MODERATING EFFECT OF WORKING ENVIRONMENT ON GOVERNMENT BUREAUCRACY AND SERVICE DELIVERY IN STATE OWNED ENTERPRISES IN THE ENERGY SECTOR IN KENYA

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ABSTRACT
This thesis investigated the effect of government bureaucracy on service delivery in state-owned enterprises within the energy sector in Kenya. It particularly aimed at establishing the influence of leadership hierarchy, Actors’ interest, policy compliance and political environment on service delivery in State-owned enterprises. Further, the thesis analysed the moderating role of working environment on the effect of government bureaucracy on delivery of services. The target population was 124 suppliers, 5,107 end-user consumers, 1,817 employees in KPLC plus 480 employees in REREC and 30 employees in the Energy regulator (EPRA). A sample of 380 individuals/households was selected using a two-stage random sampling procedure comprising of proportionate stratified and simple random sampling techniques. Empirical data were gathered using semi-structured questionnaire. The findings of thesis demonstrated that leadership hierarchy, actor’s interest, policy compliance and political environment positively affect delivery of services. Additionally, the study found out that working environment moderates the effect of government bureaucracy on delivery of services. Management of state owned enterprises should enact policies to reinforce practices on aspects of leadership power, leadership motivation and leadership delegation. It was recommended that a policy framework be formulated for promoting activities relating actors’ participation, decision making and efficient flow of information in state owned enterprises. Audit divisions in state owned enterprises should strengthen the existing policy framework to sufficiently embed practices that foster culture of compliance with rules and regulations, work instructions and personnel selection. The board of management of the state-owned enterprises within the energy sector should initiate mechanisms for cushioning from disruptive interference of interest groups with potential to erode operational efficiency and ability to actualize service delivery outcomes. The human resource divisions of state owned enterprises ought to enact policy the buttress mutual trust, team spirit, sharing of information, openness, and sense of belonging. In addition, sufficient resources should be availed for strengthening information and communication infrastructure as one of the critical support system for enhancing the processes of value creation and delivery.

Key Words: Working Environment, Government Bureaucracy, Service Delivery

INTRODUCTION

Public service by the government helps in determining the quality of life, which cannot be tangibly measured by per capital income. Service delivery can be classified into three modes. The first one is based on where the end-user consumers can receive information, advice or make enquiries on an agency desk. The second mode is through written request by an end-user consumer through an email or a document to relay the message and once processed the end-user consumer is contacted. For instance, registration for power connectivity then finally, the third mode is a full service where the end-user consumer can receive a complete service based on their requests (Kuye & Akinwale, 2020).

Service delivery is usually linked to the performance of an organization through fulfilled organizational objectives and goals, addressing the needs of the client and other stakeholders. Globally, organizations strive to remain competitive by focusing on service delivery. Service delivery by the government involves providing the clients of the government with services (Puolokaineni & Jansoo, 2019). In essence, government exists to ensure life is worth living through the provision of services to its citizens (Writer, 2019).

Delivery of services is expected to occur in a friendly atmosphere that is devoid of hindrances, interruptions or obstructions and further that service delivery should have attributes of consultation, information sharing, openness, accountability, participation, availability, accessibility, convenience, transparency, and timeliness (OECD, 2013). Despite, like many other countries in the world, concerns have been raised regarding the Public service in Kenya in relation to commitment, accountability, trust, transparency, and increasing desperation among the members of general public.

Working environment is a fundamental factor for facilitating efficient and effective functioning of institutions that has however not been given sufficient attention by both practitioners and researchers (Aiken, Clarke & Sloane, 2002; Foldspang, et al., 2014; Taheri, Miah & Kamaruzzaman, 2020). In the views of Massoudi and Hamdi (2017), the quality of working environment has a bearing on the degree of employee’s motivation and subsequent productivity. Oludeyi (2015) avers that working environment encompasses the situations, settings, circumstances and conditions in which members of an institution operate as they undertake the principal task of generating and delivering value. Furthermore, Al-Omari and Okasheh (2017) consider working environment as anything that exists around the employees and has potential to favor or hinder their ability to perform institutional tasks.

