Effect of Strategy Implementation on Access to Water in Kisumu County, Kenya.

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ABSTRACT

Strategy implementation is a sub-process of strategic management and has been said to improve access to goods and services 'It involves the actualization and translation of plans into action. This study focused on the effect of strategy implementation on access to water in Kisumu county Kenya. Kisumu county was selected as the venue of the study because it hosts the third largest fresh water lake in the world and yet experiences problems of access to good quality water. The study employed an explanatory research design that focused on quantitative approach and was supported by the qualitative approach. The units of analysis were strategy interpretation, organization structure and leadership. The target population was 205 respondents. A sample size of 134 respondents were selected using a combination of purposive and stratified sampling techniques. Data was collected using questionnaires and document analysis guides. Validity of the instruments was established through expert vetting while reliability was established through piloting, using the test -retest method which yielded a reliability coefficient of .72. Results indicated that strategy implementation had a positive significant relationship with access to water, implying that effective and efficient strategy implementation will lead to efficient and effective access to water. Based on this finding its recommended that the water utility should treat and test water in springs and boreholes to increase access to quality improved waters. Kisumu Water and Sewerage Company Limited (KIWASCO) should also develop facilities for raw and processed water storages. Every house-hold should have water storage of at least 4500 litres as recommended by Government policy. KIWASCO should use geographical poduct structure in order to expand water services in every area and improve product content, increase uses of water technology to reduce reliance on natural springs and streams which provide unprocessed water.

Key Words: Effect, strategy implementation, access to water.

INTRODUCTION

Strategy implementation is a sub-process of strategic management .In the whole strategic management process, it comes after strategy formulation and is followed by strategy control . This study focuses on strategy implementation. Strategy implementation are decisions and actions that turn strategic plan into reality (Magnus, 2013; Mintzeberg, 2017) but according to Porter it is a sequence of carefully executed activities that leads to achieving planned results (Porter, 2012). In a study carried out in the European Union, water utilities strategy implementation was conceptualized as enforcement of water quality, technical capacity, clear communication, flexibility and quality control (Alexandra & Antonio, 2017).

In studies carried out in Tanzania and Kenya, strategy implementation emphasized top management support, availability of organizational resources, organizational culture and role of stakeholders (Winnie & Kavale, 2015. ; Venance, 2018). These studies did not articulate the role of interpretation of strategic plan, the purpose of philosophy in shaping the organizational structure, and transformative leadership. The studies did not come up with a solution to create strategy interpretation as an element in the process. In many organizations, the execution of functional strategies was done by lower-level managers who often were not involved in strategy formulation; it therefore created misinterpretation of strategies at implementation level (Agwu & Henrietta, 2014). Proper interpretation of strategic plan improves performance at implementation and access to water. In Kisumu county Kenya, no study has been undertaken to provide data on the effect of strategy implementation on access to water.. In KIWASCO there were no water testing kits at boreholes and improved springs. The average daily hours of piped water supply were 14, water from springs, rivers, ponds, dams and

lakes was supplied for 24 hours but not accessible at night due to insecurity or when it was raining, it was accessible for about 14 hours (KIWASCO, 2018). Processed water was not affordable to many people. The international water affordability index was maximum of 2.5% of one's income which translates to maximum of ksh. 657 per month on income of ksh. 157,681 per year, (International Water Association, 2013was assumed that household income was equal to per capita income in Kenya. The per capita income of Kenya was ksh. 157 681 (Kenya Bureau, 2017). The price of piped water per month in KIWASCO averaged shs 660 (WASREB, 2017) per household. The price was not affordable because it was above the maximum of ksh. 657. Water in improved springs, boreholes, unimproved springs, rivers, ponds and lake was free and was therefore affordable (LVSWSB, 2017).Globally, 29% of the population used unprocessed water from natural springs, streams, rivers, ponds, dams and lakes. In Kenya this stands at 43% of the population and 55% of the population in Kisumu use water from those inferior sources. The difference motivated the present study

