

In-class test December 2015

FACULTY OF: BUSINESS AND MANAGEMENT

NAME OF COURSE/PROGRAMME: Doctor of Business Administration

YEAR OR LEVEL: Level 7

NAME OF MODULE: Quantitative Research Methods

MODULE NO: SBPD7008

DATE OF IN-CLASS TEST:

START TIME:

FINISH TIME:

TIME ALLOWED: 2 hours

INSTRUCTIONS TO CANDIDATES:

All questions on the examination paper should be attempted.

QUESTION ONE

What scale of measurement is most appropriate for each of the following?

- attitudes towards currency exchange controls - **interval**
- numbering of houses along a road - **nominal**
- scores on an accountancy test - **interval**
- annual income in GBP - **ratio**
- government departments - **nominal**
- Janice is the most popular member of the group - **ordinal**
- results of a beauty contest - **ordinal**
- time taken to complete a task - **ratio**
- nationality - **nominal**
- Temperature, expressed in F or C - **interval**

(10 marks)

QUESTION TWO

A random sample of customers of a bank were surveyed after they had been served to determine how long they waited in seconds for service in line under the bank's existing queuing system 1. The bank then instituted a new queuing system (2) and resurveyed the same customers. Partial printout of the test results is provided below. Review the printout and answer the questions.

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	queueing system 1 & queueing system 2	438	.532	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	queueing system 1 - queueing system 2	3.8402	2.84167	.13578	3.5733	4.1070	28.28	437	.000

- Which test of differences was used and why?
- Briefly state the assumptions of the test.
- How many customers were surveyed?
- Propose a null and alternative hypotheses for the test.
- Can you tell which queuing system performs better given the results of the test? Explain why, quoting your evidence.
- What would be the Type 1 error? Briefly explain in context?
- Assume the assumptions of the test you stated in (b) are broken for this test, you decided to conduct a non-parametric test. Explain which test would you conduct and why.
- If the bank were to institute more than 2 queuing systems, which test of differences should you use?

(10 marks)

QUESTION THREE

Study the following correlation matrix then answer the questions below.

Correlations

		Work interferes with my social life	I spend too much time travelling to work	Personal issues reduce my work effectiveness	I struggle with living expenses
Work interferes with my social life	Pearson Correlation Sig. (2-tailed) N	1 .80	.436(**) .000 80	.159 .158 80	.026 .817 80
I spend too much time travelling to work	Pearson Correlation Sig. (2-tailed) N	.436(**) .000 80	1 .80	.223(*) .047 80	-.013 .907 80
Personal issues reduce my work effectiveness	Pearson Correlation Sig. (2-tailed) N	.159 .158 80	.223(*) .047 80	1 .80	.235(*) .036 80
I struggle with living expenses	Pearson Correlation Sig. (2-tailed) N	.026 .817 80	-.013 .907 80	.235(*) .036 80	1 .80

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

- Identify variables that are positively correlated. At what level of significance are they?
- Which level of data has been used?
- How many subjects were there?
- State a null hypothesis linking work interference with social life and struggling with living expenses. Is this null hypothesis rejected or supported? Explain your answer.
- What does the correlation between 'I struggle with living expenses' and 'I spend too much time traveling to work' imply?

(10 marks)

QUESTION FOUR

Below you can see the results of a regression analysis. Dependant variable for all: **Satisfaction with use of cash machine**

	R Square = .650 Adjusted R Square = .630 F= 32.056		
	Standardized Beta	t	Sig.
(Constant)		-1.114	0.267
gender	0.036	0.868	0.387
age	-0.044	-1.029	0.305
Same ATM	-0.065	-1.233	0.219
Same Bank	0.207	3.858	0.000
Perceived Value	0.284	5.743	0.000
Useability	0.327	6.512	0.000
Security	0.019	0.393	0.695
Quality	-0.090	-1.859	0.064
Expectations	-0.046	-1.012	0.312
Trust	0.355	5.732	0.000
Behavioral Intentions	0.010	0.169	0.866

- Identify the research question
- What does the F-statistic in the table tell you?
- Provide brief comment on R^2 in context
- Interpret the results (briefly) quoting evidence from the table

(16 marks)

QUESTION FIVE

- Give a non-mathematical definition of the 'Cronbach Alpha Score'
- Explain why these scores are important and how they are used in quantitative analysis

(4 marks)