Notably, working environment plays a facilitative role in employees’ creativity, engagement, and delivery of services (Chandrasekar, 2011; Palwasha, Ashfaq & Majid, 2016; Qadri, et al., 2022). As has been observed by a stream of scholars, an effective workplace is an embodiment of environment where institutional outcomes and results can be achieved as anticipated by management (Shikdar, 2002, Mike, 2010). Working environment may be viewed as the aggregation of the inter-relationship that subsists between employees and the employers and essentially comprises of human, technical and the organizational environment (Opperman, 2002; Metiboba, 2012). Workplace environment draws from three broad areas including people, culture and physical aspects of the workspace which existing body of literature has shown to buttress realization of institutional outcomes and objectives (Mccoy, 2005; Sayiner, 2015; Kegel, 2018; Alemu, 2022). Indeed, working environment is considered as highly instrumental to unleashing and optimizing potential of employees in a competitive business landscape.

A substantial body of literature contends that good working environment contribute to the well-being of workers and the success of enterprises in both public and private sectors (Massoud, 2017; Sunarsi, 2019; Yusefzadeh, 2020). Moreover, working environment is a key factor in employees’ level of
productivity and the quality of work. The extent to which working environment is engaging stimulates the desire of employee to learn skills and as well enhances the level of motivation for executing institutional tasks (Suwati, Minarsih & Gagah, 2016; Al-Omari & Okasheh, 2017).

State-owned enterprise (SOEs) or State Corporation is an institution established under section 3 of State Corporation Acts Cap 446, with the government controlling majority of the shares, established mainly to improve service delivery to the public. Board of directors oversee the operations of the SOEs with general supervision of Ministries. The President appoints the board of directors and the Cabinet Secretaries for the Ministries.

The Ministry of Energy Kenya, whose SOEs are the focus of this current study, derive its core functions from the Executive Order No.1 of 2008 of the President (Revised June, 2018), that outline Thermal Power Development, National Energy Policy Development and management, Rural Electrification Programme, Security and Conservation, Energy Regulation, Geothermal Exploration, Hydropower Development and Development and Promotion of Renewable Energy as its core functions. In addition, under the Ministry of Energy, there are six Semi-Autonomous Agencies (SAGAs) namely, Kenya Power and Lightning Company Limited (KPLC), Kenya Electricity Transmission Company (KETRACO), Rural Electrification and Renewable Energy Corporation (REREC), Kenya Electricity Generating Company (KENGEN), Geothermal Development Company (GDC), Energy and Petroleum Regulatory Authority (EPRA), and the Energy Tribunal.

The focus of the study was KPLC and REREC within the Ministry of Energy as their functions is to extend distribution networks to cover more end-user consumers both in urban slum areas and rural setups. KPLC traces its origin back in the 1920s when East African Power and Lighting Company was incorporated to generate and distribute electricity in Kenya. Later, the name was changed to KPLC through a special resolution sitting by shareholders in 1983. In 1997, electricity generation function of KPLC was split from transmission and distribution, giving birth to Kenya Electricity Generating Company (KENGEN). Later, in 2007 and 2008, with the intention to speed up the implementation pace of rural electrification programme, the government established the Rural Electrification Authority (REA), currently REREC. Equally, the Kenya Electricity Transmission Company was established alongside Geothermal Development Company, to accelerate transmission infrastructure development and develop steam fields to reduce development risks, promoting development of geothermal electric power (KPLC Annual Report, 2010).

Despite the existence of several loan schemes, Stima loan under last mile project and slum subsidized connectivity, electricity connectivity continues to attract high connection payments under rural electrification program (Abdullah & Markandya, 2012; Were, 2016). Engaging all Actors in the matter eases future challenges that may arise and helps in ownership of the projects (Were, 2016). This is however, expected to change with provisions of Energy Act (2019), which eases the process and cost of connectivity. Excessive bureaucracy is evidenced in payment of bribes to facilitate the process to acquire electricity, wastage of time and long queues. For instance, the employees of KPLC have been termed rude, incompetent and absentees with one having to pay for bribes to facilitate acquiring electricity thus unable to deliver high quality services to the citizens (Munoru, 2015). Despite the work instructions, already in place rules and regulations, the employees still engage in unethical practices which hinder service delivery.

