



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 **Two** Questions from **section 2 (20 Marks)**

SECTION 1 - COMPULSORY

QUESTION ONE:

- **Read the facts in the case of CSN LTD and rely on the facts to answer Question One.**

THE CSN LTD CASE OF DECLINING PERFORMANCE

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 extra-ordinary 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 Leadership 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:

- In just two sentences, describe the Leadership problem the company needs to address.(1Mark)
- In view of your understanding of the nature of scientific research, why is the board of directors not persuaded by the preliminary report findings?(1Marks)
- If a more robust scientific survey is to be undertaken by the hired consultant, , what are the various steps that should be followed in carrying out the desired robust survey?(2Marks)
- In not more than fifteen Words, suggest a suitable title to the research project to be undertaken(1Mark)
- Propose a simple conceptual framework with all variables and hypothesized relationships for investigation in the research.(2Marks)
- What sampling Method would you suggest for drawing respondents from the company to participate in the research project?(1Marks)
- Suggest with justification a suitable research philosophy the research should embrace and its corresponding research design. (2Marks)

SECTION 2 – ANSWER ANY TWO QUESTIONS

QUESTION TWO

(A) The Sustainable Development Goals (SDGs) agenda has been adopted in most countries to guide policy interventions in areas that offer human capacity requirements for attaining the SDGs. The Kenya Association of Manufacturers sought to respond to this by understanding how women scientists have been represented in the leadership positions in the manufacturing sector in Kenya. A Study was commissioned to establish the current situation of key gender related attributes in the manufacturing sector in a random sample of 56 firms. The results of the survey were cross tabulated to show the frequencies of the diverse attributes and summarized in table 1.

Table 1: KAM Demographic Survey Attributes Summary

Years of service	Respondent Gender		Total
	Male	Female	
1-3 years	15	11	26
4-5 years	39	17	56
More than 5 years	67	41	108
Total	121	69	190

Age of Firm/Sales Turnover of Firm				
Firm Age	Sales Turnover (Million)			Total
	Ksh 5-50	Ksh 50-800	Over Ksh 800 M	
Below 5 years	5	0	0	5
6 - 10 years	23	28	13	64
Over 10 years	9	54	58	121
Total	37	82	71	190

Type of Business / Gender of the Respondents			
Industrial Sector	Respondent Gender		Total
	Male	Female	
Cement Manufacturing	32	12	44
Flour Milling	17	20	37
Sugar Confectionery	19	5	24
Meat & Fish Processing	17	6	23
Dairy Processing	9	14	23
Edible Oil Refining	11	5	16
Steel Manufacturing	8	3	11
Cosmetics Manufacturing	6	2	8
Textile Manufacturing	2	2	4
Total	121	69	190

Required:

Based on the results in table 1 Advise the KAM Policy makers on:

- How well the manufacturing sector has promoted the agenda for women scientists in its leadership. (1Mark)
- How subsectors of the manufacturing sector have facilitated gender mainstreaming.(1Mark)
- Which sectors seem to be attractive to women scientists. (1Mark)

(B) 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)

QUESTION THREE

(A) A group of researchers debated on how leadership process influences performance of organizations. They proposed an empirical investigation based on a set of four operational indicators of the leadership process applicable in a manufacturing industrial setting. The results of the analysis based on a multivariate regression analysis are summarized in table 3.

Table 3:Leadership Process Regression Output

ANOVA Statistics					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.064897844	4	0.016224461	F(4, 39) = 42.23	0.0004
Residual	0.014982877	39	0.000384176		

Total	0.079880721	43	0.001857691			
Model Summary						
R-squared = 0.8124	Adj R-squared = 0.7932		Root MSE = 0.0196			
Coefficient Estimates						
Variable	Unstd Coefficient.	Std beta	Std. Err.	t	P>t	[95% Conf. Interval]
Constant	-0.35487		0.04522	-7.85	0.000	-0.44633 -0.26340
Operational	0.032215	0.23140	0.01529	2.11	0.042	0.00128 0.06315
Marketing	0.044781	0.34737	0.01362	3.29	0.002	0.01724 0.07233
Human Resource	0.032555	0.21925	0.01496	2.18	0.036	0.00230 0.06281
Technological	0.036606	0.26027	0.01479	2.48	0.018	0.00670 0.06651

Required:

- Briefly explain the extent of variation in performance of the firms sampled contributed to by leadership (½ Mark)
- Comment on the model fit of the multivariate regression analysis model (½ Mark)
- Explain how each indicator of the leadership process affects performance (1 Mark)

(B) A newly created department in a research based university wishes to fill several vacancies for the position of senior researchers. To identify the most appropriate candidate from a pool of fifteen applicants, the head of department has advised the panel interviewing the applicants to gauge the candidates on their knowledge on statistics. She suggested that the panelists interviewing should raise a question to each applicant to draw clarifications among descriptive, diagnostic, bivariate and multivariate statistics and how they apply in scientific research.