In KIWASCO the infrastructure was repaired when it broke down (LVSWSB, 2017). Low maintenance led to physical leakage of water, inability to distribute water to users or close down of a facility. According to research carried out in Africa and Asia, 450 million m^3 of water leaked out daily denying water access to over 200 million people daily (World economic Forum, 2014). Singapore had effectively reduced water leakages through regular inspection and repair of water lines on principle of replacing water pipes if five leakages were detected within one year on one km stretch (International Water Association, 2013).In Kisumu County over 400 boreholes were drilled but just 25% were functioning because others could not be repaired, over 50% of main water distribution lines in Kisumu needed rehabilitation (LVSWSB, 2017). it In Europe any drinking water source that served more than 50 households or produced more than 1000 m^3 per day installed water quality testing kits to detect any contamination (Riku, 2005). Water coverage in Europe was 98.6%. In KIWASCO there were no water testing kits at boreholes and improved springs. The average daily hours of piped water supply were 14, water from springs, rivers, ponds, dams and lakes was supplied for 24 hours but not accessible at night due to insecurity or when it was raining, it was accessible for about 14 hours (KIWASCO, 2018). Processed water was not affordable to many people. The international water affordability index was maximum of 2.5% of one's income which translates to maximum of sh 657 per month on income of shs. 157,681 per year, (International Water Association, 2013).The per capita income of Kenya was shs 157 681 (Kenya Bureau, 2017). The price of piped water per month in KIWASCO averaged shs 660 (WASREB, 2017) per household. The price was not affordable because it was above the maximum of shs 657. Water in improved springs, boreholes, unimproved springs, rivers, ponds and lake was free it was therefore affordable (LVSWSB, 2017).Globally, 29% of the population used unprocessed water from natural springs, streams, rivers, ponds, dams and lakes. In Kenya this stands at 43% of the population and 55% of the population in Kisumu use water from those inferior sources. The difference motivated the present study

Statement of the problem

Kisumu County hosts one of the largest fresh water lakes in the world and yet it suffers from perennial clean water shortage. Efforts to mitigate this shortage by KIWASCO have apparently not been successful .Strategy implementation has been touted to be an important sub-process in improving access to goods and services. The effect of strategy implementation on access to water in Kisumu county is not known, hence the motivation for this study.

Objectives of the Study

The specific objectives of the study were to;

1. Determine effect of strategy implementation on access to water in Kisumu county , Kenya
2. Make recommendations in the light of the findings on how to improve strategy implementation for better access to water in Kisumu county, Kenya

LITERATURE REVIEW

Jorge (2015) analyzed community water management strategy in Latin America and the Caribbean. The objective was to investigate whether strategic management principles were used in implementation of the

community water supply. Descriptive documentary and structured questionnaires were used to collect data from sampled stakeholders. Unit of data analysis was the staff of water management units at local, regional and national levels which differed from the current study. The elements used to build water access model were different from those of strategic management process. The results obtained indicated that strategic management principles were rarely applied by the committee members as they were not familiar with the principles. The locals were happy with the projects and owned them and water accessibility was about 83%. This empirical study shows community involvement improved access to water but management principles had no effect on access to water. The current study deals with interpretation of strategic plan and structure.

The International Water and Sanitation Center (2013), investigated a strategy formulation and implementation of repair and maintenance of water supply in rural areas in Burkina Faso, Ghana, India and Mozambique. Strategy implementation was conceptualized on repair and maintenance of water infrastructure in Africa and Asia. The study content did not mainstream strategy interpretation, structure and transformative leadership. Raw data was collected using questionnaires which were analyzed through qualitative and quantitative methods. The findings were that water utilities did not plan for repairs, or set aside enough funds for repairs but rather relied on unpredictable receipt from external sources, national and local governments. The utilities ranked maintenance at low level, so broken-down facilities did not receive quick attention; most repairs were reaction to a crisis. Whenever there was new infrastructure facility there was no new addition financing for repair and maintenance of the new facility. Poor maintenance reduced performance by almost 32% and life span of assets by almost 6 years. It was concluded that utilities should set aside asset maintenance fund for old and new infrastructure. Capital maintenance was critical to maintain asset performance to installed level, but the role of operational maintenance was to keep the asset running. The study concluded that there was a relationship between repair, maintenance strategy and level of performance.

The organizational structure was arrangement of roles , authority, coordination and communication to implement the objectives of the organization (Shahim, 2013) A good structure distributed power, coordinated activities, communicated smoothly, motivated people, made roles clear and promoted quality. Studies done in Egypt examined conflicts in. organizational structures, differentiation and integration of roles, coordination and communication. There were many conflicts due to poor differentiation and integration leading to ineffective coordination, communication and conflicting authority.(Elsaid & Okasina 2013)

In Europe any drinking water source that served more than 50 households or produced more than 1000 m^3 per day installed water quality testing kits to detect any contamination (Riku, 2005). Water coverage in Europe was 98.6%. Lockwood (2019) investigated the quality of drinking water and governance challenges in Africa, Latin America and Asia by a comparing three countries Brazil, Ecuador and Malawi using case studies from each country. The study conceptualized drinking water quality as key driver of access to water. The study focused on water quality implementation narrowed itself to water quality unlike the current study which looks at the structure and transformative leadership. Data was collected by questionnaires and analyzed using mixed research methods. The findings revealed that all the countries had good laws and policies on drinking water quality, however implementation was weak. Monitoring and evaluation of drinking water standards was weak in Malawi and Ecuador due to inadequate resources. The regulators in Ecuador and Malawi did not know how many utilities treated water to required standards because they were not able to carry out tests in the utilities. Water access stood at 95% in Brazil, 80% in Ecuador and 63% in Malawi, and poor sanitation polluted water which undermined access to water. Financial resources and infrastructure were important to uphold quality of drinking water. The study did not deal with issues of strategy interpretation and structure. .