In the past, the state enterprises has faced constitutional and structural reforms with the aim of enhancing efficiency of operation on market principles reducing the financial burden on the public and improve delivery of services to the public as part of the wider reforms in the public service (Mwongozo, 2015). KPLC adopted an action plan that sought to upgrade the quality of services
offered and address the complaints by the public by setting up clinic to address end-user consumer’s complaints that would facilitate the improvement of service delivery (KPLC, 2018). Despite the measures, cases of dissatisfactions in service delivery are still high.

Kenya’s energy sector is a major foundation upon which social, economic and political development strategies have been conceived for realization of vision 2030. Its role on development of this country is paramount. To achieve the maximum output in the energy sector, it is a prerequisite to address the challenges of service delivery, which requires a transformational mind-set while conducting business to achieve vision 2030 (PTPRs, 2015). Therefore, this study provided an empirical analysis of the effect of government bureaucracy on delivery of services by state corporations in the energy sector.

LITERATURE REVIEW

Empirical Review

Working Environment and Service Delivery

Working environment, as described by Raziq and Maulabakhsh (2015), incorporate jobs carried out, activities in training sessions, control on employee’s job activities, employee’s sense of work-related achievement, and the unseen value of work tasks. Working environment also implies the surrounding circumstances that supports innovation through research and development withheld values, beliefs and the ways in which institutions operate (Njoroge, 2015).

A study by Raziq and Maulabakhsh (2015) examining whether job satisfaction was affected by working environment among educational institutes, banking sector and telecommunication industry located in Quetta City, Pakistan. The investigation adopted a quantitative approach, and used probability sampling to attain a group of 210 employees for the survey. The results showed that indeed a positive correlation existed among working environment and job satisfaction. Particularly, working environment had a positive effect on employees’ job satisfaction. Further, unconducive working environment constrained the employee’s capabilities to realise full potential, indicating that working environment is noticeably important in enterprises.

Further, Raziq and Maulabakhsh (2015) and Njoroge (2020) alludes that a conducive working environment enables employees to work with ease, relaxed and free environment that does not depict some form of burden or undue pressure which may cause performance of employees to decline. However, Raziq and Maulabakhsh did not interrogate the role of technology and organizational culture as critical aspects of working environment on job satisfaction and by extension employees’ service quality, a concern the current study addressed.

Taohid, Sujai and Nugraha (2021) studied whether working environment and work motivation were affected by work discipline of State Civil Apparatus. The study targeted Civil Service employees in Panyileukan District within City of Bandung in Indonesia. In the survey, working environment was shown to have a significant influence on work discipline (at 33%) while work motivation also had a significant effect on work discipline. In light of these findings, Taohid, et al. posited that work discipline was significantly impacted by motivation and work environment. In this current study, organizational culture and technology were investigated as components of working environment since the study by Taohid, Sujai and Nugraha (2021) was silent on them in relation to the quality of service delivered by SOEs.

Another study by Langat and Gachunga (2018) on factors influencing electronic commerce adoption by SOEs in Kenya, selected KPLC as the case study. The study utilized descriptive research design, where staff members, in top management and in departments of operations and Information Technology formed the target population. The significance, strength and direction of association between organizational factors, technological variable, environmental variables, individual
characteristics, and E-commerce adoption was tested using Pearson Correlation. The findings indicated that, the SOE’s that had invested on E-commerce adoption, had improved its operations and performance compared to the SOE’s that had not adopted E-commerce. In concluding, Langat and Gachunga (2018) emphasized the adoption of E-commerce as a key pillar in an SOE’s. The current study, investigate whether working environment operationalized as organizational culture and, information and communication technology plays a moderating role on the link between government bureaucracy and services delivered by state corporations in the Kenyan energy sector.

Theoretical Literature Review
Systems Theory
System theory is also referred to as social system theory in social science. The theory was constructed by Ludwig von Bertalanffy in 1940 (Wilkinson & Fay, 2011). From the theory, every component of the system supports the entire system. The theory entails relationships on how an individual piece is connected to the ultimate goal. The individual elements are key in an organization in determining whether the organization succeeds or fails. The system theory views an enterprise as a system that is comprised of other sub-system which interact with one another holistically. The system is viewed in terms of outputs, inputs and outcomes.

