



PAN AFRICA CHRISTIAN UNIVERSITY

PhD IN ORGANIZATIONAL LEADERSHIP AND DEVELOPMENT

END OF SEMESTER EXAMINATION

DEPARTMENT

LEADERSHIP

COURSE CODE

POLD 709

COURSE TITLE

ADVANCED QUANTITATIVE RESEARCH

EXAM DATE

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TIME

Duration

3 hours

See a few comments below.

INSTRUCTIONS

- Read all questions carefully.
- ANSWER question one and One question from section 2 (20 Marks)

SECTION 1 - COMPULSORY

QUESTION ONE

CSN Ltd, a large retail trading company in the East African Community region faces a serious cashflow problem to the extent that suppliers are threatening to stop any further supplies. An extraordinary general meeting was called three months ago to discuss the matter. The shareholders were not convinced by the CEO's explanations about the reasons for the poor performance because during the same period, two other retail chains in the same business had opened a shop and appeared to be doing well. The CEO's explanation tended to blame the poor performance on prevailing external environmental conditions. The board was of the view that the declining performance was much more influenced by the company's internal conditions including decisions and how the decisions were being made, executed and management's emphasis on controls. Due to this, the CEO was asked to step aside and a business consultant hired to look into the possible reasons for the business failure.

After two months perusing through records and discussing with employees, the consultant issued preliminary findings that indicated that: (1) the company had sunk huge investments in construction of retail outlets in the last four years, (2) there is lack of long term strategy (3) The marketing department is not properly manned by qualified managers, (4) There is little or no sales promotions (while competitors were doing so regularly), (5) Too much capital is tied up in fixed assets, (6) Poor stores control has led to stock pilferage, hence the book records do not reflect the physical stock.

The Board of directors is now considering the implications of the consultant's preliminary findings with a view to adopting a new strategic move that would see the company turnaround its performance from the state of decline. The board however fears that even though the preliminary findings are convincing, they are based on information obtained through qualitative approaches whose credibility may be questioned. The board is further suggesting that before a decision is made on the strategy to embrace, the consultant needs to carry a more robust survey to produce a more persuasive case with clear set of recommendations.

Required:

- a) Briefly describe the Leadership problem depicted in the case of CSN Ltd.(1Mark)
- b) From a scientific research point of view, explain four characteristics of research that give possible reasons as to why the board is not fully persuaded to adopt a new strategic decision based on the preliminary findings.(1Mark)
- c) Explain the limitations of the qualitative approach that the consultant relied upon to come up with the preliminary report.(1Mark)
- d) State four objectives that will guide the study and the corresponding hypotheses in the null form.(2Marks)
- e) If a new survey is to be undertaken as requested by the board, sketch a simple conceptual framework with a clear set of variables that should be investigated so as to guide the consultant.(2Marks)

- f) Suggest possible methodological areas the consultant needs to focus on so as to improve on the weaknesses found with the preliminary report.(1.5 Marks)
- g) Recommend with justification the most appropriate research paradigm for the consultant to adopt.(1.5 Marks)

SECTION 2 – ANSWER ANY ONE QUESTION

QUESTION TWO

(A)A recent survey was undertaken in the Financial Sector to understand the characteristics of the Top Leadership of organizations in the sector. The lead researcher submitted the results summarized in Table 1 on the findings.

TABLE 1: DESCRIPTIVE STATISTICAL DATA

Type of Management Characteristic	N	Min	Max	Mean	SD
Initiators of change	129	1.00	5.00	4.09	.86
Future oriented	129	1.00	5.00	4.05	.90
Market opportunity driven	129	1.00	5.00	3.94	.89
System oriented	129	1.00	5.00	4.09	.88
Transformational	129	1.00	5.00	3.99	.95
Environmental focused	129	1.00	5.00	3.93	1.01
Aggregate score				4.01	0.93

Required:

- i. Provide a suitable interpretation to the managers of the Finance Sector on the research regarding the study sample drawn from the population and the instrument used to collect the data.(1.5 Marks)
- ii. Interpret to the managers the message in the columns indicated "Mean" and "SD" for each management characteristic.(1.5 Marks)

(B) A recent study sought to investigate the contribution of leadership capabilities on performance of banks in selected countries in the COMESA Region. The sponsors of the research however felt that investigating leadership capability alone would be too limiting in offering a plausible explanation on all factors influencing bank performance in the region. Their argument was based on the logic that though the leadership capabilities may explain to some degree the contribution to performance, the contribution is likely to be conditioned by the size of each bank. The researchers were therefore advised to include a contingency factor of bank size. The primary research data was analyzed in a series of linear regression models and the outputs presented in tables 2-4.