An investigation on strategy implementation of water supply in Latin America (Peru, Brazil, Bolivia and Paraguay) was done by Glenn (2016). Data was collected through review of relevant reports, studies and questionnaires. Variables of the study were water tariffs, role of the community and WSPs. The study was conceptualized on the influence of tariffs and community practices on water supply, unlike the current study which looks at the effect of structure and leadership on water supply. The access to water stood at 95% in urban areas and 80% in rural areas, while community participation was effective, water tariffs were a challenge to access to water in rural areas. The current study examines strategic management process using content of setting direction, environmental analysis and strategic control while the empirical study used community participation and tariffs therefore the two are different.

The Ministry of health Bulgaria (2014) investigated the effects of compliance, sustainability, value for money on accessing water. The strategy implementation was conceptualized as compliance and sustainability. Data was collected through questionnaires, interviews and previous reports, and then analyzed for compliance with regulations, technical, financial and value for money policies. The results indicated 95% water coverage, water quality was doubtful, and the rate of UFW was high due to wrong design and low maintenance. Compliance was at risk due to ineffective implementation standards. The 95% water coverage was compromised by elements of low quality water. The empirical study conceptualized strategy implementation as compliance with regulations and value for money, however the issues under current investigations deals with content of organization structure and leadership.

Guy and Jamie (2012) carried out a study on the resilience of water and sanitation in face of climate change focusing on infrastructure technology and implementation that would resist harsh conditions of climate change. The study prioritized infrastructure technology that resists climate change destruction as a critical to access water. The study was carried out in Africa, Asia, Latin America, Oceania and Europe. Data was collected by review of reports, interview with water experts through structured questionnaires and expert forecasts. Qualitative and quantitative approaches were used to analyze data. The sources of drinking water in the world were taps at 60%, improved springs and boreholes at 30%, shallow wells and unclassified sources (rivers, streams, ponds and lakes) about 10%. Climate change relocated hydrological regions of water aquifers and rainfall patterns, hence boreholes, wells, piped water intakes, and pit latrines were affected in many places. The research concluded that infrastructure designs and implementation should consider effects of climate change and new hydrological surveys to locate new aquifers and water points. Tube wells were found to be highly resilient to climate change for drinking water because of low cost, short distance and reliability. The strategy implementation in many countries did not address climate and pollution consequences on access to water. The study focus was on resilient water infrastructure unlike the current study which looks at strategy interpretation, structure and transformational leadership.

Taylor (2017) investigated water utilities in Australia to establish the relationship between transactional leadership, transformative leadership and the combined relationship on water utility performance. The study used Bass leadership theories. Data was collected via questionnaire from middle level managers selected at random from water utilities in four states of Australia. The data was qualitatively and quantitatively analyzed. Leadership was identified as most important factor in utility performance, good leadership mixed transactional and transformational attributes, transformational leadership nurturing long term relations, team work and service to community while transactional leadership entertained clear commitments on what was expected from each player, had no time for inspirations and long term relationships but contractual relationship, it was used in the utilities because of clarity in expectations. The current study looks at transformational leadership in relationship alone.

The Water and Sanitation Program (2010) carried out a study on the influence of implementation strategy on access to water in Angola. The data was collected by reviewing literature on water, field survey on water utility staff using structured questionnaires. The current study used stratified random sampling with qualitative and quantitative analysis. It was established that census figures were not available therefore estimates were used. Access to water was placed at 50% of the population with the main sources of water being springs, boreholes and taps. There was no national policy on water infrastructure and maintenance which compromised access to water. The strategy implementation had little influence on access to water because environmental analysis did not gather enough factors. The current study used strategy interpretation, structure and transformative leadership,

Mbogo (2015) investigated implementation of strategic management practice and impact on availability of water by a surveying 28 WSPs in Tana WSB area in Kenya. Data was collected through a questionnaire. The theory of SWOT guided the analysis, the variables tested were implementation of strategic planning, planning teams and vision statements. It was concluded that strategic management practices enhanced access to water and water coverage was 60%. The current study used case study and stratified random sampling to pick samples on variables of collective interpretation of strategic plan, structure and leadership guided by Porters five factor model.