To guarantee the success of an enterprise, it is vital to establish the process that show the relationship between the elements and the way the product or the end-user consumers navigate through the system. Based on desired outcomes and purposes, well-designed processes create flexible, efficient and integrated systems. Organizations depend on both the internal and external environment for end-user consumers to purchase their products and services. The system theory approach was an external standard that gave a measure of how effective an organization was, based on long term growth or sustainability (Saylor, 2014).

Service delivery was the overall outcome of the other aspects of leadership hierarchy, Actors’ interests, policy compliance and external factors such as political environment. Their effectiveness and successful implementation were manifested in the efficient, prompt response and customer satisfaction in service delivery. The effectiveness was measured based on how well it meets the needs of its consumers. Every element in the organization determined how successful the desired outcome was to be. This implies that difficulty in one of the component generally affect the entire system. All the components must therefore be synchronized towards the main goal of providing better service or achieving the overall goal. Therefore, Service delivery was as successful as the elements of government bureaucracy, as leadership hierarchy, Actors’ interest, policy compliance and political environment were. Thus, systems theory allows for the inclusion of more than one factor (leadership hierarchy, Actors’ interest, policy compliance and political environment) in the investigation service delivery in the SOEs in the energy sector in Kenya.

METHODOLOGY
The study relied entirely on pragmatism research philosophy because it advocates for mixed-methods research that is deemed prudent for social research (Morgan, 2014). The study utilized both descriptive and explanatory research designs using cross-sectional survey data that allowed for triangulation of data and thus increasing the validity of the findings. This inquiry precisely focused on the two state corporations within the energy sector and the regulator of the corporations. Precisely, on survey was confined to operational personnel, junior level managers and senior level managers working in the head offices of KPLC, REREC and EPRA. Furthermore, suppliers and end-user consumers of KPLC and REREC served at the head offices of KPLC and REREC also constituted part of the population of the study. The study surveyed senior managers who reported to the chief executive officer as they discharged their duties in the various functional
units and were there sufficiently knowledgeable and conversant with relevant practices relating to government bureaucracy, working environment and service delivery in the respective state owned enterprises. An aggregation of subjects comprising the population of this study was 7,558 distributed in the manner depicted in the tabulated data. Generally, the population of the study was distributed into 5138, 2390 and 30 subjects translating to 67.98 percent, 31.62 percent and 0.40 percent for KPLC, REREC and EPRA respectively. In particular, a majority of subjects in the population are associated with KPLC comprising of 20 senior management, 86 junior management, 1711 operation personnel, 76 suppliers and 3245 end-users. The least number of subjects in the population were attributed to EPPRA with 5 senior managers, 9 junior mangers and 16 operational personnel. The rest of subjects in the population were associated with REREC and comprised of 19 senior management, 83 junior management, 378 operation personnel, 48 suppliers and 1862 end-users.

The Ministry of Energy had 6 Semi-Autonomous Agencies, 5 SOEs and an Energy tribunal, from which this study choose KPLC and REREC as the two state owned enterprises are utility institutions offering similar services to end-users and the characteristic profiles of the end-users are similar, in addition to the Energy and Petroleum regulator (EPRA) as an Actor with interest. The sampling frame for this study constituted a list of 7,558 subjects comprising of senior management, junior management, operation personnel of the two state owned enterprises and EPRA, and suppliers and end-users of KPLC and REREC. The sample size of 380 for the survey was determined by using Yamane (1967) formula for computation of sample size.

This survey constituted of primary data that was essentially gathered using a semi-structured questionnaires, a widely applied tool for collecting empirical information required for test hypotheses and drawing conclusions (Kothari, 2014). The questionnaire was structured into two broad sections for general and specific information. The general information section comprised of five questions that sought information relating to characteristics of the respondents involved in this study. The specific information section was intended to elicit information and responses on the observable aspects of the research variables necessary for responding the research objectives of this study. Moreover, the general information section was structured into sub-sections for leadership hierarchy, actors’ interest, policy compliance, political environment, working environment, and service delivery. The majority of questions in the questionnaire were closed ended in nature and constructed on a five point Likert rating scales to aid in collection of quantitative data for purposes of facilitating testing of the formulated hypotheses. A smaller proportion of the questionnaire consisted in open ended questions intended to gather qualitative responses that could enrich the data gathered through the closed ended questions.

