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**Effect of Financial Management Practices on Performance of Commercial State-owned Enterprises in Kenya: A Machine Learning Approach**

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**Abstract**

State owned enterprises (SOEs) play a significant role in most global economies, serving as key drivers of economic growth and addressing market failures. They also support the government broader agenda of improving the citizens quality of live across the key domains of United Nations 17 Sustainable development goals (SDGs), Africa Agenda 2063; the “prosperous Africa that we want”, Kenya Vision 2030; “transforming the County in key Social, economic and Political spheres”, and the 2022-2030 government agenda focusing on “five priority areas of social economic transformation of Kenya by 2030. However, approximately 70% of these commercial SOEs are loss making despite being in key sectors. The objective this study was to examine the effect of financial management practices on SOE’s performance in Kenya. The study applied a post- positivism research philosophy and a cross-section approach to descriptive research design. The sampling frame and unit of analysis was the 41 commercial state-owned enterprises in Kenya. The unit of response was 205 managers of the SOEs. A closed ended questionnaire was used to collect primary data for the predictor and a secondary data collection sheet for the target variable. Kaiser-Meyer-Olkin (KMO) coefficient and Bartlett’s Chi-Square from Confirmatory Factor Analysis were used to enhance construct validity. Ordinary Least Squares was used for inferential analysis after testing the data for Gaussian distribution, linearity and autocorrelation. The study found that 62.8% of the variations in SOEs performance could be explained by financial management practices and that there is a statistically significance influence of these practices on SOEs performance. These findings imply that departing from best practices in financial management practices can have a significant effect on SOE performance. Risk management policy, risks assessments, risk appetite thresholds, risk monitoring & reporting and comprehensiveness of internal financial controls are also elastic to these practices. This study recommends a focussed approach to the review and harmonization of policy/ies driving these financial management practices at entity level and attention to utilisation of technology in financial management processes so as to drive strategic performance.

**Keywords:** financial management practices, machine learning, organizational performance, state-owned-enterprises

## **1.0 Introduction**

### *1.1 Background of the Study*

State owned enterprises (SOEs) play a significant role in many global economies, serving as key drivers of economic growth, industrial development, and employment (Mauludina, Azis & Susanto, 2023). SOEs hold a dominant position among the world's largest firms. In the past two decades, the assets of the top 2000 global SOEs have doubled their assets up to 20% of the total assets accounting for approximately half of GDP worldwide (IMF,2020), driven mainly by their rapid growth in emerging markets (Gaspar Medas, & Ralyea 2020; World Bank 2020). SOEs also play a significant role in public investment and on average accounts for over 30 percent of infrastructure investment in sub-Saharan Africa (Harris Imbert, Medas, Ralyea, & Singh., 2020), 5% of employment, and up to 40% of domestic output, on average internationally (IFC, 2018) and more than half of all infrastructure projects commitments in emerging market economies and low-income developing countries (IMF, 2020). Given these significant contributions, understanding and analysing the performance of SOEs is of utmost importance for policymakers, stakeholders, and investigators. SOEs have the tendency to underperform relative to private firms in terms of profitability (IMF, 2020). Globally, SOEs continue to control enormous bands of country's GDP. In some African countries, it controls more than 50 percent and up to 15 percent in Asia, Eastern Europe, and Latin America. Studies have shown that SOEs struggle to meet the private sector's performance levels, and as a result, potential profits remain unrealized (Mckinsey, 2018).

In a survey on state moneys advanced to SOEs carried out in 2012, the findings revealed that SOEs represent 80% of China's stock market capitalization, 62% of Russia's, and 38% of Brazil's. Additionally, cited that SOEs contribute approximately 10% of the world GDP. These entities are key players in both emerging and developed economies. The percentage of SOEs among the world's largest firms has increased significantly over the past two decades, driven mainly by the rapid growth of SOEs in emerging markets (Gaspar et al. 2020; World Bank 2020). In some instances, SOEs hold a leading position in the market and are often a significant source of employment (World Bank, 2021). SOEs also play a significant role in public investment and on average account for over 30 percent of infrastructure investment in sub-Saharan Africa in 2017 (Harris et al., 2020; MF, 2020b). The failure of SOE in in developing countries is likely to cause systemic problems for the economy (Magersa, 2020). The performance of the Kenyan SOEs deteriorated noticeably from 1990s, with growth falling below their potential. Possibly, a number of factors accounted for and continue to contribute to this poor performance, (RoK 2006).

