

Ollscoil na hÉireann, Gaillimh

NATIONAL UNIVERSITY OF IRELAND, GALWAY

1HS1, MPSYCHSC IN HEALTH PSYCHOLOGY, FIRST YEAR, 2004-2005

Paper 2

PS564 Research Methodology in Health Psychology Studies
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Time Allowed: 3 hours

Candidates are required to answer two questions from Section A and one question from Section B. All questions carry equal marks.

Section A – Statistics (Answer two questions from this section)

1. The following is a table of results from the analysis of a two-way independent ANOVA on the effects of level of self esteem (high/low) and feedback (positive/negative) on cardiovascular reactivity (Table 1). Table 2 contains the mean difference in systolic blood pressure (time 2 (after feedback) – time 1 (baseline)) for each of the four conditions.

Table 1 – Results of a two-way mixed ANOVA on the effects of self esteem and feedback on cardiovascular reactivity.

Source of variance	Sums of squares (SS)	df	Mean Squares (MS)	F Ratios	p
Var. A (Self Esteem)	49.90	1	49.90	38.98	<0.01
Var. B (Feedback)	26.16	1	26.16	20.44	<0.01
AxB	30.02	1	30.02	23.45	<0.01
Within (Error)	28.13	22	1.28		
Total		25			

Table 2 – Mean cardiovascular reactivity in each of the 4 conditions.

Self esteem		
Feedback	High	Low
Positive	16.58	11.35
Negative	6.26	28.23

Write up the results of this ANOVA in a style consistent with that recommended by the American Psychological Association (APA), including in your results an interaction graph of the relationship between self esteem and feedback on reactivity. (100%)

2. A mixed ANOVA was conducted to examine effects of an intervention to reduce anxiety in dental patients. Baseline anxiety measures were taken prior to relaxation training in the experimental group. The control group underwent a similar procedure, but without relaxation training. Anxiety was tested again after their consultation. The SPSS printout of the results is presented in the tables below.

Descriptive Statistics

GROUP		Mean	Std. Deviation	N
BEFORE	experimental	66.30	15.384	10
	control	69.00	11.954	10
	Total	67.65	13.480	20
AFTER	experimental	43.2000	12.86511	10
	control	55.2000	7.59825	10
	Total	49.2000	10.73411	20

Tests of Between-Subjects Effects

Measure: MEASURE_1

Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	107848.225	1	107848.225	414.796	.000
GROUP	189.225	1	189.225	.728	.025
Error	4680.050	18	260.003		

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
ANXIETY (Time)	Sphericity Assumed	1311.025	1	1311.025	31.665	.000
	Greenhouse-Geisser	1311.025	1.000	1311.025	31.665	.000
	Huynh-Feldt	1311.025	1.000	1311.025	31.665	.000
	Lower-bound	1311.025	1.000	1311.025	31.665	.000
ANXIETY * GROUP	Sphericity Assumed	27.225	1	27.225	.658	.428
	Greenhouse-Geisser	27.225	1.000	27.225	.658	.428
	Huynh-Feldt	27.225	1.000	27.225	.658	.428
	Lower-bound	27.225	1.000	27.225	.658	.428
Error(ANXIETY)	Sphericity Assumed	745.250	18	41.403		
	Greenhouse-Geisser	745.250	18.000	41.403		
	Huynh-Feldt	745.250	18.000	41.403		
	Lower-bound	745.250	18.000	41.403		

Write up the results of this analysis in a style consistent with that recommended by the American Psychological Association (APA). (100%)

3. (a) What are the assumptions of multiple linear regression? (10%)

(b) Outline the similarities and differences between standard and hierarchical multiple regression. (30%)

(c) A hierarchical multiple regression was conducted to examine the influence of the Theory of Planned Behaviour factors (subjective norm, attitude and perceived behavioural control) on intention to exercise. Age was controlled for on the first step, and the TPB variables were entered on the second step. The SPSS results are presented below.

Model Summary

Model	R	R Square	Adjusted R Square	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
1	.081 ^a	.007	.006	.007	6.174	1	931	.013
2	.609 ^b	.371	.369	.365	179.437	3	928	.000

a. Predictors: (Constant), age

b. Predictors: (Constant), AGE, SUBJECTIVE NORM, ATTITUDE, PERCEIVED BEHAVIOURAL CONTROL.

ANOVA^c

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.932	1	4.932	6.174	.013 ^a
	Residual	743.687	931	.799		
	Total	748.619	932			
2	Regression	277.954	4	69.488	137.009	.000 ^b
	Residual	470.665	928	.507		
	Total	748.619	932			

a. Predictors: (Constant), age

b. Predictors: (Constant), AGE, SUBJECTIVE NORM, ATTITUDE, PERCEIVED BEHAVIOURAL CONTROL

c. Dependent Variable: INTENTIN

Coefficients ^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	31.076	.980		31.703	.000		
	AGE	-3.122E-02	.022	-.070	-1.442	.150	.928	1.077
2	(Constant)	49.528	1.464		33.839	.000		
	Age	-3.122E-02	.022	-.070	-3.490	.001	.915	1.092
	Subjective norm	-3.381E-03	.017	-.008	-.195	.845	.913	1.096
	Attitude	-.236	.037	-.273	-6.378	.000	.759	1.317
	Perceived Behav control	-.457	.047	-.422	-9.717	.000	.741	1.349

a. Predictors: (Constant), AGE, SUBJECTIVE NORM, ATTITUDE, PERCEIVED BEHAVIOURAL

Write up the results of this regression in a style consistent with that recommended by the American Psychological Association (APA), using a properly formatted table to summarise your results. (60%)

4. Write notes on **three** of the following:
- Sampling issues in psychological research
 - Multivariate analysis of variance (MANOVA)
 - Logistic regression
 - The use of correlation in psychological research
 - Analysis of covariance
 - Type I and Type II errors
 - Independent-groups designs.

Section B – Research Methods (Answer one question from this section)

1. Discuss the use of *patient series designs* and *quasi-experimental* designs in health psychology, outlining the advantages and disadvantages associated with each.
2. Combining qualitative and quantitative methods in health psychology research can take advantage of the strengths of one approach and compensate for the known limitations of the other. Discuss.