In this study, four fundamental stages of quantitative data analysis including data preparation, summarization of sample characteristics, diagnostic tests of linear regression, and estimation of population measures were carried out. The collected data was carefully examined for completeness, quality, and consistency. These data were coded and transcribed thus providing for computerised consistency checks and cleaning of data. Descriptive statistics including frequency and percentage distribution, sample mean and sample standard deviation were generated to aid in developing a concise summary of the defining observable features of the surveyed sample. The summary measures of the observed sample were presented in figures and tables. This summary measures were instrumental for carrying out further statistical analysis and testing of the hypothesized relationships between the research variables.
Empirical Model

Moderation Analysis

The moderating role of working environment on the effect of government bureaucracy on delivery of services was carried out as guided by the two steps approach recommended by Baron and Kenny (1986 as also cited by Njoroge, 2020). However, in view of the adopted approach, it was necessary to construct a composite index for leadership hierarchy, actors’ interest, policy compliance and political environment using the formula for harmonic mean credited to Gupta (2009) as depicted in equation 1.

\[
\sum_{i=1}^{n} w_i = \sum_{i=1}^{n} (w_i + x_i) \quad \text{...} \quad \text{...} \quad \text{1}
\]

Where:

- \( w_i \): Weight associated with \( i^{th} \) dimension of government bureaucracy
- \( x_i \): Dimension of government bureaucracy

The composite index so generated in equation 1 was crucial for ensuing test of moderation of working environment on the effect of government bureaucracy on service delivery. In line with the adopted approach for moderation analysis, the first step entailed regression of government bureaucracy on service delivery as shown in equation 3.3.

\[
Y = \beta_0 + \beta_1 GB + \epsilon \quad \text{...} \quad \text{2}
\]

Where:

- \( Y \): Service delivered
- \( \beta_0 \) to \( \beta_1 \): Regression coefficients
- GB: Government bureaucracy
- \( \epsilon \): Error term

The first regression analysis was necessary for making a statistical determination as to whether there is a relation between government bureaucracy and service delivery that can be affected by working environment as a moderator. If the parameter for government bureaucracy turned non-significant at 5 percent level of significance, it would then not be necessary to proceed to the second step of moderation analysis. In the second step, government bureaucracy, working environment and the interaction term (government bureaucracy*working environment) were regressed on service delivery as illustrated in equation 3.

\[
Y = \beta_0 + \beta_1 GB + \beta_2 WE + \beta_3 GB*WE + \epsilon \quad \text{...} \quad \text{3}
\]

Where:

- \( Y \): Service delivered
- \( \beta_0 \) to \( \beta_3 \): Regression coefficients
- GB: Government bureaucracy
- WE: Working environment
- GB*WE: Interaction term
- \( \epsilon \): Error term

This step served an important role in making the required statistical decision on moderation analysis. Essentially, if the parameter for working environment (\( \beta_2 \)) in equation 3 is significant at 5 percent level of significance then it would follow that working environment is an explanatory variable, however, if the parameters for working environment (\( \beta_2 \)) and the interaction term (\( \beta_3 \)) are non-significant and significant respectively at 5 percent level of significance, then it would follow that working environment is moderator. The case for no moderation would be indicated if both the parameters for working environment (\( \beta_2 \)) and the interaction term (\( \beta_3 \)) would turn non-significant at 5 percent level of significance. In the circumstance that there is moderation, the magnitude and direction of moderation of working environment would be explicitly implied by the parameter for the interaction term (\( \beta_3 \)).

FINDINGS

Working Environment

In this study, working environment was construed as a moderating variable and operationalized using information and communication technology, and organizational culture. In essence, relevant contextual activities and aspects construed as working environment in the context of state owned enterprises in the energy sector were observed and analyzed to provide insights on the summary measures of the data collected. The results of
The findings in Table 1 shows that the highest sample mean of the data gathered on information and communication technology was 3.54 for the aspect that quality of services offered has improved due to information communication technology with a corresponding standard deviation of 1.10. On the other extreme, the lowest sample mean response of observation made was 2.52 on the aspect that there is delay in responding to actors complaints due to information communication technology with a corresponding standard deviation of 1.09. It is evident that a majority of the sample mean response for aspects construed as information and communication technology tended to a value of 3 on the measurement scale used in this study. This tendency is confirmed by the aggregate mean response and standard deviation of 3.32 and 1.14 respectively associated with information and communication technology. The statistical behavior of the data set gathered confirmed that practices construed as information and communication technology were moderately evident in the surveyed state owned enterprises in the energy sector.

