INDIVIDUAL FACTORS AND VALUE FOR MONEY ACHIEVEMENT IN PUBLIC PROCUREMENT: A SURVEY OF SELECTED GOVERNMENT MINISTRIES IN DODOMA TANZANIA

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ABSTRACT

Public procurement activities consume funds that necessitate procurement personnel to ensure that the procurement function is achieving the best value for money in all aspects. This paper focused on individual factors and value for money achievement. Various central government entities were included during data collection because these entities have large procurement volume and huge number of employees who are involved in procurement activities. A binary logistic regression model was used to determine the influence of variables related to the human capital theory that included skills (p=0.003), professional qualification (p=0.012), an education level (p=0.027) and integrity (p=0.023) on value for money achievement. The results showed that these variables were positively and significantly related to the achievement of value for money in procurement hence, individual factors positively influenced value for money achievement. Personnel who are directly involved in procurement activities must possess adequate skills, the highest level of education and professional qualifications should be well considered through training and career developments and integrity should be well adhered to when executing procurement functions as they are key determinants of value for money achievement in procurement activities. Employees should be well developed in the aspect of enhancing integrity skills and improvement of their knowledge.

Key words: Procurement, Public Procurement, Value for Money, Procurement, Government Ministries and Dodoma

Paper type: Research paper
Type of Review: Peer Review

1. INTRODUCTION

Procurement is regarded as the action of acquiring goods, works and obtaining services but the meaning of the term is more important when the action is conducted by a public entity and/or intended for the interest of the public (Nzau & Njeru, 2014). The public interest is more of the concern due to the fact that, the major source of funds to finance procurement activities in the public sector is taxes collected from the
citizen. This brings the concept of value for money for procurement activities in public procuring entities (Aimable, Osunsan, Florence, Comet, & Sarah, 2019; Asare & Prempeh, 2016; Changalima, 2016). Value for money in procurement is the concept which is used to evaluate whether a firm has attained the benefit that is maximum from the products and services it obtains and/or offers, within its available resources (Mamiro, 2010; Nditi, 2014). It is well understood that, in most organisations in Africa, procurement denotes a very large amount that is spent, therefore should be effectively managed to attain the best value (Barsemoi, Mwangagi, & Asienyo, 2014). Managing procurement for the sake of achieving value for money can be ensured through goods and services bought at the right price, obtained from the right source and at the right specification that meets needs of end-users in the right specified quantity, arranged for distribution at the right time and delivered to the right internal consumer (Osipova & Eriksson, 2011). The area has received attention as pieces of literature emphasizes on the performance of procurement activities as achieving value for money in procurement (Asare & Prempeh, 2016; Changalima, 2016; Lema, 2013; Mchopa, 2015; Mchopa, Njau, Ruojie, Huka, & Panga, 2014).

In developing countries like Tanzania, procurement on behalf of the public contributes to the best utilization of public resources leading to the better attainment of development goals, for instance, reduction in the level of poverty and improved health, infrastructure, education, and other services. The Public Procurement Act (PPA) No. 7 of 2011 and its amendments of 2016 mandates public procuring entities to ensure best value for money in their undertakings (URT, 2011). Also Dimitri (2013) emphasized on the procurement activities to deliver the best value for money. Therefore, this calls for the attention of personnel who are professionals to exercise their duties in a manner that public procuring entities achieve the best outcomes in procurement activities. Studies such as Bals, Schulze, Kelly, and Stek, (2019); Ezeanyim, Uchenu, and Ezeanolue (2020); Kiage (2013); Nzau and Njeru (2014); and Olumbe (2011) explained on the role of procurement professionals and contribution of staff competencies relating to procurement performance.

Individual efforts of staff within the organisation are necessary for the performance of procurement. These individuals are the vital resources of an organisation and the PPA accentuated that procurement professionals must perform their duties in a most professional manner (URT, 2011). The vulnerability of procurement function to corruption can be reduced by using anti-corruption measures, transparency and accountability (Kohler & Dimancesco, 2020). In this regard, individual ethical behaviours such as transparency, integrity, accountability influence the procurement performance as pieces of literature show that if the individual persons in the organisation adhering with procurement principles and ethics have a notable chance of influencing the performance of procurement such as purchasing goods, works and services at the right quality, cost and from the right source (Israel, Mchopa, Mwaiseje, & Mashenene, 2019; Ndolo & Njagi, 2014; Tassabehji & Moorhouse, 2008). Integrity has received much attention as an important principle for enabling the procurement performance (Kafimbou, 2019; Rizzo, 2013). So procurement professionals need to maintain integrity as it is among procurement objectives (Thai, 2016).