History of poor financial performance of SOEs in most African countries is attributed to inefficiencies in the SOE's, lack of good corporate governance practices, and provision of poor products and services, (Boko & YuanJan, 2011). In Sub-Saharan Africa SOEs revenues account for an average of 14 percent of GDP compared to 3.5 percent in Kenya. In large and more diversified economies such as Namibia and South Africa, SOEs revenues account for between 3-10 percent of GDP (World Bank, 2021a). In contrast, some small economies that are less

diversified, or resource dependant countries such as Seychelles, Lesotho and Angola, their SOEs revenues account for an average of between 30-40 percent of GDP. In Kenya, there is shallow evidence that SOE's produce social benefits including: improved income distribution, technology transfer, and increased employment, contributions to regional equality and management training that might have offset or justified the investment put in by the government (World Bank, 2021). In addition, the aggregate operational performance of SOE is negative in the recent years indicating pre-existing financial performance challenges (GoK, 2020). A fair majority of SOEs are making losses averaging to about 14.7 billion shillings per annum and a few are profitable, with total net profit of about 30.42 billion shillings for the period between, 2017-2021, (GoK, 2021). Benchmarking efficiency indicators with private sector counterparts in certain key industries have shown that SOE's are lagging behind. In the banking sector, state-owned banks showed lower rates of return on assets of about 2.2 per cent, compared to 2.6 per cent for private banks, but higher non-performing loans and non-performing earning assets compared with the private banks (KNBS 2021). Auditor general reports, 2017-2021, reveals that SOEs have sunk into insolvency at an alarming rate. IMF, (2020) report alluded that poor financial performance by Kenyan SOEs has forced reviews of the budget in terms of subsidisations, capital injections and on lending. In order to sustain their operations, SOEs benefit from government-support in the form of on lent and guaranteed loans, equal to 4.6 percent of GDP (World Bank, 2020). Despite this, several loans have not been repaid or are in arrears (Harris et al., 2020; IMF, 2020). IMF- FTE has rated the fiscal risk rating from SOEs in Kenya as "high". This financial risk is concentrated in 95% of the loss-making entities and 84 percent of entities with negative equity (Harris et al., 2020; IMF, 2020).

### *1.2 Problem Statement.*

State-owned Enterprises (SOE's) in Kenya are generally reported as thriving and ones that continue to provide quality service to citizens. This is consistent with the government agenda of improving the citizens' quality of live and social economic transformation of Kenya by 2027. The SOEs can be categorized as commercial or non-commercial in their business model. Financial analysis of the organizational performance of the forty-one commercial SOEs show that only 3 in every 10 of the Commercial SOEs were profitable in the years (2017-2023). This implies that approximately 70% of the commercial SOEs are loss making entities despite being in key sectors of the economy. Forty percent (40%) of those in education, science and technology industry, fifty percent (50%) of those under National treasury, 57% in energy and petroleum sector, 73% of those agriculture livestock and fisheries sector, 80% of those in East Africa affairs, commerce & tourism were loss making. Further and surprisingly, the commercial SOEs in environment, water and natural resources, communication and technology, industrialization and enterprise development were on average all loss making. This implies that these entities are eroding resources from the government and other private investors. It can also be inferred that in actual sense, these institutions are constrained in supporting the development agenda and are equally not commercially sustainable. In spite of the dismal performance, there is no evidence that the are actually performing well in terms on non-financial measures of customer satisfaction, learning and growth and internal business processes. The Governable has made several reforms to drive performance in these sectors including, economic recovery strategy

