



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2017/2018

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY IN BUSINESS

BMS 919: DATA ANALYSIS AND MEASUREMENT

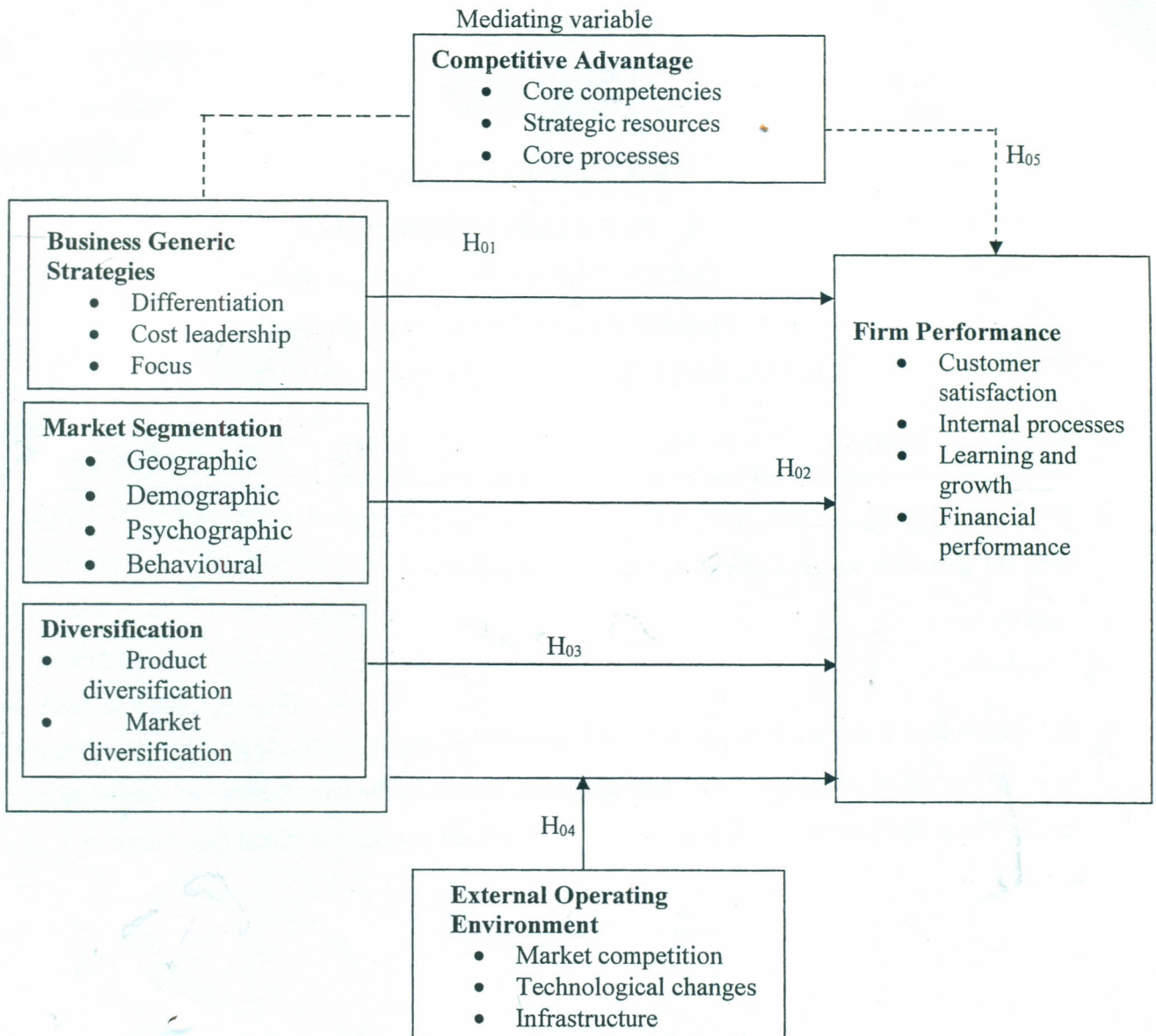
DATE: Thursday, 30th November 2017

TIME: 5.30 p.m. - 8.30 p.m.

INSTRUCTIONS:

Answer question one and any other three questions.

The conceptual framework below was derived from theoretical and empirical literature reviews by a PhD candidate. However, the candidate didn't develop the hypotheses and empirical models for the study. Review the conceptual framework and answer the questions that follow.