Additionally, individual factors such as staff competencies through applying knowledge and skills influence the performance of the organisation (Kiage, 2013; Odero & Shitseswa, 2017; Tadesse, 2017). As observed that adequate knowledge and skills improve the productivity of the organisation (Hawkins & Muir, 2014). To increase the performance of the organisation there is a need to train employees frequently to increase capabilities in performing activities (Odero & Shitseswa, 2017). Also, the study done by Lee and Lee (2018), found that public procurement performance was enhanced by staff competencies, and the key contributors to staff competencies included training of new employees in procurement departments, enhancement of teamwork of procurement staff and employment of qualified and competent personnel in the procurement department. In this regard, for the organisation to achieve its aims and goals through
sustainable economic growth and eventually effective performance there is a need for optimizing contributions of employees (Lee & Lee, 2018; Sultana, Irum, Ahmed, & Mehmood, 2012). This study adopted a human capital theory as individuals who are employees of an organisation are considered as important human and unique factors for the betterment of an organisation. The theory was first to come to an origin from (Becker, 1962) and also, (Rosen, 1976) that emphasized on individual employees of an organisation who possess an important set of skills and/or abilities obtained and improved through education and training. These individuals are human assets for the organisation performance as they possess some essential skills and abilities that are utilized in their daily undertakings. Therefore, through this theory the study aimed at establishing the influence of individual factors that includes skills, professionalism, education, and integrity on value for money achievement in public procuring entities in Tanzania.

2. METHODOLOGY

2.1 Research Design and Study Area

A cross-sectional research design was used to undertake the study where Ministry of works, transport and communication, Ministry of finance and planning, Ministry of education science and technology and ministry of health, community, development, gender, elderly and children as the government ministries were selected. The design involved intensive analysis of the phenomenon in the selected government ministries within a specified time (Mashenene, 2020; Mchopa, Machimu, Kazungu, & Mosongo, 2020; Mwaiseje & Mwagike, 2019; Saunders, Lewis, & Thornhill, 2009). A cross-sectional research design enabled data on variables of interest to be collected simultaneously and examined to determine variables’ association and pattern of relationship (Bryman, 2008). Hence by using this design the researchers were able to collect data just once over a period of one month. All the selected ministries are in Dodoma city which covers 2576 km² with a population of around 700,000 people. There was an increase in the population of Dodoma city because of the shifting of government seat from Dar es Salaam to the new capital Dodoma. Also, the statistics show that the population of Dodoma city increases at the growth rate of 2.8 per cent. The study purposively selected the Ministries of works, transport and communication, Finance and Planning, Education Science and Technology and Health, Community, Development, Gender, Elderly and Children as study areas based on the highest number of procurement staff, and having a large volume of procurement per year.

2.2 Sampling Method and Sample Size

Due to the nature of the research and the methodologies, purposive sampling was used to obtain a required sample in order to meet the objectives of the study. The main rationale of adopting purposive sampling in this study is its usefulness in discovering and constructs historical reality and description of the phenomenon on the knowledge concerning the influence of individual factors on value for money achievement. By using purposive sampling, the procurement and supplies department, tender board and user departments were selected, to provide the relevant technical information a researcher is looking for to achieve the stated objectives. According to Saunders, et al., (2009) purposive sampling is the technique that gives adequate and relevant information regarding the study which requires a researcher to select units of interest depending on his knowledge and judgment that the included respondents possess adequate and necessary knowledge for the undertaken study. A sample of 140 respondents was purposively chosen to include only those who are knowledgeable about procurement and value for money achievement in public procurement. Respondents were selected from members of procurement departments, tender boards, and other user departments of the selected entities that were included in data collection.
2.3 Reliability test