Winnie & Kavale (2015) investigated factor that affected strategy implementation as a case study of Mombasa water and sewerage company ltd. Strategy implementation was the main driver of access to water, unlike the current study which looked at strategy interpretation, structure and transformative leadership. Data for empirical studies was collected through structured questionnaire on a stratified random sample, analyzed through descriptive and multiple regression analysis. The objectives of the study were to investigate the influence of leadership, resources, culture and stakeholders on strategy implementation. The study established that rewards to management and employees were low, resources were not adequate, stakeholders and culture influenced performance. The study concluded that strategy implementation was low. While the current study investigated strategy implementation using variables of interpretation of strategic plan into implementation plan, transformative leadership and the role of structure.

METHODOLOGY

In this study the indicators of strategy implementation were clustered into Three broad categories, namely; strategy interpretation, organization structure and leadership.These categories formed the units of data analysis .The venue of this study was Kisumu county in Kenya. The county was selected because it hosts the third largest fresh water lake in the world and it requires good quality water to sustain its operations . The study used the explanatory research design that pursued quantitative data collection and analysis supported by qualitative data collection and analysis (Cresswell & Cresswell, 2017). The target population of the study was 205. A sample of 134 respondents was selected out of this target population consisting of Board members, technical and administrative groups made up of senior and middle level staff. Stratified random sampling was used to pick a representative sample (Krejcie & Morgan, 1970). Instruments of data collection were questionnaires and document analysis guides. Validity of the instruments was established through expert vetting. Reliability was established through pilot testing, using the test-retest method. A reliability coefficient of .72 was obtained indicating that the instruments were reliable.

RESULTS AND DISCUSSION

Effect of Strategy Implementation on Access to water

The strategy implementation objective had 11 indicators clustered into sub objectives of strategy interpretation, organizational structure and leadership. Descriptive analysis was based on the mean and standard deviation of the responses. The transformation of ordinal data to interval scale Likert data was done in line with studies carried out (Ankur & Saket, 2015). The likert data was transformed into five equidistant intervals of 0.8 Likert scales, where the frequencies of the scores A to E were slide into the scale and subsequently used to determine the scores of each indicator. The means were 1-1.8 Strongly Disagrees, over 1.8 -2.6 Disagree, over 2.6 -3.4 not sure, over 3.4 -4.2 agree and over 4.2 -5 strongly agree. The study investigated whether KIWASCO clearly articulated its purpose of making fair financial returns on investment, majority 40% did not agree. Literature position clearly stated the purpose of KIWASCO was to run a viable organization and providing quality water, under company's act. KIWASCO was registered under Kenya Company's Act 2015 as profit making organization .In a study in Nigeria Ekpe and Benjamin 2015, it was found out that well articulated purpose made it esier to develop clear objectives that improved implementation.KIWASCO did not articulate its project purpose clearly.

The study investigated whether KIWASCO clearly articulated the purpose of the company as to provide quality, reliable and affordable water to customers, (mean score = 2.67, SD= 0 .687). The respondents were neutral as they were not sure whether or not KIWASCO had articulated the purpose of the utility as providing quality, reliable and affordable water to customers in Kisumu County. The position was at variance with literature which required KIWASCO to provide quality water that was reliable and affordable as it was registered as water service provider under Kenya Water Act 2016. This position was supported by qualitative data in a study done by Kalala and Verl 2018.

Another variable investigated whether strategic plan goals were broken down into measurable activities for ease of implementation (mean score= 4.40, SD = 0.68). The mean score placed majority of responses at Strongly Agreed, that goals were broken down into activities that added value to implementation process. The

position was supported by qualitative analysis which scored good performance. Literature revealed that activities were broken down into clear processes for implementation (KIWASCO, 2017 c). Studies carried out in the Middle East established that where strategic plans were broken down into units, jobs assigned, resources allocated to activities, implementation had high level of success (Abdullah & Alharthy, 2017).

The study investigated whether KIWASCO structure distributed power in the organization (mean score = 3.81, standard deviation= 0.549) meaning that that power was distributed in the organization . The literature supported the findings and illustrated that power was delegated to departments at functional level. The departments used the powers to implement goals of the strategic plan (KIWASCO, 2017 b). The position was supported by a study done in water utilities across the world (United Nations, 2015 b), that good structure had clear hierarchy of roles, process and standards of performance that enabled delegation and supervision.

