | |  | |  | |  | |  |
| Able to apply observed (calculated) values  *(Able to apply this to research scenarios.)* | |  |  | |  | |  | |  | |
| Able to interpret observed (calculated) values  *(Able to draw conclusions from the inferential statistics about what the data shows.)* | |  |  | |  | |  | |  | |
| Knowledge and understanding of critical values from tables  *(The tabulated numerical values that have been assigned to a particular inferential statistical test. It is compared to the observed value for your set of data to calculate significance.)* |  | | |  | |  | |  | |  |
| Able to apply critical values from tables  *(Able to apply this to research scenarios.)* | |  |  | |  | |  | |  | |
| Able to interpret critical values from tables  *(Able to draw conclusions from the inferential statistics about what the data shows.)* | |  |  | |  | |  | |  | |