In addition, analysis of the set of aspects espoused for measuring organizational culture revealed that...
the largest sample mean response was 3.24 for the aspect on Sharing of information amongst actors is encouraged in the organization. On the converse, the smallest observed mean response was 2.91 for the aspect that actors work together to solve problems in the organization. In general, the summary behavior of the data set gathered on organizational culture approximated to a value of 3.00 on the rating scale used for this empirical inquiry. Corresponding values of sample standard deviation were generally low as they ranged between 1.06 and 1.26 implying that there was low variability of participant responses on the set of aspects measured. The aggregated values of working environment at 3.17 and 1.14 for sample mean and standard deviation respectively demonstrated that the variability of responses was narrow and as such the sample measures observed could be used in estimation of measures for the population of this study.

Service Delivery

Service delivery was hypothesized as the outcome variable in this study. The indicators that were adopted to measure service delivery included efficiency, effectiveness, turnaround time, and quality of service. The summary measures of central tendency and dispersion for the set of data gathered on service delivery in state owned enterprises in the energy sector are presented in Table 2.

<table>
<thead>
<tr>
<th>Service Delivery</th>
<th>n</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>The organization is keen to perform the promised service</td>
<td>305</td>
<td>1.00</td>
<td>5.00</td>
<td>3.32</td>
<td>0.68</td>
</tr>
<tr>
<td>There is good accessibility to organizational services</td>
<td>305</td>
<td>1.00</td>
<td>5.00</td>
<td>3.10</td>
<td>0.76</td>
</tr>
<tr>
<td>Needs of actors are attended to on a timely basis</td>
<td>305</td>
<td>1.00</td>
<td>5.00</td>
<td>2.95</td>
<td>1.19</td>
</tr>
<tr>
<td>There are delays in performance of services in the organization</td>
<td>305</td>
<td>1.00</td>
<td>5.00</td>
<td>2.74</td>
<td>0.95</td>
</tr>
<tr>
<td>Actors are satisfied with the levels of accuracy in performance of services in the organization</td>
<td>305</td>
<td>1.00</td>
<td>5.00</td>
<td>2.92</td>
<td>1.21</td>
</tr>
<tr>
<td>Actors convenience in performance of service is valued</td>
<td>305</td>
<td>1.00</td>
<td>5.00</td>
<td>3.09</td>
<td>0.75</td>
</tr>
<tr>
<td>Service performance meets the expectation of actors</td>
<td>305</td>
<td>1.00</td>
<td>5.00</td>
<td>3.31</td>
<td>0.83</td>
</tr>
<tr>
<td>Operating hours of the organization are convenient to actors</td>
<td>305</td>
<td>1.00</td>
<td>5.00</td>
<td>3.42</td>
<td>0.77</td>
</tr>
<tr>
<td>Performance of service is characterized by thoroughness</td>
<td>305</td>
<td>1.00</td>
<td>5.00</td>
<td>3.38</td>
<td>0.82</td>
</tr>
<tr>
<td>Actors are given individual attention in the organization</td>
<td>305</td>
<td>1.00</td>
<td>5.00</td>
<td>2.92</td>
<td>1.20</td>
</tr>
<tr>
<td>Actors are satisfied with the level of service performance</td>
<td>305</td>
<td>1.00</td>
<td>5.00</td>
<td>3.00</td>
<td>0.69</td>
</tr>
<tr>
<td>Actors are informed about when the service would be performed</td>
<td>305</td>
<td>1.00</td>
<td>5.00</td>
<td>2.85</td>
<td>1.24</td>
</tr>
<tr>
<td>Actors feeling are considered in performance of service</td>
<td>305</td>
<td>1.00</td>
<td>5.00</td>
<td>2.96</td>
<td>1.08</td>
</tr>
<tr>
<td>Actors feel safe during performance of service</td>
<td>305</td>
<td>1.00</td>
<td>5.00</td>
<td>3.09</td>
<td>0.72</td>
</tr>
<tr>
<td>Organization’s documents are free of errors</td>
<td>305</td>
<td>1.00</td>
<td>5.00</td>
<td>2.42</td>
<td>1.21</td>
</tr>
</tbody>
</table>