TABLE 2: Regression Results of the Composite of Leadership Capabilities on Bank Performance

Model Summary						
Model 1	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin- Watson	
1	.549 ^a	.301	.294	.27367	1.579	
Anova						
Model	Sum of Squares		Df	Mean Square	F	Sig.
Regression	3.481		1	3.481	46.476	.000 ^b
Residual	8.089		108	.075		
Total	11.569		109			
Coefficients						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
(Constant)	1.944	.360		5.404	.000	
Leadership Capabilities	.546	.080	.549	6.817	.000	

TABLE 3: Regression results of Leadership capabilities, Bank Size and Performance

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	
1	.791 ^a	.626	.619	.20111	1.658	
ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
Regression		7.242	2	3.621	89.530	.000 ^b
Residual		4.328	107	.040		
Total		11.569	109			
Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
(Constant)		1.218	.275		4.431	.000
Bank Size		.767	.080	.821	9.643	.000
Leadership Capabilities		-.042	.085	-.042	-.498	.619

TABLE 4 : Regression for Leadership Capabilities, Bank Size, and Interaction Term on Performance

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	
1	.819 ^a	.670	.661	.18979	1.706	
ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
Regression		7.751	3	2.584	71.734	.000 ^b
Residual		3.818	106	.036		
Total		11.569	109			
Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
(Constant)		2.049	.341		6.013	.000
Bank Size		.597	.088	.639	6.808	.000
Leadership Capabilities		-.337	.112	-.338	-3.006	.003
Leadership Capabilities*Bank Size		.063	.017	.492	3.761	.000

Required:

- i. Present the mathematical equation for each of the regression outputs in Tables 2-3 (2Marks).
- ii. State two hypotheses in the null form that are suitable for testing in this research.(1Mark)
- iii. Advise the sponsors of the research on the:
 - a) contribution of leadership capabilities to Bank performance.(1Mark)
 - b) effect of leadership capabilities on Bank performance.(1Mark)
- iv. Based on a comparison between table 3 and table 4 contents, advise the sponsors on:
 - a) how the contribution of leadership capabilities is affected by the bank size. (1Mark)
 - b) whether the contingent factor of bank size moderates the relationship between leadership capabilities and firm performance.(1Mark)

QUESTION THREE

(A.) In a postgraduate seminar class, the professor for statistics advised the team of upcoming researchers on the value of reporting diagnostic tests prior to presentation of inferential results in any research project. The professor tabled some output obtained from a research that sought to explain the role of the various dimensions of leadership strategy in successful implementation of strategies among manufacturing firms in the Bio-Technology industry. The results were summarized in Tables 5-7.

Table 5: Preliminary Data Diagnostic Review

Shapiro-Wilk Test Results						
Variable	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Quantity of Leaders	.049	276	.200*	.993	276	.233
Quality of Leaders	.059	138	.200*	.990	138	.418
Skills & Behaviour	.065	77	.200*	.989	77	.724
Culture	.069	276	.003	.991	276	.099
Leadership Behavioural Focus	.064	276	.008	.992	276	.127
Industry External Context	.070	83	.200*	.988	83	.642

Table 6: Levene's Test					
		Levene Statistic	df1	df2	Sig.
Quantity of Leaders	Based on Mean	1.801	1	122	.182
	Based on Median	.418	1	122	.519
	Based on Median and with adjusted df	.418	1	108.732	.519
	Based on trimmed mean	1.196	1	122	.276
Quality of Leaders	Based on Mean	3.165	1	122	.078
	Based on Median	.420	1	122	.518
	Based on Median and with adjusted df	.420	1	80.727	.519
	Based on trimmed mean	.857	1	122	.356
Skills & Behaviour	Based on Mean	.927	1	122	.338
	Based on Median	.287	1	122	.593
	Based on Median and with adjusted df	.287	1	75.353	.594
	Based on trimmed mean	.381	1	122	.538
Leadership Culture	Based on Mean	2.275	1	122	.134
	Based on Median	.353	1	122	.554
	Based on Median and with adjusted df	.353	1	75.303	.554
	Based on trimmed mean	.586	1	122	.445
Leadership Behavioural Focus	Based on Mean	.094	1	122	.760
	Based on Median	.046	1	122	.830
	Based on Median and with adjusted df	.046	1	120.488	.830
	Based on trimmed mean	.003	1	122	.960
Industry External Context	Based on Mean	3.028	1	122	.084
	Based on Median	1.849	1	122	.176
	Based on Median and with adjusted df	1.849	1	96.283	.177
	Based on trimmed mean	2.092	1	122	.151

Table 7: Correlations

Dimension of Leadership Strategy	Quantity of leaders	Quality of leaders	Skills & Behaviour	Leadership Culture	Leadership behavioral focus	Industry External context
Quantity of Leaders	1.000					
Quality of Leaders	.754**	1.000				
Skills & Behaviour	.668**	.747**	1.000			
Leadership Culture	.551**	.593**	.531**	1.000		
Leadership Behavioural Focus	.705**	.692**	.558**	.700**	1.000	
Industry External Context	.478**	.406**	.336**	.459**	.524**	1.000
Sig.	.000	.000	.000	.000	.000	

N 108 108 108 108 108 108
 **. Correlation is significant at the 0.01 level (2-tailed).

