



PAN AFRICA CHRISTIAN UNIVERSITY
SCHOOL OF LEADERSHIP, BUSINESS AND TECHNOLOGY
SPECIAL EXAMINATION FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY IN ORGANZATIONAL LEADERSHIP
DEVELOPMENT

SEPTEMBER -DECEMBER 2025 TRIMESTER

CAMPUS: ROYSAMBU

DEPARTMENT: LEADERSHIP

COURSE CODE: POLD709

COURSE TITLE: ADVANCED QUANTITATIVE RESEARCH

EXAM DATE: WEDNESDAY 17TH DECEMBER 2025

TIME: 6:00PM-9:00PM

INSTRUCTIONS

- Read all questions carefully before attempting.
- This examination script consists of **FOUR (4)** questions.
- Answer question **ONE** and ANY other **ONE** Question.
- ALL other PAC University examinations rules and regulations apply.

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

.....

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

A PHARMACEUTICAL INDUSTRY SERVANT LEADERSHIP DILEMMA

The Pharmaceutical Industry serves a critical role in the health care sector as nations of the world seek to attain universal health for all citizens. The universal health care need raises challenges for the industry because the healthcare need requires satisfaction among all segments of the market including those that are in the low income economic brackets that may affect the industry's long term sustainability. In an industry forum where the captains of the Pharmaceutical industry gathered to address its sustainability, it was suggested that adoption of a servant leadership style would enhance the possibility of attaining the long-term sustainability in terms of the metrics of environment, social and profits. The industry leaders however expressed reservations on the suitability of this leadership style to the nature of business undertaken as well as the external contexts it operates in. One of the executives reported that in their company, they had implemented several dimensions of servant leadership as guided by pieces of information they had obtained from the work of Greenleaf (2007) but the preliminary reports obtained from their data analytics office was indicating that the company may have achieved an inverse effect of the

investments in servant leadership on the company's sustainability. However, a management consultant who had been keenly listening offered to make an observation on what was now beginning to shape the agenda of the meeting. In his observation, he suggested that the situation required further interrogation and seek to obtain answers to important concerns such as (i) how was the servant leadership style implemented in the company? (ii) were there specific programs initiated by the industry leaders that focused on generating desired employee behaviors so as to support the goal for sustainability? (iii) was the design of the program for servant leadership in the company aligned to the external contextual challenges and demands that the company has been facing? (iv) what type of data did the analytics unit rely on in forming the opinion of an inverse effect and how was it obtained? In conclusion, the consultant suggested that the captains of the industry will require a more rigorous initiative designed to model the process of the operation of servant leadership style so as to supply the required information for a more conclusive policy direction on the way forward in the adoption of the suggested leadership style.

Required:

- a) Briefly describe the Leadership problem facing the pharmaceutical industry.(1Mark).
- b) In just few words, state the research problem that requires investigation.(1Mark)
- c) From a scientific research point of view, explain four characteristics of research that give possible reasons as to why the management consultant raises a concern on the type of data the analytics staff relied on in generating the company preliminary report.(1Mark)
- d) If a research is to be undertaken as suggested by the management consultant, sketch a simple conceptual framework with a clear set of variables that should be investigated so as to guide the required rigorous initiative.(2Marks)
- e) State four objectives that will guide the study and the corresponding hypotheses in the null form.(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 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:

- i Explain to the class, the logical steps you would follow to analyze and interpret different types of quantitative research data. (1.5 Marks)
- ii 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 Human Resource Development was tasked by the Board of Management to identify key areas suitable to improve leadership competences among key units in the organization. The Director commissioned a training needs analysis survey in the concerned units based on the

reports of the latest performance appraisal report. The appraisal summary had highlighted three key areas as:

- Interpersonal Relations
- Networking Skills
- Conceptual Skills

The data analyst appointed by the director submitted the preliminary summary of the training needs analysis in the form of a Tally Sheet presented in Figure 1.

Figure 1: Tally Sheet on Training Needs Analysis

Unit	Required Area of Improvement		
	Interpersonal Skills	Networking Skills	Conceptual Skills
Operations	 		
Business Development		 	
Administration			

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 on the most preferred area of focus for each organizational unit (3Marks).

QUESTION THREE

(A) A group of postgraduate scholars were presented with the processed information summarized in table 2 and requested to discuss its contents with regard to its purpose and meaning.

Table 2:Test Results

Breusch-Pagan Test		
Variable	χ^2 value	p-value
Strategy processes	0.78	0.3775
Human resource processes	0.93	0.3351
Marketing processes	4.45	0.0350
Technological processes	7.70	0.0055
Management Processes	1.15	0.2840
Strategic orientation	0.93	0.3351
Firm's Current state	4.65	0.0310

Shapiro – Wilk Normality Test					
Variable	Obs	W	v	z	p-value
Strategy processes	44	0.97546	1.044	0.091	0.46361
Human resource processes	44	0.96620	1.438	0.769	0.22087

Marketing processes	44	0.97023	1.267	0.500	0.30841
Technological processes	44	0.96135	1.645	1.053	0.14617
Management Processes	44	0.98063	0.824	-0.409	0.65887
Strategic orientation	44	0.95512	1.910	1.370	0.08541
Firm's Current state	44	0.97053	1.254	0.479	0.31585

Required:

- What was the purpose for the tests whose results are presented in the table?(½ Mark)
- Indicate the specific set of assumptions underlying the tests **(1Mark)**
- In view of your response to (i) and (ii) above, what conclusion should be made from these findings. (½ **Mark**)

(B) A debate arose among scholars on how transformational leaders are likely to behave when confronted by complex and dynamic business environments. A research to help address this concern was recently mounted to survey transformational leaders contribution in the knowledge intensive sector of an emerging economy in Africa. The researchers proposed that the level of environmental dynamism would reduce the effect of transformational leadership on performance of the knowledge intensive organizations. The primary data based on a sample of 325 transformational leaders was analyzed in a stepwise multivariate regression analysis and presented in tables 3-4.