**Aggregate Scores for Service Delivery**

<table>
<thead>
<tr>
<th>Service Delivery</th>
<th>n</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate Scores for Service Delivery</td>
<td>305</td>
<td>1.00</td>
<td>5.00</td>
<td>3.03</td>
<td>0.94</td>
</tr>
</tbody>
</table>

Source: Survey Data (2021)

The results displayed in Table 2 revealed that the sample mean response for the observations made that regarding service delivery ranged between 2.42 for the aspect of organization’s documents are free of errors and 3.42 for the aspect that operating hours of the organization are convenient to actors. On the former aspect, the corresponding standard deviation is relatively high at 1.21 implying that the responses gathered on this aspect were not close together on the measurement scale used. The general behavior of the sample mean response of the data set gathered implies that the practices typified by the activities and aspect measured are moderately manifested in the surveyed state owned enterprises in the energy sector.

It is evident that operational hours are convenient to actors, there is thoroughness in service
performance, there is safety during service performance, service performance meet the expectation of actors, and keen interest is manifested in executing the promised services. It was also noted that there are moderate delays in performance of services, and institutional documents are moderately free of errors. The aggregated sample mean response for all aspect of service delivery observed in this study was 3.03 and the corresponding standard deviation was 0.94. These overall behavior of observations gathered implies that the attendant aggregate variability is low and thus the summary measures of the sample are suitable for making generalization to the population of study.

Moderation Analysis

The moderating role of working environment on the effect of government bureaucracy on service delivery was carried out as guided by the two steps approach recommended by Baron and Kenny (1986). However, in view of the adopted approach, a composite index for leadership hierarchy, actors’ interest, policy compliance and political environment was constructed using the formula for harmonic mean credited to Gupta (2009). In line with the adopted approach for moderation analysis, the first step entailed regressing government bureaucracy on service delivery. The statistical output for this simple linear regression analysis is presented in Table 3.

Table 3: Government Bureaucracy and Service Delivery

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.850$^a$</td>
<td>0.723</td>
<td>0.722</td>
<td>0.40198</td>
<td>1.815</td>
</tr>
</tbody>
</table>

**Dependent Variable:** Service Delivery  
**Predictors:** (constant), Government Bureaucracy  
**Source:** Survey Data (2021)

In Table 3, the statistics for model summary demonstrates that the correlation coefficient for the estimated model is 0.850 whereas the coefficient of determination (R Square) is 0.723. The implication of the revealed coefficient of determination is that government bureaucracy as an explanatory variable accounts for 72.3 percent of variation of service delivery in the surveyed state owned enterprises in the energy sector. The unexplained 27.7 percent of variation in service delivery is associated with other research variables that were not investigated in this study.

Table 4: Analysis of Variance

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>127.590</td>
<td>1</td>
<td>127.590</td>
<td>789.613</td>
<td>.000$^a$</td>
</tr>
<tr>
<td>Residual</td>
<td>48.960</td>
<td>303</td>
<td>0.162</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>176.550</td>
<td>304</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Dependent Variable:** Service Delivery  
**Predictors:** (constant), Government Bureaucracy  
**Source:** Survey Data (2021)

The F test for the goodness-of-fit of the estimated model indicated 789.613 as the value for the F statistics at a level of significance (p-value) of 0.000. These results provide a statistical evidence that the estimated model is the most suitable model for fitting the set of observed data set in this study. Specifically, the estimated model is statistically significant at a level of confidence of 95 percent and 0.05 level of significance.
The regression coefficients tabulated in Table 5 aided in the estimation of respective statistical model as illustrated in equation 4.

\[
\text{Service Delivery} = 0.005 + 0.994 \text{ Government Bureaucracy}
\]

The output of coefficients of regression analysis demonstrated that when government bureaucracy is held at a constant level of zero, service delivery would be at 0.005 albeit with a p-value of 0.962 well above the adopted margin of error of 0.05. The implication of these results is that estimated coefficient representing the y-intercept is not significant at 95 percent level of confidence. Further, statistical evidence on the coefficient of explanatory variable indicates that a unit increase in government bureaucracy accounts for an increase of 0.994 in service delivery with a p-value of 0.001. As such, at 95 percent confidence level, government bureaucracy affect service delivery in the surveyed state owned enterprises in the energy sector.