(ERS) (Asenga 2018), restructuring of public enterprises and public financial management reforms, the sector-wide reforms under the GJLOS1 reform initiative, Governance Action Plan, enactment of the Public Finance Management Act 2012 (RoK, 2020). Other reforms include, establishment of the Public Procurement Oversight Authority to oversee public procurement and Mwangozo Code of Corporate Governance (MCCG) of 2015 to address the weak governance structures among SOEs. Ironically, the challenges of poor performance in public sector have continue to persist in the SOEs despite the government efforts to improve efficiency and performance in the public service and establishing the Kenya National Innovation Agency to support public and private sector innovations and entrepreneurship. Despite the reforms, there is dismal evidence that SOE's performance has improved significantly and is a great concern for an emerging country like Kenya (World Bank, 2021; IMF 2020). Economic theories, point that performance of SOEs can be a function of several factors including; financial management practices, governance practices, organizational innovativeness among others. Best practices on these drivers could enhance performance of any commercial enterprise towards profitability and sustainability and hence support contribution towards shared prosperity.

### *1.3 Literature Review*

#### *1.3.1 Agency Theory*

Agency theory argues that firms led by self-interested managers, owners, regulators among other stakeholder may grow to a point with diminishing returns to owners unless there are proper operational practices and corporate governance mechanisms (Peng, Bruton, Stan & Huang 2016). The dilemma of agency is one that is rather complex and whose conflicts cannot be overlooked because it affects organizational performance and sustainability. Jensen and Meckling (1976) proposed this hypothesis, noting that the agency problem stretches back to when human civilization started to be practiced, with businesses always aimed at maximizing profits. The agency problem has taken various forms and shapes as time passes. The theory operates in the context relating to corporate governance issues, it examines the relationship between principals (owners or stakeholders) and agents (management or directors) and how governance mechanisms influence this relationship. The theory suggests that conflicts of interest can arise between the principal and the agent (management) due to differing goals and information asymmetry (Ferina, 2021). In the context of SOEs, this theory can be applied to understand how financial management practices, such as budgeting, cost control, and investment decisions, impact performance (Assagaf & Ali, 2017). The theory explores how aligning the interests of stakeholders and management through effective financial management practices can enhance SOE performance. The framework will explore how aligning the interests of stakeholders and management through effective financial management practices can enhance SOE performance.

A study by Lazzarini and Musacchio, (2018) on agency theory logic, showed that state ownership reduces organizational performance because state owners pursue a number of objectives, some of which conflict with those of other stakeholders in the firm. Additionally, conflicts of interest create agency costs that reduce efficiency and ultimately the financial performance of companies. This theory supports the objective that analysed the influence of

financial management practices on performance of commercial state-owned enterprises in Kenya.

### 1.3.2 Balanced Scorecard

Balanced scorecard is a classical model used to measure strategic organizational performance. The scorecard developed over several years to support different organizational missions, from profit maximization, to service delivery in public, private, and not for profit and it played a role of realizing and integrating the contributions of all the relevant organizational value drivers that promote alignment between the non-financial and financial measures. Additionally, the scorecard help in identifying and measuring the specific value drivers that underpins organizational performance (CIMA, 2005). This classical model by Kaplan & Norton (1992), aimed at adding leading measures that represented indicators of future financial performance to the traditional financial measures. Asiedu (2015), affirmed that the tool is excellent in measuring and monitoring non-financial performance measures cutting across the customer perspective, internal business processes perspective and learning and growth perspectives. The BSC tool is said to support a dashboard that could monitor organizational past and strategic performance (Gawankar et al., 2015).

