Experimental Psychology Practical Report

Personality

Introduction:

Personality is a form of folk psychology; everyone **has** their own ideas about what personality is. Personality can be defined as the characteristics that account for consistent patterns of feeling, thinking and behaviour. People's personality can be described as *traits* and *types* (Gross, 2015). Personality traits **are** variables that lie somewhere on a continuum or scale, with all people lying somewhere on the scale. For example, the personality traits extroversion and introversion lie at opposite ends of the scale, with degrees of variation lying between them. A personality *trait* **is** an enduring characteristic of an individual which may have biological origins or be shaped by early environment. A personality type **is** a cluster of several traits and instead of being a continuous variable, is a binary variable, i.e. people either have the personality type or they don't. An example is Type A personality (Friedman & Rosenman, 1974) which is when people are aggressive, dominating and are very goal-orientated.

There are several methods for studying personality, one of which is self-report questionnaires. Although this method has many benefits, there are also many problems. Examples of possible problems include the fact that some people **may** not always be completely trustworthy, or the role that social desirability plays, whereby people **may** want to present themselves as better than they actually consider themselves to be. Another issue is the problem of separating cause and effect. For example, depressed subjects **may** inherently say yes to questions such "Do you tend to worry a lot?" The questionnaire needs to have equal numbers of positive and negatively loaded questions, as some people **have a tendency** to respond in the same way to every question (always say yes or always say no).

Questionnaires need to be designed carefully to show reliability, stability and validity. Reliability, in the sense of whether the various questions measure the same given quality, can be tested by seeing if the first half of the questionnaire gives the same result as the second half. Stability can be tested to see if people perform consistently over time, and validity can be tested by seeing whether the test correlates with an independent measure of the same trait (Myers, 2012).

In a psychology lab report, there is usually an abstract which functions to summarise the entire contents of the report. Sometimes your tutor will not expect you to write an abstract, as shown in this sample. Check this with your tutor.
See Ch 2, Getting started on your lab report

Present simple **tense** used to give defninitions and facts.

Introduction provides the background to the study and defines key terms.

Paragraph giving information about the different research methods available to study this area, with advantages and disadvantages discussed.

Cautious language for making suggestions about problems.
See ch 7,Using cautious language

Sources cited to support the information.

There are many different traits, and factor analysis aims to reduce this number to the core underlying dimensions which account for the majority of the variation between the subjects. There are two main models that have been derived by factor analysis, Eysenck's 3-factor PEN model and Costa and McCrae's The Big Five (Myers, 2012). Which of these models is most applicable represents one of the many ongoing debates in personality theory.

Method:

For this experiment, the **subjects, all of whom were university students aged between 19 and 22 years,** each completed a Barratt questionnaire which consisted of 30 statements and the subject had to circle the number that most accurately described them (1=rarely/never, 2=occasionally, 3=often, 4=almost always/always). The subjects **were told** not to hesitate for too long over any individual answers. Each subject **was assigned** a subject ID and the subject's gender **was coded** as male=0 and female=0. The Barratt questionnaire denotes the Barratt Impulsivity Scale (v11, Patton et al 1995) which measures motor, attentional and non-planning impulsivity. The questionnaire was scored by summing the individual answers in each of the different categories. Ten of the questions were scored backwards as they were statements that indicated a lack of impulsivity. The total score was entered into a results table along with the subject ID and gender code.

The second task performed was the Affective Go-No-Go Task which involved emotional processing and inhibitory control. This task was performed on the computer programme, PsyScope, and each subject had to enter their subject ID number and choose either heads or tails. This random choice determined which block they started with (happy or sad) to ensure that the results were not based on which block was responded to first (habit-forming) as this could cause a positive or negative bias.

