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The mediating role of trade-offs in the relationship between operations strategy and sustainability of water utility in South Africa

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SECTION 1: BIOGRAPHICAL INFORMATION

i	**Gender**	Male			Female			
ii.	**Age (years)**	20-25	26-30	31-35	36-40	41-45	46-50	Above 50
iii	**Highest Qualifications**		Grade 12	Certificate		Diploma	Degree	Post graduate
iv	**Your Current Position:**							
v	**Your department and Company Name**							

SECTION 2: OPERATIONS STRATEGY PERFORMANCE OBJECTIVES

Please think of your organisation's operations strategy and rate the following questions in terms how much you agree or disagree about their importance of each element to your organisation, 1 means you strongly disagree and 5 strongly agree.

OPERATIONS PERFORMANCE OBJECTIVES						
ID No.	**QUESTIONS**	**SCALE**				
The following statements measure the ***speed*** of water treatment and distribution to the customers by your utility:						
		Strongly disagree	**Disagree**	**Neither Agree nor Disagree**	**Agree**	**Strongly Agree**
A01	My organisation pumps water fast to reach customers on time.					
A02	There are few delays in water treatment and supply.					
A03	There are enough water buffers kept in the strategic reservoirs.					
A04	The water treatment cycle times are always kept short.					
A05	There are minimal equipment downtimes.					
Dependability: i.e. the ability of operations to keep the delivery promise to the customers (both internal & external)						
A06	There is consistent supply of water to customers at all times.					
A07	Necessary plant maintenance is always provided					
A08	Projects are always delivered on time.					
A09	Customers are always informed about the water status and interruptions.					
A10	There are minimal amounts of non-value-added times in our process.					

Flexibility: i.e. the ability of the utility's operations to change water volumes **My utility:**		**Strongly disagree**	**Disagree**	**Neither Agree nor Disagree**	**Agree**	**Strongly Agree**
A11	Has the ability to respond to unpredicted events such as power supply interruptions.					
A12	Is able to respond to a variety of activities at the same time such as plant maintenance, consistent water supply and project deliver.					
A13	Has enough capability for water supply volume adjustments.					
A14	Is able to embark on different services such as bulk water supply, reticulation, maintenance and direct water supply.					
Quality: i.e. level of conformance to specifications and critical customer water expectations. **My utility:**						
A15	Is able to provide expertise in water-related projects for other entities such as municipalities					
A16	Water process is error free as far as possible.					
A17	Water processing has minimal disruption.					
A18	Planning information is useful for organisational advancement.					
A19	Is able to produce durable water.					
Cost: i.e. measures of the amount of resources used by the utility's operations to produce the water **My utility:**						
A20	Has minimal water supply costs					
A21	Operations are producing relatively high profit margins.					
A22	Capacity utilisation is optimised.					
A23	Water production costs are minimal.					
A24	Has optimised labour productivity.					

SECTION 3: TRADE-OFFS

No.	Trade-offs	Scale				
The following statements measure the importance of trade-offs on operations strategy of your utility:						
Indicate how much you agree or disagree with the following statements.		**Strongly disagree**	**Disagree**	**Neither Agree nor Disagree**	**Agree**	**Strongly Agree**
B 1	Operations should concentrate more on operational activities and do less of capital projects activities.					
B 2	Operations should concentrate mainly on water treatment and pumping and have less involvement on maintenance activities.					
B 3	Operations should withdraw from procurement activities and turn most of its attention to plant operations.					
B 4	Operations should reduce the effort it puts on other meetings other operations so that it can spend much more time and resources on day-to-day plant operations as it is more important.					
B5	Operations should put more effort on assets utilisation as this is its primary concern and do less of designing and operating the systems which is its secondary concern.					

Please rank the following operation performance objectives in order of importance to your organisation starting from **1** (most important), 2, 3, 4 and **5** (least important). **Note: the number must be used once**

Trade-offs		
No.	**Performance Objective**	**Rank**
B6	**Speed** of water purification and supply	
B 7	**Quality** of water produced and supplied	
B 8	**Cost** of treating and supplying water to customers.	
B 9	**Flexibility** of water production volumes and delivery process.	
B 10	**Dependability** of the organisation and its plants.	

SECTION 4: SUSTAINABILITY

No.	Infrastructure status	Scale				
Indicate how much you agree or disagree on the status of the current infrastructure and augmentation plans of your organisation.		**Strongly disagree**	**Disagree**	**Neither Agree nor Disagree**	**Agree**	**Strongly Agree**
Maintenance						
D1	We have optimum maintenance team					
D2	There are few unplanned breakdowns					
D3	Maintenance philosophies for all assets are in place					
D4	Maintenance philosophies for all assets are adhered too					
D5	Shutdown are completed on time					
Capital Expansion **My utility:**						
D6	Has a clear infrastructure capital expansion plan.					
D7	Infrastructure capital expansion plan is managed well.					
D8	Has an adequate infrastructure to meet the current water demand.					
D9	Has ability to plan for infrastructural requirements to meet future water demands.					
D10	Has an optimal capital projects structure					

THANK YOU FOR ANSWERING THE QUESTIONAIRE