### 1.4 Empirical Literature

Several studies have been done on the relationship between financial management practices and firm performance among financial institutions. In addition, empirical studies and reports have identified certain variables as relevant to influence organizational performance in SOEs; corporate governance (Abanga et al 2022; Abanga & Wangombe 2021; Asenga 2018; Mbo 2017; Yu & Zheng 2014; Wong & Zhang 2007; Boubakri, Cosset & Saffar, 2008; Yeh, Shu & Chiang 2014), Production & efficiency (Boardman et al., 2016; Burki & Niazi, 2010; Gao et al., 2021; Motohashi, 2018.), financial management and investment decisions (Chen et al., 2022; Guo et al., 2023; Ho et al., 2022; Ren et al., 2023; Ferina 2021; Kamau & Simiyu 2019; World bank, 2018) and organizational Innovativeness (Boxu et al., 2022; Castelnovo, 2022; Gao & Zhang, 2023; Han & Gu, 2021; Li & Zhao 2022; Yu & Hu, 2022; Yue, 2022; Zhang & Aummeboonsuke; 2022, Musacchio & Ayerbe 2019; Gachunga & Langat 2018). Other studies focussed on selected factors influencing organizational performance of SOEs (Abanga, Tauringana, Wangobe & Achiro 2022). The deviations in results may be due to numerous reasons which this study endeavours to unearth. Abanga et al (2022) suggested that there is need for more evidence based on other developing countries. Abanga & Wangombe (2021), Asenga (2018), supported the call for more studies on broader factors other than corporate governance that impact on organizations performance. In Asia, success in SOEs performance is attributed to technological innovations together with good corporate governance. Nonetheless, a strong oversight and control agency can yield better performance from SOEs (Musacchio & Ayerbe 2019).

However, three variables known to exercise considerable influence on organizational performance in SOEs will be considered in this study, financial management practices, corporate

governance practices and organizational innovativeness. From the reviewed literature, it was hypothesized that: Ho1: financial management practices do not have a statistically significant influence on performance of state-owned enterprises in Kenya.

### *1.5 Conceptual Framework of the Study*

This study conceptualized financial management practices as the regressand for weighted SOEs performance. SOE performance was measured using secondary data (Return on Investment-ROI) and also primary data (customer perspective, internal business process, learning and growth practices) for triangulation purposes.

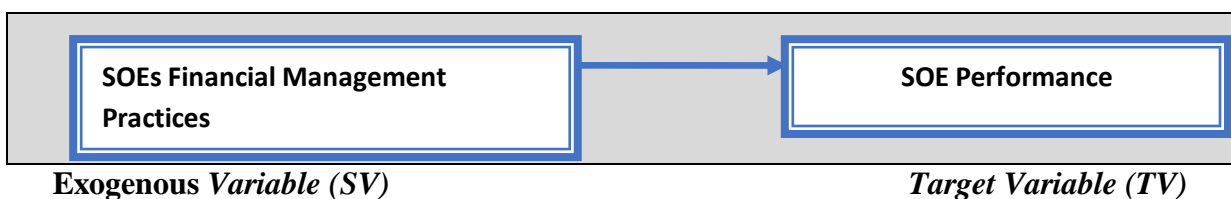


Figure 1: *Conceptual Framework for Financial Management Practices and SOEs Performance*

### *1.6 General Objective*

The general objective of the study was to examine the effect of financial management practices on performance of commercial state-owned enterprises in Kenya.

### *1.7 Research Hypothesis*

This study tested the hypothesis that Ho1: financial management practices do not have a statistically significant influence on performance of commercial state-owned enterprises in Kenya.

### *1.8 Research Gaps*

The evaluation of the subject matter of this study was implemented using precise parameters for the target variable, sing lagging measures and strategic measures. In addition, the study triangulated the assessment of SOE performance by weighting the secondary data measures with the primary data measures to address methodological gaps in the study problem. This study used a machine learning algorithm, applying python libraries to train and test the integration of the study variables using stats models and Ordinary Least Squares (OLS). This study sought to assess the influence of these financial management practices on strategic performance measures among commercial state-owned enterprises.