In each block, 18 words are presented and each word is either positive or negative valence. In the happy blocks, which correspond to the positive valence, the subject must respond to the happy words by pressing the space bar as quickly as possible, but make no response to the sad words. Similarly, in the sad blocks the subject must respond by pressing the space bar as quickly as possible to the sad words but must not respond to the happy words. The subject knows which block they are in by a set of instructions and if they make an incorrect response then the subject hears a buzzer sound through the

headphones they are wearing. The number of omission errors (failure to respond to targets), commission errors (impulsive responses to distracters) and the affective bias (the reaction time difference between positive and negative valences) were all recorded for each of the subjects.

The results gained from this year were pooled with four other years' results in order to reduce the effect of small anomalies, which, in a smaller results group, may appear as significant (Myers, 2012).

Results:

The results from this experiment are given below in various formats. Table 1 provides a summary of the means for each category in each of the tests, along with standard deviations. **Figure 1 provides a visual representation of the frequency of distribution of scores on the Barrett questionnaires.**

> Present simple tense used to refer to and describe figures, tables, and charts

Table 1: Descriptive statistics

	Barratt Impulsivity Scale Total				Affective Go-No Go Task		
	Attention	Motor	Non-planning	Total	Omission Errors	Commission Errors	Affective Bias
Mean (μ)	18.59	23.29	23.92	65.80	3.92	9.67	-2.00
Standard deviation (σ)	3.89	4.35	4.34	9.84	4.65	6.22	33.28
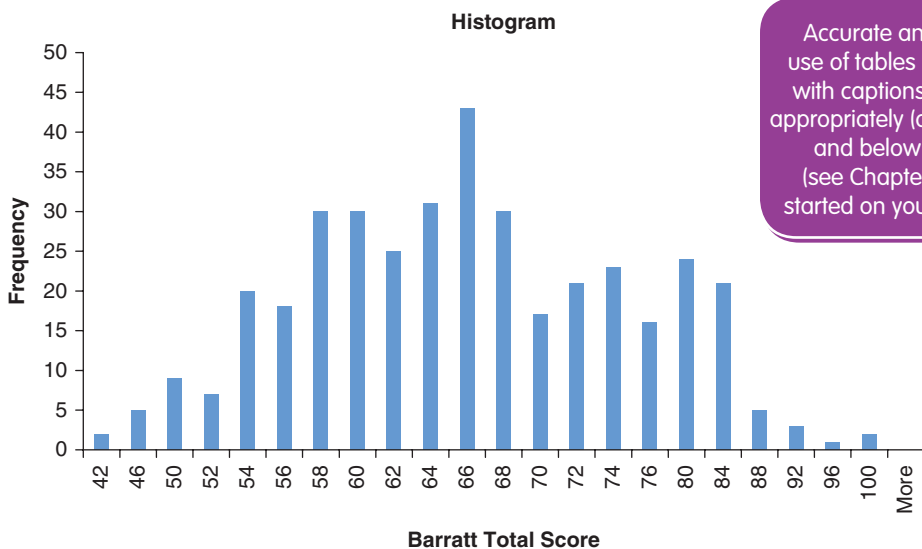
> Accurate and effective use of tables and figures, with captions positioned appropriately (above a table, and below a figure). (see Chapter 2, Getting started on your lab report)

Figure 1: Frequency of scores on the Barrett test

To test if there are any significant differences between the two genders on the Barratt Total Score an independent samples t-test which did not assume equal variances was used, where H_0 is that $\mu_{male} = \mu_{female}$ and H_1 is that $\mu_{male} = \mu_{female}$

Table 2: t-Test: Two-Sample Assuming Unequal variances:

	Variable 1 (Male)	Variable 2 (Female)
Mean	66.36	65.51
Variance	111.61	89.53
Observations	129	255
Hypothesized Mean Difference	0	
df	234	
t Stat	0.77	
P(T<=t) two-tail	0.44	
t Critical two-tail	1.98	

Correlations of the Barratt Total Score with the key variables from the Affective Go-No Go task s were calculated using the Pearson's Product-Moment Correlation Co-efficient. To test the significance of these r-values the following equation was used:

$$t = \frac{r \times (n-2)}{(1 - r^2)}$$

T-critical for a two-tailed test with $\alpha=0.05$ and df(392) is 1.98.