Independent Variables

Moderating Variable

Dependent variable

- Develop six hypotheses to be used in the study (3 Marks)
- Develop empirical models which could be used to test the hypotheses stated (6 Marks)
- Clearly illustrate with a diagram/figure how to test the mediation variable as recommended by Baron and Kenny (1986) (6 Marks)

- d) A study was carried out on the degree of job satisfaction among doctors and nurses in rural and urban areas in Kenya. To describe the sample, a cross-tabulation was constructed using dimensions of sex(male or female) and residence (rural or urban) of doctors and nurses interviewed as shown in Table 4.1

Table 4.1 Degree of Job Satisfaction among Doctors and Nurses

Health Workers		Residence		Total
		Rural	Urban	
Doctors	Male	8 (10%)	35 (21%)	43 (18%)
	Female	2(3%)	16(10%)	18(7%)
Nurses	Male	46(58%)	36(22%)	82(34%)
	Female	23(29%)	77(47%)	100(41%)
Total		79(100%)	164(100%)	243(100%)

Required

- i) Provide a suitable justification for the use of cross tabulation in the study (2 Marks)
 - ii) Discuss the results presented in Table 4.1 (3 Marks)
- e) Two of the diagnostic analysis carried out on the data collected in a survey investigating the influence of industry related factors on performance of Barclays Bank in Nairobi City County are reported in Tables 4.2 and 4.3 below

Table 4.2 Collinearity Statistics

Variables	Tolerance	VIF
Knowledge conversion	.345	2.897
Knowledge transfer	.735	1.361
Knowledge application	.193	5.186
Firm's Culture	.117	8.572
Human Capital repository	.145	6.884

Source: Field Data

Table 4.3 Levene Statistic

Variables	Levene Statistic	df1	df2	Sig.
Knowledge Conversion	9.843	7	147	.079
Knowledge Transfer	4.532	7	147	.733
Knowledge Application	8.440	7	147	.116
Firm's Culture	6.265	7	147	.194
Human Capital Repository	7.709	7	147	.063

Source: Field Data

Required

- Provide the rationale for using each of the two diagnostic tests (6 Marks)
- Interpret the results displayed in Tables 4.2 and 4.3 (6 Marks)
- Normal distribution fits characteristics of most research variables. Provide a succinct account on any four properties of normal distribution (8Marks)

QUESTION TWO

- a) A researcher wishes to try three different techniques to lower the blood pressure of individuals diagnosed with high blood pressure. The subjects are randomly assigned to three groups; the first group takes medication, the second group exercises, and the third group follows a special diet. After four weeks, data on the reduction in blood pressure is subjected to test of one way analysis of variance (ANOVA) at $\alpha = 0.05$. The output of the test are given below

ANOVA

Table 4.4 Blood Pressure

	Sum ofSquares	df	Mean Square	F	Sig.
Between Groups	160.133	2	80.067	9.168	.004
Within Groups	104.800	12	8.733		
Total	264.933	14			

Required:

- Explain the conditions under which this test may be conducted (5 Marks)
- Interpret the results and arrive at a conclusive decision (3 Marks)

- b) Type I error and type II error are inversely related, as a PhD candidate differentiate between the two types of error and explain how you can prevent both errors during data analysis (12 Marks)

QUESTION THREE

- a) Explain the assumptions that must be satisfied for valid use of Pearson correlation during data analysis. To what extent do researchers check for and ensure this? (8 Marks)
- b) Lagat a PhD candidate hypothesised that usage of online retailing services depended on the following variables:-

X_1 = Perceived Attributes

X_2 = Perceived Risk

X_3 = Perceived Value

He performed a multiple linear regression and got the following results.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.(p)
	B	Std. Error	Beta		
(Constant)	.627	.301		2.083	.039
X_1	.450	.041	.623	10.942	.000
X_2	-.107	.040	-.119	-2.676	.008
X_3	.238	.047	.238	5.106	.000

Required:

- (i) Construct a Regression model from the above output. (6 Marks)
- (ii) State whether X_1 , X_2 , and X_3 are statistically significant in explaining the variation of the response variable Y. (6 Marks)

QUESTION FOUR

Provide a succinct account on each of the following and explain the circumstances under which each one of them can be used

- i) Factor analysis (5 Marks)
- ii) Logistic regression (5 Marks)
- iii) Independent T-test (5 Marks)
- iv) Multiple response analyse (5 Marks)

QUESTION FIVE

- a) Describe the main reasons of variability that is encountered in research data (1 Mark)
- b) Explain **three** approaches the researcher may use to deal with missing data (3 Marks)
- c) Examine the difference between the following
 - i) Nominal and Ordinal variables (4 Marks)
 - ii) Inferential and descriptive statistics (4 Marks)
 - iii) Face and content validity (4 Marks)
- iv) Unit of analysis and unit of observation (4 Marks)