## 2.0 Method

### 2.1 *Philosophy, Design and Instrumentation and Data collection*

This research was anchored on the four (4) principles of constructivism philosophy; phenomenism, objectivism, deductivism and inductivism and adopted descriptive research design Mertens (2012). The unit of response was five (5) SOEs managers from; finance, internal audit, operations, information and communications and human resources. The population was forty-one (41) licensed commercial state-owned enterprises in Kenya (RoK, 2022). Twelve percent (12%) of those are education, science and technology industry, (10%) of those under National treasury, 17% in energy and petroleum sector, 27% of those agriculture livestock and fisheries sector, 12% of those in East Africa affairs, 10% in the transport and infrastructure, commerce & tourism, 5% in communication and technology, 7% in industrialization and enterprise development, 2% in the environment, water and natural resources. This population was assessed as a small population and hence the study adopted a census approach (Bryman, 2012, Cooper & Schindler, 2011). Primary data was collected using a structured questionnaire and in the case of secondary data, secondary data collection sheet. As such a five-point ordinal scaled tool was used with the equivalences of strongly disagree (1) on one side with a scale, followed by disagree (2), neutral (3), agree (4) and strongly agree (5) on the other side of the scale (Charandrakandan, Venkatapirabu, Sekar & Anandakumar 2011). The measure for SOE performance was triangulated by using a secondary data measure in addition to a primary measure. The study utilized the Statistical Package for Social Sciences (SPSS) version 26 and Python Libraries, that is pandas, statsmodels.api, statesmodels.formula.api, statsmodel.api and statsmodel.stats. Anova. This study applied a .20 to 0.80 proportions for the train and test respectively using the algorithm ( $X_{train}, X_{test}, y_{train}, y_{test} = \text{train\_test\_split}(X, y, \text{test\_size}=0.2, \text{random state}=42)$ ). The transcendental number 42 was used as it is theoretically said to guarantee that the same sequence of random numbers is generated each time the Python code for the model is run. The results of the Statsmodel Linear Summary - Ordinary Least Squares Regression Results were generated for the null hypothesis in data analysis process.

### 2.2 *Stability and Validity of Instrumentation of Data Collection Tool*

Reliability was assessed to assess the internal consistency using Cronbach Alpha Coefficient. Reliability test results are presented in Table 1 and show that reliability of this construct using Cronbach alpha was 0.818. Mertens, (2010) and Bonett and Wright (2015), view that a Cronbach's coefficients of 0.7 should be acceptable as a rule of thumb to indicate a threshold for acceptable level of stability assessment. Kaiser-Meyer-Olkin (KMO) coefficient of 0.740, Chi-Square of 1677.145 and associated p-value of .000 was generated indicating a satisfactory validity and sampling adequacy for factor analysis. Principal Component Analysis (PCA)'s varimax rotation generated seven components from Rotations Sums of Squared Loadings (RSSL) out of which four (4) were retained based on a PCA's rules of eliminating cross-loadings and singular factor loading with a threshold of 0.4 (Koshy, 2010, Tabachnik & Fidell, 2014).

Table 1: Reliability test Results

| Variable                       | Before CFA       | After CFA    | KMO   | Chi-Square & P-value | P-value | Cronbach Alpha Coefficient |
|--------------------------------|------------------|--------------|-------|----------------------|---------|----------------------------|
|                                | <b>Number of</b> | <b>Items</b> |       |                      |         |                            |
| Financial Management Practices | 24               | 20           | 0.740 | 1677.145             | 0.000   | 0.818                      |

*2.3 Data Analysis and Presentation of Results*

Data analysis was phased out in four; that is, descriptive analysis (means and standard deviation), Confirmatory Factor Analysis (CFA), test of regression assumptions and then inferential analysis. The twenty-four (24) parameters’ mean of 3.541 and standard deviation of 1.154 were generated for preliminary evaluation. Hypothesis testing was done using simple OLS linear model. OLS output statistics were extracted and interpreted. The equation used in this study was in the form;  $Y/SOE\ Performance = \alpha + \beta_1 + \epsilon$ ; where  $\beta_1$  is SOEs’ financial management practices (predictor) and is ‘Y’ is SOEs performance (Perf) (target variable). This equation is supported by Montgomery, Peck, & Vining, 2001; Garson, 2012; Argyrous, 2011).

**3.0 Results and Discussions**

3.1 Response Rate

Table 2: Response Rate

| Questionnaires Distributed | Questionnaires Received | Percentage Response |
|----------------------------|-------------------------|---------------------|
| 205                        | 196                     | 95.16               |

A total of 205 questionnaires were distributed to the 41 SOEs, one hundred and ninety-six (196) questionnaires were filled and returned giving a satisfactory composite response rate of 95.61%. The response rate was regarded as good for this study; an indicator that hypothesis testing could be carried out on the results of this analysis. This high response rate was attributed to anonymity and self-administration of the instrument. (Charandrakandan, Venkatapirabu, Sekar & Anandakumar, 2011).