Correct spacing for equations
(see Chapter 2, Getting started on your lab report)

Table 3: Correlations with the Barrett Total Score

Correlations with the Barratt Total Score		T-value
Omission Errors	0.106	2.08
Commission Errors	0.134	2.64
Affective Bias	0.138	2.72

In order to see what extent there is correlation between the key variables of the Affective Go-NO-Go Task ad the Barrett Total Score a scatter graph is shown below (Figures 2, 3, and 4).
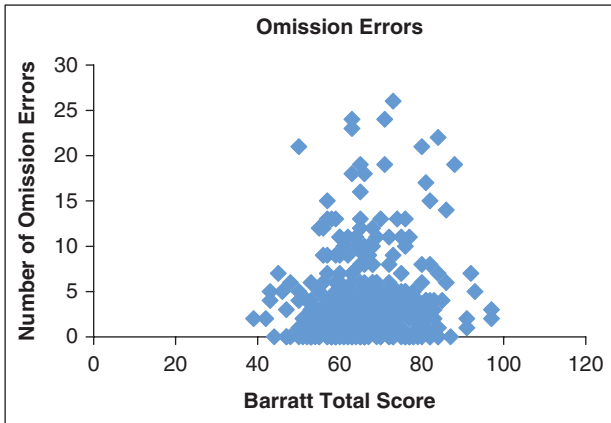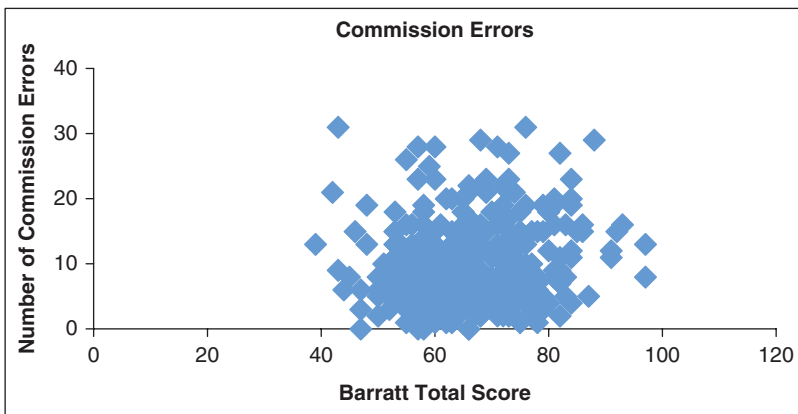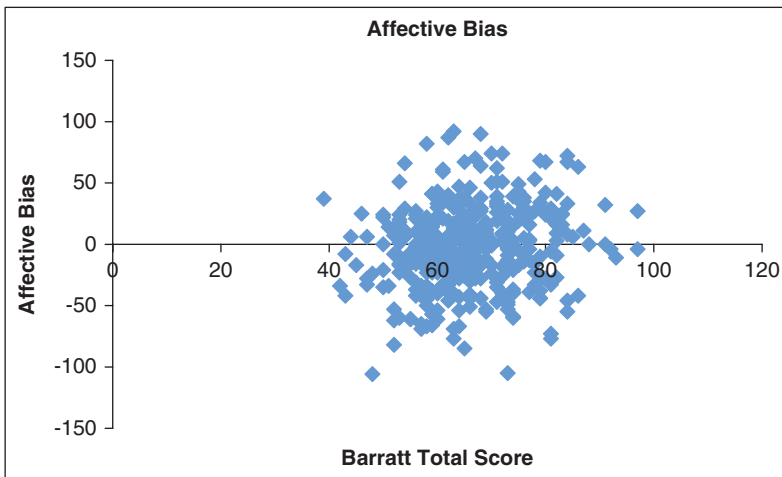
Figure 2: Omission errors

Figure 3: Commission Errors

Figure 4: Affective Bias

Discussion:

Table 1, showing descriptive statistics, describes the mean and standard deviation of the key variables in the Barratt questionnaire and the Affective Go-No Go Task. From this table it is possible to see that, for some variables such as the affective bias, there is a large range of results due to the high values for the standard deviation.