The study investigated whether KIWASCO organization structure focused on water quality, reliability, affordability and coverage,(mean score= 3.7, standard deviation= .833) meaning the structure focused on water quality, reliability, affordability and coverage. The position was supported by qualitative review which scored good meaning the structure focused on quality, reliability, affordability and measure of water coverage. The findings were in agreement with literature but water quality was only focused on in Kisumu city, water affordability was indirectly looked at through human right quantity of water pricing .A study done in water utilities in Oman asserted that organizational structure that focus on product quality influences performance (James, R, 2014).

The study investigated whether KIWASCO's organization structure was geographical product. The results reflected a mean score 3.91 standard deviation of 0.544, meaning they agreed that the structure was geographical product with a focus on water quality, reliability, affordability and coverage improving product attributes . The findings were not in agreement with literature which stated that the structure was functional (KIWASCO, 2017 a). KIWASCO used functional structure which defused product accountability because

The study investigated whether KIWASCO's organization structure had effective coordination and communication (mean score= 3.83, SD = 0 .343). Results indicate that respondents agreed that the structure had effective coordination and communication. The findings were compatible with literature which indicated that departments and people were coordinated and communicative through department's information technology, local area network, mobile phones facilitation, clear reporting lines and deadlines that were enforced strictly. The organization had culture of teamwork which created a platform for communication that linked internal and external stakeholders through the managing director (KIWASCO, 2017 b)

Another variable investigated whether KIWASCO's leadership was long term oriented in its objectives and action (mean score = 4.35, SD= 0 .680) . Majority scored Strongly Agreed in concurrence that the objectives were long term in nature. The findings were compatible with literature which agreed that the leadership was long term oriented. Studies in Asia and Africa on 40 water executives found that leadership created influence by setting long-term direction, motivation with realizable targets (Wouter, Linken and Uta, 2013). long term focus. This is further supported and is in agreement with Mushima and Hafiza (2019)

The study investigated whether KIWASCO's leadership stimulated, inspired and motivated staff hence transformational (mean score = 4.5, SD= 0.670). The respondents strongly agreed that leadership motivated and inspired staff. The findings agreed with literature which cited competitive allowances compared to other utilities, fringe benefits and mobile phones facilitation, clear reporting lines and deadlines that were enforced strictly (KIWASCO, 2017 a). The position was supported by study done in sultan Oman where motivation and inspiration influenced performance (James, 2014).

The study investigated whether KIWASCO promoted innovative ideas, (mean score = 3.90, SD 0 .541). Respondents agreed that KIWASCO promoted innovation. The findings were not supported by literature as most of the infrastructure was natural water springs in rural areas. In a study of nature-based solutions in India Rajasthan, ground water table was raised by 6 meters by planting a forest and reducing ground water runoff, in the process five rivers were generated and greater forest cover. In another study local communities and professional landscapers were mobilized to plant trees, build trap structures which helped to recharge water

and raised water table in 1000 villages (United Nations water, 2018). KIWASCO promoted innovation. Imported technology was confused for innovation. KIWASCO should invest in innovation.

The study investigated whether KIWASCO paid staff according to performance, (mean score = 3.02, standard deviation = 0 .654) The score implies that the respondents were not sure if KIWASCO used performance based pay, The findings were not in agreement with literature which stated that performance-based pay was not in use, and instead, management paid staff a fixed salary (Ministry, 2007 a). In the absence of performance motivator, staff worked to achieve basic results. These results were supported by the findings in document analysis that showed that employees were paid a fixed salary. One employee said; "Employees were paid annual fixed salary and increment. The increment was subject to annual review of performance" This is further supported by study done by Aisha(2018)

CONCLUSIONS

Strategy implementation had a positive significant relationship with access to water, effective and efficient strategy implementation will lead to effective and efficient access to water .The level of effectiveness and efficiency of strategy implementation will translate to a related level of effectiveness of access to water. In other terms, improvement in strategy implementation will lead to improvement in access to water or lack of improvement in strategy implementation will lead to low access to water.

RECOMMENDATIONS

Based on the study findings and conclusions the following recommendations are generated:

Water access in Kisumu County stood at 42%, this being the population that used safe, reliable and affordable water, 58% depended on water from unimproved sources. The water utility should treat and test water in springs and boreholes to increase access to water by improved quality. KIWASCO should develop facilities for raw and processed water storages. Every household should have water storage of at least 4500 litres of water as recommended by government policy. KIWASCO should use geographical product structure in order to expand water services in every area and improve product content**,** increase uses of water technology to substantially reduce reliance on natural springs and streams which provide unprocessed water.

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