*3.2 Test of Regression Assumptions*

Miles and Shevlin (2010) view that before hypothesis testing on any ratio scaled data, it is imperative that statistical assumptions about the distribution and attributes of predictors are evaluated. These statistical assumptions are basically done on the response variable distribution and that of the residual’s distribution. (Chatterjee & Simonoff ,2013).



3.2.1 Test of Normality for Loan Performance

SOE performance was measured using both primary data and also secondary data for the years 2018-2023. The primary data was weighted for the four sub-constructs used to measure them, that is, the financial perspectives, customer perspective, internal business processes perspective and finally learning and growth perspective. The output from the weighting was labelled Organizational performance – *Primary measures*. Average SOEs (RoI) measures were computed for the five years and termed as “secondary measures of SOE performance”. Return on investment, that is (average profit after tax / Average Total Assets) \*100 was computed for the five years period (2018-2023). Some of the returns were negative (-ve) while others were positive (+ve). The negatives arose as some the SOE had losses and the positives arose because of the SOE that had profit on average. In order to ensure that all data was positive, the entire data was pulled and/extrapolated by adding a coefficient ensuring that all the values were positive. Through a [+ 1.0376] additional across all the resultant values. As such, final measure of  $Y_a$  was arrived as  $[\text{Log}Y_a + 1.0376]$ . In the case of the assets, the average total assets figure in (millions) was transformed to its Log10) and the resultant log values labelled average assets. Finally, a composite measure incorporating the primary measures and the secondary measures was computed and labelled SOE organizational performance-weighted measure. The Kolmogorov-Smirnov (K-S) and Shapiro-Wilk (W-S) statistics for numerical tests of normality for SOE are presented in Table 3.

Table 3: Normality Test for SOE Performance Measures

|                                 |              |          | Kolmogorov-Smirnov <sup>a</sup> |    |       | Shapiro-Wilk |    |      |
|---------------------------------|--------------|----------|---------------------------------|----|-------|--------------|----|------|
|                                 |              |          | Statistic                       | Df | Sig.  | Statistic    | Df | Sig. |
| SOE                             | Performance: | Primary  | .270                            | 39 | .200* | .855         | 41 | .252 |
| SOE-Performance: Secondary Data |              |          | .254                            | 39 | .149  | .838         | 41 | .243 |
| Org.                            | Performance: | Weighted | .243                            | 39 | .200* | .858         | 41 | .284 |

Table 3 shows that the statistics are insignificant with p-values of Kolmogorov – Smirnov coefficients of .200\*, .149 and .200\* respectively for the three (3) measures of SOE performance, that is, primary data measures, secondary data measures and the weighted scores, respectively. Similarly, the Table shows that the coefficient of Shapiro –Wilk statistics were .855 for the case of primary data measures, .838 in the case of secondary data measures and .858 in the case of weighted scores for SOE performance. These three statistics indicate that the three measures of SOE performance were normally distributed in general, implying that the data was adequate for a Structured Equation Modeling (SEM) using OLS. (Shapiro & Wilk, 1965; Garson 2012); Tabachnick & Fidell (2014).

3.2.2 Test of Autocorrelation for Financial Management Practices

The test of independence for financial management practices was carried out using Durbin-Watson *d* statistics. A Durbin-Watson *d* statistics of 1.731 was extracted and was within the range of 1.5 and 2.5 for an acceptable level of no autocorrelation in a variable measure. Based on

this statistic, the assumption of absence of autocorrelation in the parameters measuring the study variables was confirmed (Bhattacharyya, 2011; Argrou, 2011).

