



UNIVERSITY OF RUHUNA

FACULTY OF MANAGEMENT AND FINANCE

Bachelor of Business Administration Degree Programme 3000 Level

Semester II End Examination (April 2021)

Academic Year 2019/2020

MKT 3250 – Marketing Research Analysis

Duration: Three hours

The question paper contains five (05) questions.

Answer all questions.

01. a) Distinguish between one-way ANOVA and n-way ANOVA using an example.

(06 Marks)

b) Briefly explain the following concepts.

- i. Mode
- ii. Median
- iii. Mean
- iv. Skewness

(08 Marks)

(Total Marks = 14)

02. a) Compare and contrast independent samples  $t$  test and paired samples  $t$  test.

(06 Marks)

b) Explain the concept of 'multicollinearity' in a research setting.

(08 Marks)

(Total Marks = 14)

03. A researcher wanted to test if consumer preference for a restaurant brand differs among two usage groups, in which the usage was coded as 1 and 2, representing light and heavy users respectively. Considering preference as interval scaled, the researcher conducted an independent samples *t* test to test the hypothesis. The SPSS output tables are given below.

Group Statistics					
	Usage	N	Mean	Std. Deviation	Std. Error Mean
Preference	Light	62	3.7204	.93152	.11830
	Heavy	139	3.7050	.89107	.07558

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Preference	Equal variances assumed	.111	.740	.112	199	.911	.01539	.13801	-.25675	.28754
	Equal variances not assumed			.110	112.660	.913	.01539	.14039	-.26274	.29353

- How many respondents are included in the sample?  
(02 Marks)
- Formulate the null and the alternative hypothesis.  
(04 Marks)
- Does the researcher need to assume equal or unequal variances in two populations when testing the hypothesis? Explain.  
(04 Marks)
- Interpret the results.  
(04 Marks)

**(Total Marks = 14)**

04. A researcher performed a multiple regression analysis with SPSS to test the effects of brand love, brand trust and brand commitment on brand loyalty. The SPSS output tables with some blanks are given below.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.458 <sup>a</sup>	(...A...)	.197	.71610

a. Predictors: (Constant), Brand love, Brand trust, Brand commitment

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26.752	3	8.917	(...C...)	.000 <sup>b</sup>
	Residual	(...B...)	197	.513		
	Total	127.773	200			

a. Dependent Variable: Brand loyalty  
b. Predictors: (Constant), Brand love, Brand trust, Brand commitment

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.144	.345		3.311	.001
	Brand love	.380	.067	.366	(...D...)	.000
	Brand trust	.057	.058	.065	.972	.332
	Brand commitment	.162	.061	.182	(...E...)	.009

a. Dependent Variable: Brand loyalty

a) Fill in the blanks (A, B, C, D and E) in the above tables.

(05 Marks)

b) Determine the significance of the overall regression model at  $\alpha = 0.05$  and interpret the  $R^2$ .

(03 Marks)

c) Determine the significance of the partial regression coefficients at  $\alpha = 0.05$ .

(03 Marks)

d) Interpret the partial regression coefficients.

(03 Marks)

(Total Marks = 14)

05. The table given below outlines a portion of an output from principal component analysis.

Variable	Communality	Factor	Eigenvalue	% of Variance
V <sub>1</sub>	1.0	1	3.25	.....(A).....
V <sub>2</sub>	1.0	2	1.78	.....(B).....
V <sub>3</sub>	1.0	3	1.23	.....(C).....
V <sub>4</sub>	1.0	4	0.78	.....(D).....
V <sub>5</sub>	1.0	5	0.35	.....(E).....
V <sub>6</sub>	1.0	6	0.30	.....(F).....
V <sub>7</sub>	1.0	7	0.19	.....(G).....
V <sub>8</sub>	1.0	8	0.12	.....(H).....

a) Fill in the blanks (from A to H) in the above table.

(08 Marks)

b) Draw a screen plot based on the data given.

(02 Marks)

c) How many factors should be extracted? Explain.

(04 Marks)

**(Total Marks = 14)**

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