Required:

Provide the panel with summary notes on what each type of statistic entails and how it is applied in scientific research.(3Marks)

QUESTION FOUR:

A team of researchers decided to address an issue raised by some scholars questioning whether there is a psychological dimension in explaining how leadership affects workforce contribution to organizational success. The researchers conceptualized a theoretical relationship depicting the psychological state attained by workforce from the exercise of leadership as a possible mediating factor in relating leadership to firm performance. The primary data obtained from a sample of 168 respondents was analyzed in a four step regression process and the results summarized in tables 4-7.

STEP 1

Table 4: The Effect of Leadership on Firm Performance

ANOVA statistics					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.0645909	1	0.0645909	F(1, 42) = 177.43	0.0060
Residual	0.0152898	42	0.0003640		

Total	0.0798807	43	0.0018577				
Model Summary							
R-squared = 0.8086		Adj R-squared = 0.8040		Root MSE = 0.01908			
Coefficient estimates							
Variable	Unstd Coefficient.	Std beta	Std. Err.	t	P>t	[95% Conf. Interval]	
Constant	-0.34850		0.04253	-8.19	0.000	-0.43434	-0.26267
Leadership	0.14668	0.89922	0.01101	13.32	0.000	0.12445	0.168898

STEP 2

Table 5: The Effect of Leadership on Workforce Psychological State

ANOVA statistics							
Model	Sum of Squares	df	Mean Square	F		Sig.	
Regression	.941830112	1	.941830112	F(1, 42) = 13.96		0.0010	
Residual	1.93895662	42	.046165634				
Total	2.88078673	43	.06699504				
Model Summary							
R-squared = 0.3269		Adj R-squared = 0.3109		Root MSE = .21486			
Coefficient estimates							
Variable	Unstd Coefficient.	Std beta	Std. Err.	t	P>t	[95% Conf. Interval]	
Constant	1.29735		0.59220	2.19	0.034	0.10225	2.49246
Leadership	0.560093	0.57178	0.14990	3.74	0.001	0.257602	0.86259

STEP 3

Table 6: The Effect of Workforce Psychological State on Firm Performance

ANOVA statistics							
Model	Sum of Squares	df	Mean Square	F	Sig.		
Regression	0.030984455	1	0.030984455	F(1, 42) = 14.81	0.0004		
Residual	0.048896267	42	0.001164197				
Total	0.079880721	43	0.001857691				
Model Summary							
R-squared = 0.3879		Adj R-squared = 0.3733		Root MSE = 0.03412			
Coefficient estimates							
Variable	Unstd Coefficient.	Std beta	Std. Err.	t	P>t	[95% Conf. Interval]	
Constant	-0.14166		0.09053	-1.56	0.125	-0.32437	0.041040
Workforce Psychological state	0.10371	0.62280	0.02694	3.85	0.000	0.04933	0.158092

STEP 4**Table 7: Effect of Leadership Firm Performance when Workforce Psychological State is present**

ANOVA statistics							
Model	Sum of Squares	df	Mean Square	F		Sig.	
Regression	0.065991837	2	0.032995918	F(2, 41) = 97.40		0.0020	
Residual	0.013888885	41	0.000338753				
Total	0.079880721	43	0.001857691				
Model Summary							
R-squared = 0.8261		Adj R-squared = 0.8176		Root MSE = 0.01841			
Coefficient estimates							
Variable	Unstd Coefficient.	Std beta	Std. Err.	t	P>t	[95% Conf. Interval]	
Constant	-0.38338		0.044467	-8.62	0.000	-0.47318	-0.2936
Leadership	0.13162	0.80692	0.012948	10.17	0.000	0.10547	0.15777
Workforce Psychological state	0.02688	0.16142	0.013218	2.03	0.048	0.00018	0.05357

Required:

- Write the mathematical equation for each of the steps in tables 4-7.(2Marks)
- Comment on the effect of Leadership on firm performance.(1Mark)
- How does the presence of Workforce Psychological State affect the relationship between leadership and performance.(1Mark)
- Is there evidence on the mediating effect of Workforce Psychological State? If so what conclusion should be made from the findings?(1Mark)

QUESTION FIVE:

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 step multivariate regression analysis and presented in tables 8-9.

STEP 1**Table 8: 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
1 Transformational Leadership	.817	.078	.552	10.437	.000

STEP 2

Table 9: 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
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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 firm performance.(1Mark)
 - ii effect of leadership transformational leadership on firm performance.(1Mark)
- C. Based on a comparison between table 8 and table 9 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.(1Mark)

*****8THE END*****