### 3.2.3 Test of Linearity

The predictor variable (financial management practices) and the target variable (SOE performance) were subjected to a pair-wise linearity test using Pearson's correlation coefficient ( $r$ ). A correlation coefficient of 0.813\*\* was generated with a p-value of .000. This statistic implied existence of linear relationship between financial management practices and SOE performance. As such, OLS simple linear model was deemed appropriate for testing the study hypothesis. (Chatterjee & Simonoff, 2013).

### 3.3 Inferential Results

This study tested the null hypothesis ***H<sub>01</sub>: financial management practices do not have a statistically significant influence on organizational performance among commercial state-owned enterprises in Kenya.*** The weighted scores of financial management practices were processed using, pandas, statsmodels.api, statesmodels.formula.api, statsmodel.api and statsmodel. stats. Anova. This study applied a 0.20 to 0.80 proportions for the train and test respectively using the algorithm ( $X_{train}, X_{test}, y_{train}, y_{test} = train\_test\_split(X, y, test\_size=0.2, random\_state=42)$ ) and the OLS output generated. The overall configuration of the OLS linear regression output, overall model performance metrics and statistical significance of the coefficients of the model are presented in Table 4.

The R-Squared coefficient of 0.628 mean that approximately 62.8% of the variability in performance of commercial state-owned enterprise can be explained by financial management practices. An assessment of the trade -off between model complexity and predictive power shows that the Adj. R-Squared is 0.616, meaning that addition of other random variables would not significantly improve the predictive power of financial management practices. The Table further shows that the F-statistics of 52.09 and an associated Prob (F-statistic) of 4.94e-08. This means that the simple linear measures in the restricted model of financial management practices and weighted performance have a 0.00% chance that they are random / happened by chance. This indicate that overall model is adequate for evaluating the effect of financial management practices on performance of commercial state-owned enterprises in Kenya. Based on these statistics, this study rejects the null hypothesis that *financial management practices do not have a statistically significant influence on performance of state-owned enterprises in Kenya and indeed confirm that financial management practices have a statistically significant influence on performance of commercial state-owned enterprises.*

The Table also shows that the Akaike's Information Criteria (AIC) and the Bayesian Information Criteria (BIC) were -36.59 and -33.66 respectively. These two metrics are relatively low and indicate a good balance between model parsimony and complexity. The study was further interested in determining the significance of the simple linear OLS regression between financial management practices and SOE Performance. The Table shows that coefficient ( $\beta$ ) for financial

management practices was 0.3740 and an associated,  $p>|t|$  value of 0.000 which was less than a p-value of 0.05. This implies that financial management practices are significant in the OLS model. These OLS regression model coefficients show that a 0.3740 change in financial management practices is associated with a unit change increase in performance of commercial SOEs in Kenya. The results further shows that while the estimated beta coefficient is 0.3740, we have 95% confidence that the true value will always be in the confidence interval (0.267, 0.481). Based on these statistical features of the bivariate model, the reviewed model for financial management practices and performance is;

$$SOE\_Performance = - 0.0421 + 0.3740 (Fin\_Mgt\_Pract) \pm (0.107) \dots\dots Model 1$$

Table 4: OLS Regression Summary for Financial Management Practices

| OLS Regression Results |                           |                     |          |       |        |        |
|------------------------|---------------------------|---------------------|----------|-------|--------|--------|
| Dep. Variable:         | OrgPerf_Weighted_Measures | R-squared:          | 0.628    |       |        |        |
| Model:                 | OLS                       | Adj. R-squared:     | 0.616    |       |        |        |
| Method:                | Least Squares             | F-statistic:        | 50.68    |       |        |        |
| Date:                  | Mon, 25 Nov 2024          | Prob (F-statistic): | 6.44e-08 |       |        |        |
| Time:                  | 12:28:04                  | Log-Likelihood:     | 20.295   |       |        |        |
| No. Observations:      | 32                        | AIC:                | -36.59   |       |        |        |
| Df Residuals:          | 30                        | BIC:                | -33.66   |       |        |        |
| Df Model:              | 1                         |                     |          |       |        |        |
| Covariance Type:       | nonrobust                 |                     |          |       |        |        |
|                        | coef                      | std err             | t        | P> t  | [0.025 | 0.975] |
| const                  | -0.0421                   | 0.192               | -0.220   | 0.828 | -0.434 | 0.350  |
| FinMgtPract            | 0.3740                    | 0.053               | 7.119    | 0.000 | 0.267  | 0.481  |
| Omnibus:               | 0.296                     | Durbin-Watson:      | 1.731    |       |        |        |
| Prob(Omnibus):         | 0.862                     | Jarque-Bera (JB):   | 0.280    |       |        |        |
| Skew:                  | 0.196                     | Prob(JB):           | 0.869    |       |        |        |
| Kurtosis:              | 2.764                     | Cond. No.           | 32.1     |       |        |        |