In consideration that government bureaucracy was found to have a significant effect on service delivery, it became necessary to carry out the second step of moderation analysis. In this step, government bureaucracy, working environment and the interaction term (government bureaucracy*working environment) were regressed on service delivery. The results of this linear regression analysis are provided in Table 6.

The tabulated statistical output revealed that the correlation coefficient was 0.878, of an indication of existence of a strong positive linear relationship. The adjusted coefficient of determination was 0.769, which provided the statistical evidence that the estimated model explains 76.9 percent of variation in service delivery in state owned enterprises in the energy sector. The unexplained 23.1 percent of variation in service delivery is associated with other research variables that were not modelled in this relationship.
Further inspection of output of the F-test for the goodness-of-fit of the estimated model revealed 789.613 as the value for F statistics at a level of significance (p-value) of 0.001. It is therefore evident that the estimated model is the most suitable for fitting the set of observed empirical data set. Clearly, the estimated model is statistically significant at a level of confidence and level of significance of 95 percent and 0.05 percent respectively.

The regression coefficients tabulated in Table 8 aided in the estimation of respective statistical model as illustrated in equation 5.

\[ \text{Service Delivery} = 0.365 + 0.449 \text{ Government Bureaucracy} + 0.044 \text{ Working Environment} + 0.269 \text{ Government Bureaucracy} \times \text{Working Environment} \]

The tabulated output of coefficients of regression analysis demonstrated that when all other factors are held at a constant level of zero, the level of service delivery is 0.365 albeit with a p-value of 0.175 which exceeds 0.05. As such the coefficient for the constant term in equation 4.2 is not significant. Further inspection of these results revealed that the beta coefficients for government bureaucracy, working environment and the interaction term were 0.449, 0.044 and 0.269 respectively.

Apparently, whereas the p-values for government bureaucracy and the interaction term were less than 0.05, the p-value for working environment exceeded 0.05. Accordingly, working environment is a moderator in the modelled relationship. In line with Baron and Kenny (1986), 0.269 as the beta coefficient for the interaction term magnitude and direction of moderation of working environment. Specifically, a unit increase in working environment causes an increase of 0.269 in the slope of government bureaucracy and service delivery. As such, the researcher inferred that working environment moderates the relationship between government bureaucracy and service delivery in
state owned enterprises in the energy sector in Kenya.

The conclusion of this study concerning moderation is consistent with the observation made by Raziq and Maulabakhsh (2015) that a conducive working environment enables employees to work with ease, in a relaxed and free environment that does not exert undue pressure and as such reinforces the outcomes of government bureaucracy. Equally, the findings of this study confirms the empirical observations of Langat and Gachunga (2018) to the effect that working environment is an imperative for delivery of services in state owned enterprises. Similarly, the conclusion of this study validates the proposition made by the systems theory to the effect that all elements of an enterprises are interrelated and inter-dependent, and must therefore be synchronized for efficient and effective functioning of the unified whole (Saylor, 2014) available to actors impact on operational efficiency and has a bearing on delivery of services.

CONCLUSION, CONTRIBUTION AND RECOMMENDATIONS

The statistical criteria for moderation analysis confirmed that working environment has a statistically significant moderating effect on the direct effect of government bureaucracy on service delivery. The researcher thus concluded that working environment moderates the effect government bureaucracy on service delivery in state owned enterprises in the energy sector.

In view of the conclusion on the objective of the study, the human resource divisions of state owned enterprises ought to enact policy the buttress mutual trust, team spirit, sharing of information, openness, and sense of belonging. In addition, sufficient resources should be availed for strengthening information and communication infrastructure as one of the critical support system for enhancing the processes of value creation and delivery in state owned enterprises in the energy sector. Information communication technology is key enabler for service delivery in state owned enterprises. This institutional facet plays a key role in effective functioning and integration of efforts in different institutional units. Investments should be made to consistently enhance and upgrade information communication technology in order to promote the working environment in state owned enterprises. Apparently, there is a poor sense of belonging amongst actors in state owned enterprises. This state of affairs has potential to hamper effective delivery of service and as such, senior management should cultivate a warm environment for actors that promote mutual trust, openness and team spirit in state owned enterprises.

REFERENCES


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