Required:

- i Advise the Researchers on the type of diagnostic tests represented by table 5-7 contents and the assumption underlying the test. **(1Mark)**
- ii Advise the Researchers whether the assumption tested in each table has been violated or complied with. **(1Mark)**

(B) A Study was carried out to measure the effect of Public Sector Reform Programs on Sustainability of Government funded projects. The view of the researchers was that for the sustainability to be realized, the reforms need to generate an appropriate level of competence among projects if sustainability is to be realized. The researchers then collected primary data on the constructs of Reforms, Leadership Competence and Project Sustainability. Stepwise regression analysis was employed and the results presented in four steps as summarized in Tables 8-11.

Table 8: Regressing Composite of Pubic sector Reforms on Sustainability

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	
1	.549 ^a	.301	.294	.27367	1.579	
Anova						
Model	Sum of Squares		Df	Mean Square	F	Sig.
Regression	3.481		1	3.481	46.476	.000 ^b
Residual	8.089		108	.075		
Total	11.569		109			
Coefficients						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
(Constant)	1.944	.360		5.404	.000	
Public Sector Reforms	.546	.080	.549	6.817	.000	

Table 9: Regressing Public Sector Reforms on Leadership Competence

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	
1	.544 ^a	.295	.289	.29422	1.740	
ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
Regression		3.921	1	3.921	45.300	.000 ^b
Residual		9.349	108	.087		
Total		13.271	109			
Co-efficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
(Constant)		1.792	.387		4.635	.000
Public Sector Reforms		.580	.086	.544	6.731	.000

Table 10: Regressing Leadership Competence on Sustainability

Model Summary ^b						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	
1	.837 ^a	.700	.698	.36379	1.954	
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39.258	1	39.258	296.644	.000 ^b
	Residual	16.807	127	.132		
	Total	56.065	128			
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.634	.194		3.258	.001
	Leadership competencies	.822	.048	.837	17.223	.000

Table 11: Regressing composite of Public Sector Reforms and Leadership Competence on Sustainability

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.733 ^a	.537	.528	.22385	1.762

ANOVA					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	6.208	2	3.104	61.948	.000 ^b
Residual	5.361	107	.050		
Total	11.569	109			

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.976	.322		3.028	.003
Public Sector Reforms	.233	.078	.234	2.985	.004
Leadership Competence	.540	.073	.578	7.378	.000

Required:

- What is the effect of Public Sector Reforms on Sustainability of Government funded projects?(2Marks)
- What is the effect of Leadership Competence on Sustainability of Projects?(2Marks)
- Compare the results presented in table 8 and 11 and comment on the kind of change observed in both the effect of Public sector reforms and its contribution to sustainability(2Marks).
- Advise the head of public service on the conclusion you would make based on the observations obtained from (iii) above.(2Marks)

QUESTION FOUR:

(A) A debate arose in a postgraduate class revolving around basic competences a statistician needs to have. In consultation with their professor, they build a consensus on these competences to rest upon the process of analysis of data from its raw form to reporting findings in a way that would enable decision makers derive suitable recommendations for informing policy.

Required:

- Explain to the Class the logical steps you would follow to analyze and interpret different types of quantitative research data. (1.5 Marks)
- Briefly describe the relevant statistical techniques applicable at different stages of data analysis and the roles played by each technique.(1.5 Marks)

(B) The Director of Marketing of a fast moving consumer goods company has been tasked to identify areas for improvement among members of the sales team so as to increase the company's market share. The director considered engaging members of the channels of distribution to obtain their opinions on most critical areas to focus on. Three areas were identified as:

- Personal Presentation
- Selling Skills
- Product Knowledge

The research assistant appointed by the director submitted the preliminary summary of the fieldwork in the form of a Tally Sheet presented in Figure 1.

Figure 1: Tally Sheet on Distributors Responses on each of the critical areas

Market Region	Required Area of Improvement		
	Personal Presentation	Selling Skills	Product Knowledge
Eat Africa	 	//	
North Africa		 	
Southern Africa			

Required:

- Generate the Frequency Table for the Director from this Tally Sheet. (2Marks)
- Present a Cross Tabulation table on the summary of the responses(2Marks)
- Advise the Director of marketing on the most preferred area of focus for each market region(3Marks)

*****THE END*****