This study was interested in evaluating the model’s assumptions and it’s validation. The Omnibus coefficient of 296 has an associated Prob. (omnibus) of 0.862 which is not too close to a Prob (Omnibus) of 1.00. Similarly, the results shows that the Jarque -Bera (JB) test had a coefficient of 0.280 with an associated Prob (JB) of 0.869 > p =.05. These two tests show that the OLS model residuals were normally distributed, implying a good model fit for simple linear regression between the two variables of interest. This is further reinforced by the skewness

measure of  $0.196 \approx 0$ , indicating a good indicator for a nearly normal perfect distribution of model residuals (homoscedastic). The Kurtosis measure of 2.7640 is less than a kurtosis of 3.00, indicating that the distribution of the model residuals was mesokurtic in curvature and peakiness, hence also a good model fit. The Durbin-Watson statistics of 1.731 lies within the range of 1.5-2.5, indicating that there was no first-order autocorrelation in the model residuals.

These results appear to confirm that consistent with Jensen and Meckling (1976), there is a significant relationship between a firm's management practices and its overall performance. The measures can be regarded as good indicators that management of SOE's have adopted ethical practices which can strengthen the transformation of the resources to economic outputs measures by the Balanced Score Card measures. The measures used in this study we shaped by the recommendations of International Federation of Accountants (IFAC, 2014). These measures are said to be paramount to safeguarding the sound running of commercial entities and avoidance of unexplained losses arising from employment of sub-optimal financial practices. The results of this study confirm that indeed there is a strong relationship between these measures and organizational performance. The measures of financial management practices were broken down to financial planning, financial reporting, risk management and working capital management practices. These best practices are in economic theory said to have a positive relationship with performance of a typical entity. The results of this study are supported by similar findings by Khasawneh & Staytieh (2017). Similarly, these study results support the inference by Bruggen (2013) who found that entity's financial practices have a positive relationship with performance of a firm. Herciu et al (2017) found that there is a direct link between financial management practices and financial performance of commercial organizations.

## **4.0 Conclusions and Recommendations**

### *4.1 Conclusions*

The OLS model generated F statistic of 50.68 and associated Prob (F-statistic) of  $6.44e-08$ , that is,  $\approx 0$ . Based on these two statistics, this study concluded that the null hypothesis; financial management practices do not have a statistically significant influence on performance of commercial state-owned enterprises in Kenya was rejected, and the study confirmed that indeed, there is a positive and statistically significant influence of financial management practices on organizational performance of commercial state -owned enterprises in Kenya. Further, it was found that, there is a positive and statistically significant relationship between financial management practices and SOEs performance in Kenya. The study further concluded that the measures of financial management practices used are relevant and could be adopted with variation as valid measures of best practices among SOEs in Kenya.

### *4.2 Recommendations*

Based on this study, a departure from best practices in financial management practices has a significant effect on organizational. Approval of risk management policy, risks assessments, risk appetite thresholds, risk monitoring and reporting and comprehensiveness of internal financial controls appeared to be quite elastic financial management practices. This study recommends a

focused approach to review of policy/ies driving these practices relative to all others financial management policies at entity level. There appears to be a relatively higher dispersion in opinion as to compliance to best practices in financial planning practices among the SOE's. This study recommends that these SOE's should consider a harmonization of best practices among them. The study further recommends that SOE's should pay attention utilisation of technology in management of receivables and cash management practices in the working capital management practices as they appear to lag best financial management practices.

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