The most common and most widely used measure of assessing internal consistency is Cronbach’s Alpha. Cronbach’s Alpha is used to quantify reliability; and it represents the proportion of the variance of the observed score that is true score variance (Multon & Coleman, 2010). To calculate the scale reliability Cronbach’s Alpha was used for each factor. Cronbach’s Alpha reliability coefficients range from 0 to 1 with greater internal reliability showing the result closer to 1 (Salkind, 2010). The size of the Cronbach’s Alpha was determined based on the number of items considered as well as the mean of the inter-item correlations. The basic rule of thumb for interpreting the size of coefficient Alpha is that a “high” reliability coefficient (usually 0.90 or above) is considered to be very good or excellent. Values between 0.80 and 0.89 are considered good whilst that between 0.70 and 0.79 is considered adequate or acceptable. Alpha between 0.60 and 0.70 is considered questionable, that between 0.50 and 0.60 is considered poor; and values less than 0.50 are considered to be unacceptable (Cronbach, 1951; Green, 2014). Table 1 shows the Cronbach’s alpha for each factor. All of the factors had an Alpha above the recommended 0.70; this confirms that the measurement instrument which was used was both valid and reliable. Moreover, Cronbach’s Alpha was used by many previous studies to measure the reliability of instruments used (David, 2019; Green, 2014; Israel & Kazungu, 2019; Mashenene, 2019).

Table 1: Cronbach Reliability Test

<table>
<thead>
<tr>
<th>Items</th>
<th>Cronbach Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skills</td>
<td>0.788</td>
</tr>
<tr>
<td>Professional qualification</td>
<td>0.822</td>
</tr>
<tr>
<td>Education</td>
<td>0.725</td>
</tr>
<tr>
<td>Integrity</td>
<td>0.704</td>
</tr>
</tbody>
</table>

2.4 Data Analysis

The binary logistic regression model (BLRM) was used to estimate the effect of individual factors dimensions (independent variables) on value for money achievement (dependent variable). Independents variables include skills, professional qualification, integrity, and education which influence the dependent variable value for money achievement. Before BLRM was performed, a 5 Likert scale point data on value for money achievement were transformed into an index scale using the mean score. Later, dummy variables of value for money achievement were created using the criteria that the scores above the mean score was treated as 1 = value for money achieved, 0 = value for money not achieved for scores below the mean. The BLRM was represented using this equation:

\[
\text{Logit} (P_i) = \log \left( \frac{p(x)}{1-p(x)} \right) = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \ldots + \beta_p x_p + \mu
\]

Where:
- Logit (Pi) = Y is a binary dependent variable (1 = achieved; 0 = otherwise)
- \(\alpha\) = intercept of the equation
- \(\beta_1\) to \(\beta_p\) = predictor variables regression coefficients
- \(x_1\) to \(x_p\) = predictor variables
- \(\mu\) = error term
3. FINDINGS AND DISCUSSION

3.1 Binary Logistic Regression Results

Table 2: Omnibus tests of model coefficients and Hosmer and Lemeshow test

<table>
<thead>
<tr>
<th></th>
<th>Chi-square</th>
<th>Df</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step</td>
<td>22.223</td>
<td>4</td>
<td>.000</td>
</tr>
<tr>
<td>Block</td>
<td>22.223</td>
<td>4</td>
<td>.000</td>
</tr>
<tr>
<td>Model</td>
<td>22.223</td>
<td>4</td>
<td>.000</td>
</tr>
</tbody>
</table>

Hosmer and Lemeshow test

<table>
<thead>
<tr>
<th></th>
<th>Chi-square</th>
<th>Df</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6.413</td>
<td>4</td>
<td>.601</td>
</tr>
</tbody>
</table>

The goodness fit of the model was shown by looking at the Omnibus test of model coefficients as indicated in table 2 which show all predictors in the model explain a significant amount of the original variability with X²(4) of 22.223 and significant at p-value less than 5 per cent (p<0.05), which implies that the model fitted the data well. Another measure which is used to test the goodness fit of the model was Hosmer and Lemeshow test. In table 3 all predictors in the model produced X²(8) of 6.413 which was not significant because the p-value is greater than 5 per cent (p=0.601) which implies that, there is a good fit of the data into the model. Pallant (2011) indicated that for Hosmer and Lemeshow test, a significance value of less than 0.05 shows the poor fit of the data in the model. Moreover, the usefulness of the model was shown by looking at Nagelkerke R² and Cox and Snell R square. In this study, the Cox and Snell R square values are 0.147 and Nagelkerke R² 0.214 implying that the independent variable in the model explained 14.7 per cent and 21.4 per cent variance independent variable (value for money achievement). So that the amount of Cox and Snell R square and Nagelkerke R² (Pseudo R²) shows the amount of variation explained in the model.

3.2 Influence of Individual Factors on Value for Money Achievement

The general focus of the study was to determine the influence of individual factors on the achievement of value for money.