The histogram shown in Figure 1 is not a perfect normal distribution curve though there is a definite maximum frequency at 66 for the Barratt Total Score and either side of this value the frequency decreases, though it does not follow the typical bell-shaped curve. **From Figure 1, it is possible to say that BIS impulsivity is normally distributed in our population**.

The gender difference on the Barratt Total Score was also examined using an independent samples t-test. A t-value of 0.77 was calculated, where the critical t-value was 1.98. This means that there is not statistical evidence to reject H0 and to suggest that there is a significant difference between male and female's Barratt Total Score even though the mean values differ (male: 66.36, female:65.51). **Therefore,** males and females do not differ in BIS impulsivity.

The PPMCC of the Barratt Total Score with the AGNG commission errors was 0.134 which is a very weak positive correlation. The hypothesis stated that the AGNG commission errors **would correlate** significantly with BIS impulsivity as commission errors as impulsive responses to distracters. A t-value of 2.64 was calculated which is much greater than the critical t-value (=1.98), so there is no statistical evidence to reject H0. Therefore, the AGNG commission errors have no significant correlation with the Barratt Total Score.

Our hypothesis also stated that the AGNG omission errors and affective bias would not correlate significantly with BIS impulsivity. The PPMCC was 0.106 and 0.138 respectively, which are also very weak positive correlations, though the correlation between the AGNG affective bias and BIS impulsivity is stronger than between the AGNG commission errors and BIS impulsivity. This is not what was predicted.

The affective bias is calculated as the negative reaction time subtracted from the positive reaction time. As the correlation between the affective bias and the Barratt Total Score is very slightly positive this means that as the Barratt Total Score increases, the difference between the positive and negative reaction times increases very slightly towards a positive affective

Present simple tense used to refer to and describe significance of results

Language of hypothesis: conditional

It is sometimes acceptable to use personal language in Psychology reports. For example, the use of 'our' here. However, this is something you need to check with your tutor. Note that even when it is acceptable, it is infrequent.

bias, and this is associated with depressed subjects (Murphy et al 1999).

The t-values for AGNG omission errors and affective bias were 2.08 and 2.72 respectively which are both greater than the critical t-value and so neither of these PPMCC values are statistically significant. None of the key variables of the AGNG task have any significant correlation with the Barratt total score.

References

Gross, R. 2015. *Psychology: The Science of Mind and Behaviour 7th Ed.* London: Hodder

Patton, J.H.1., Stanford, M.S., & Barratt, E. S., 1995. Factor structure of the Barratt impulsiveness scale. *J Clin Psychol.* (6):768–74.

Rosenman RH, *Friedman* M. 1974. *Neurogenic* factors in pathogenesis of coronary heart disease. *Med Clin North Am.* 1974;58:269–79.

Murphy, F., Sahakian, B., Rubinsztein, J., Michael, A., Rogers, R., Robbins, T. & Paykel, E. (1999). Emotional bias and inhibitory control processes in mania and depression. *Psychological medicine.* 29 (6) 1307-21.

Myers, 2012. *Psychology*, London: Macmillan.

Diana and Tom's Comment

This psychology experimental lab report provides a clear description of the situation and background, clarifying key terminology, using sources to support their information. The method is described in sufficient depth for another researcher to carry out the experiment. The results are given using well laid-out and varied tables and figures, and the reader is referred to these in the written description. The Discussion is clear, showing the significance of the results. This lab report could be improved, however, with greater discussion in the final section on limitations, and recommendations for further studies.