STEP 1

Table 3: Effect of Transformational Leadership on Performance

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	
1	.552	.305	.302	.29339	1.972	
ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
Regression		9.376	1	9.376	108.929	.000
Residual		21.348	248	.086		
Total		30.724	249			
Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		β	Std. Error	Beta		
1	(Constant)	.614	.273		2.248	.025
	Transformational Leadership	.817	.078	.552	10.437	.000

STEP 2

Table 4: Regressing Leadership on Performance with the role of Environmental Dynamism

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.566	.320	.312	.29142		
ANOVA						
Model	Sum of Squares		df	Mean Square	F	Sig.

1	Regression	9.832	3	3.277	38.590	.000
	Residual	20.892	246	.085		
	Total	30.724	249			
Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		β	Std. Error	Beta		
1	(Constant)	4.994	2.027		2.464	.014
	Transformational Leadership	-.420	.592	-.284	-.709	.479
	Environmental Dynamism	-1.345	.600	-1.650	-2.240	.026
	Transformational Leadership*Environmental Dynamism	.378	.173	2.196	2.182	.030

Required:

- A. State two hypotheses in the null form that were investigated in the study.(1Mark)
- B. Advise upcoming scholars on the:
 - i contribution of transformational leadership to the change in firm performance.(1Mark)
 - ii effect of transformational leadership on firm performance.(1Mark)
- C. Based on a comparison between table 3 and table 4 contents, advise the scholars on:
 - i how the contribution of transformational leadership is affected by the Environmental Dynamism. (1Mark)
 - ii whether the Environmental Dynamism moderates the relationship between Transformational Leadership and firm performance.(1.5Mark)
 - iii what lessons would you offer to the scholars on the application of strategic leadership based on the responses for (i) and (ii) above? (1.5 Marks)

QUESTION FOUR

The management of ZIMCO Ltd has been concerned about the effect of its strategy to deter rivals from imitating their strategic moves. One researcher has suggested to the company that since they may not be able to completely prevent rivals from copying their strategies, management should seek to find ways of generating unique capabilities from the strategies in a manner that rivals will not be able to imitate. To prove the claim, the researcher proposed that in understanding the effect of the Economic Deterrence Strategy on Performance, one should introduce and measure the role of Capabilities generated from application of the Economic Deterrence Strategy as a mediating factor to the already existing relationship between Economic Deterrence Strategy and ZIMCO Performance. The researcher undertook an investigation in the field and analyzed the data in several stages. The analysis involved four steps and the regression analysis results for each of the four steps are presented below:

Step 1: Testing the effect of Economic Deterrence Strategy on Performance

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.755 ^a	.570	.567	.43545	2.088
ANOVA ^a					

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	31.984	1	31.984	168.677	.000 ^b
	Residual	24.081	127	.190		
	Total	56.065	128			

Coefficients						
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	.397	.275		1.443	.151
	Economic Deterrence	.878	.068	.755	12.988	.000

Step 2: Testing the relationship between Economic Deterrence Strategy and Capabilities

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.811 ^a	.657	.654	.39593	2.572

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	38.148	1	38.148	243.353	.000 ^b
	Residual	19.908	127	.157		
	Total	58.056	128			

Coefficients						
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	.151	.250		.605	.546
	Economic Deterrence	.959	.061	.811	15.600	.000

Step 3: Testing the relationship between Capabilities and ZIMCO Performance

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						
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	.634	.194		3.258	.001
	Organization Capabilities	.822	.048	.837	17.223	.000

Step 4: Testing the Effect of Economic Deterrence Strategy on Performance with Capabilities present

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.847 ^a	.718	.713	.35454	1.915

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	40.227	2	20.113	160.013	.000 ^b

	Residual	15.838	126	.126		
	Total	56.065	128			
Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
	(Constant)	.300	.224		1.336	.184
1	Economic Deterrence	.261	.094	.225	2.777	.005
	Organization capabilities	.643	.079	.655	8.098	.000

Required:

- State four hypotheses in the null form that were tested in the analyses. (2Marks)
- What is the effect of Economic Deterrence Strategy on ZIMCO Performance and what percentage of the company's variation in performance is explained by the Strategy?(1 Mark)
- Comment on whether Economic Deterrence Strategy has any effect on Capabilities and whether the Capabilities affect ZIMCO Performance. (2Marks)
- What is the mediating effect of Organizational Capabilities on the relationship between Economic Deterrence Strategy and ZIMCO Performance. (2Marks)
- Provide the conclusions to each of the hypotheses stated in (i) above based on the results presented in steps 1-4. (3Marks)

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