Table 3: Individual Factors and Value for Money Achievement

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>S.E</th>
<th>Wald</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skills</td>
<td>.905</td>
<td>.307</td>
<td>8.706</td>
<td>.003</td>
</tr>
<tr>
<td>Professional qualification</td>
<td>.663</td>
<td>.264</td>
<td>6.290</td>
<td>.012</td>
</tr>
<tr>
<td>Education</td>
<td>.475</td>
<td>.215</td>
<td>4.898</td>
<td>.027</td>
</tr>
<tr>
<td>Integrity</td>
<td>.560</td>
<td>.247</td>
<td>5.133</td>
<td>.023</td>
</tr>
</tbody>
</table>

Table 3 presents the results of the binary logistic regression analysis model between value for money achievement as a dependent variable with the independent variables; skills, professionalism, age, gender, education, and integrity. The presented results focus on meeting the overall relationship between the predetermined variables and the dependent variable. The individual factors as independent variables were regressed on the achievement of value for money as a dependent variable (the results of which are presented in Table 3).

The findings indicated that a set of skills as an individual factor is significant and positively related to the value for money achievement as observed in a p-value which is less than 5 per cent (p=0.003). The beta
coefficient value was 0.905 which implies that that the single unit of change or improvement in an individual’s skills leading to increase in value for money for 90.5 per cent. This is possible due to the fact that respondents from the surveyed public procuring entities possess adequate skills that were obtained through experience and training. These findings are supported by Changalima and Ismail (2019) and Hawkins and Muir (2014) who found that skills and knowledge contribute much towards increasing the performance of the organisation. Therefore, the effectiveness of procurement activities requires the necessary skills to ensure the good performance of an organisation (Mesa, Kwasira, & Waweru, 2017) and value for money in the procurement activities (Changalima, 2016).

Findings in table 3 show that professional qualification as an individual factor determines the achievement of value for money in public procurement. The beta coefficient of professional qualification was positively (0.663) related to value for money achievement and significant because the p-value was observed to be less than 5 per cent (p <0.05). It also indicates that the unit increase of professional qualification results into the 66.3 per cent increase of value for money achievement. This implies that staff who have professional qualifications such as Certified Procurement and Supplies Professional (CPSP), play a great role in achieving value for money in an organisation. This supported the study by Madziva (2019) who found that compliance of public procurement act towards achieving the performance of public procurement is highly influenced by professional qualification. The study further revealed that increase in the number of procurement staff who are professional increases the performance of the organisation through better compliance with the public procurement act.

Furthermore, coefficient of integrity was positive (0.560) and this individual factor related to value for money achievement as the relationship is statistically significant because the p-value is less than 5 per cent (p=0.023), suggesting that a single unit increases of personal integrity results into an increase of 56 per cent of value for money achievement. The findings are consistent with the study done by Israel et al., (2019) which indicates that ethical procurement practices are essential tools for enhancing organisational performance. Integrity is among the ethical practices which if implemented adequately increase the achievement of value for money. As procurement activities are vulnerable to unethical conducts such as corruption and favouritism, professional are urged to adhere to procurement ethics and principles such as integrity. This is because maintaining the highest level of integrity is one among the procurement objectives (Thai, 2016).

Lastly, there is a positive significant relationship between education level and value for money achievement since the p-value is less than 5 per cent (p=0.027) and the coefficient beta was 0.475. This implies that the unit increase in education level increased 47.5 per cent of value for money achievement. Education has been commended for its contribution to shaping professional behaviour and capabilities among employees. The study was consistent with the study done by Israel, et al (2019) who found that there is a relationship between academic education and performance of the public procuring entity. As the performance of procurement function in relation to cost reductions and quality improvement at a minimum economical cost enhance value for money.

4. CONCLUSIONS AND RECOMMENDATIONS

This paper focused on determining the influence of individual factors on the achievement of value for money. The study was based on the assumptions of the human capital theory that individuals are vital resources of an organisation that possess the necessary skills and abilities for organisational activities. The findings revealed that skills possessed by individual persons, professional qualifications, education levels and integrity as a procurement principle are the determinants of value for money achievement. So, the study concluded that individual persons who are the employees of an organisation have to consider
individual factors including skills, professional education, education and integrity in order to achieve value for money in public procurement activities. Nevertheless, public procuring entities are recommended to develop staff training and career development policies that enable employees to enhance their education levels and professional qualification. Also, employees are recommended to improve their knowledge and ensure adherence to procurement principles including integrity by ensuring that they are surrounded with honest people, they act honestly and meet their stated commitments.

REFERENCES


