Analysis of the Relationship between Managerial Competences and the Performance of Procurement Management Units in Public Sector: The Structural Equation Modelling Approach

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Abstract:
Despite the importance of procurement management units in public procuring entities in Tanzania in terms of procurement functions conducted, the performance of this function is still poor and ineffective. This study focused on the analysis of the relationship of managerial competences in terms of managerial skills on the performance of procurement management unit in public procuring entities located in Dar es salaam and Dodoma regions. The structural equation model was used to explain the existing relationship between managerial competences (technical skills, communication skills, leadership skills, business skills and networking skills) on the performance of procurement management unit (cost reduction, timely delivery and compliance of procurement rules and regulations). Results revealed that networking skills and leadership skills are significantly related to cost reduction, timely delivery and compliance of rules and regulations. Therefore, these are the key determinants of the performance of procurement management unit in public sectors. However, technical skills, business skills and communications skills are also significant related to cost reduction in public procuring entities whereby, communication skills are significantly related to timely delivery as the indicator of procurement performance in public procuring entities. Finally it was recommended that procurement and supplies managers should be well equipped with these managerial skills so as to improve the performance of procurement management units in terms of the conducted procurement functions in their respective public procuring entities in Tanzania.

Keywords: Managerial competences, managerial skills, the performance of procurement management unit, procurement function

1. Introduction
The procurement management unit (PMU) is of great importance to both organizations in public and private sector (Chepleting and Makokha, 2017). This is because contribution of PMU in any organization relies on the functions that this unit performs for the sake of the procuring entity. The unit is responsible for the co-ordination of procurement (acquisition of supplies) and disposal activities for PE operations (URT, 2011). Also, the unit provides a direct link between the (internal) users and the (external) suppliers (Monczka, et al., 2009).

Performance of this unit in public sector is of great concern due to the role of public procurement in social and economic development of the country (Makoye and Juma, 2013). Therefore, procurement activities done in any procuring entity (public or private sector) need to be well controlled because the whole organizational performance is focused on this function (Wanyoyi and Muturi, 2015). Apart from that, about 75% of the Government budget is spent in this activity, so the performance of this unit attracts more attention from stakeholders who are tax payers (Nditi, 2014).

A report provided by the Controller and Auditor General (CAG) of Tanzania (2016/2017) revealed that almost eleven (11) entities were audited, procured goods, works and services without having any legal contract with the selected suppliers and/or contractors. Problems associated with procurement activities such as delays in completion of contract works, poor documentation of contracts and poor selection of procurement methods and procurement done without approval of tender board approval have been the major concerns (Matambula and Makayi, 2014, CAG, 2016/2017).

Delays in projects have been associated with the selection of tenderers with technical incompetence (Stephen, 2018). The performance of procurement function is affected with poor identification of requirements, unrealistic budgets and inadequate skills of procurement personnel (Mamiro, 2010). The Public Procurement Regulatory Authority (PPRA) has been directed to monitor the performance of all procurement activities in Tanzanian public entities (URT, 2011). The Government has formulated the first draft of national public procurement policy as one among the efforts to enhance public procurement performance (URT, 2012). Other efforts have been emphasized on public procurement (both
regulatory and institutional) reforms so as to control the situations (Mwemezi, 2013; Maliganya, 2015), however, the performance is still poor and inefficient (Mkalimoto, 2011; Matambula and Makayi, 2014).

Studies done have confirmed that there are some variables which have not been included in measuring the performance of procurement management unit. Variables such as managerial competences which have been documented to be important in studying the performance in organization are very crucial to be studied. Managerial competency provides important features such as technical, communication, business, networking and leadership skills which generally help improve the performance of an organization. According to Mrope (2018), competent procurement personnel are familiar with rules and regulations of procurement procedures within the procuring entities.

Procurement officials who are regarded as professionals must be skilled in terms of theoretical knowledge, training and education and possessing competences based on tests and examinations complying with professional code of ethics (Lysons and Farrington, 2012). As professionals being required to possess managerial and technical skills; the same applies to procurement professionals located in local or central government, developed or developing countries and public or private entities (Basheka, 2010). Various researchers seem to concur that organizational performance is successfully enhanced when the managers possess a certain set of competencies (Mohn-Shamsudin and Chuttipattana, 2012).

In today's business environment, managerial competencies play an important role in different types of organizations (Krajcovicova, et al., 2012; Veliu and Maxnhari, 2017). Management concept is important as long as human and physical resources are used to achieve organizational objectives. Managerial competencies enable managers to perform efficiently and effectively at different levels of management (Veliu and Maxnhari, 2017). Procurement personnel with high levels of tactical and operational skills are potential in conducting procurement tasks (Wanyonyi and Muturi, 2015).

Tanzanian public procurement law requires the PMU to be equipped with qualified personnel and other technical staff (URT, 2011). The report by CAG (2016/2017) and that of PPRA (2014/2015) informed that some procuring entities are characterized with poor performance due to low level of compliance with public procurement law and regulations of the United Republic of Tanzania. Also, Ambe and Badenhorst-Weiss (2012) opined on the low level of compliance with procurement law and regulations in public procuring entities. In public procurement, non-compliance with public procurement regulations is regarded as the unethical behavior of the procurement personnel (Eyaa and Oluka, 2011). Therefore, this study intended to analyze the implication of managerial competences on the performance of procurement management unit.

2. Theoretical Review

The theoretical part of this paper focused on the available theory and model that are related to the issue of managerial competences and performance of procurement function in public sector.

2.1. The Human Capital Theory

Managerial competence involves the ability of a manager to manage resources. Literatures have pointed that management need various competences. This is related with human capital as postulated in the theory of human capital that skills and knowledge are key elements for proper management of a working place (Becker (1964). The human capital theory relies on the inclusion of the learning capabilities of individual persons as one among valued resources that are involved in the operations of the organization (Lucas 1990).

Procurement and supplies managers should ensure that their respective procurement management units are well performing in terms of the conducted procurement activities. Since, managers play an important role in making sure that this function is performing well; managers as human capital resources are made with knowledge and skills (Marginson, 1989) and these abilities and skills form the knowledge capital of the organization (Mahoney and Kor, 2015). Therefore, if the managers are well equipped with managerial competences, a different outcome is expected to be achieved in terms of performance and growth of the organization. Among the important outcomes is the performance of procurement management unit, because managerial competency offers technical, communication, business, networking and leadership skills which are related to the performance of procurement management unit in terms of timely delivery, cost reduction and compliance with procurement law and regulations.

2.2. Compliance – Performance Reform Cycle Model

This model is useful in measuring the performance of procurement function (Mrope, 2018). It was first developed by Thai (2009) to describe the performance and process measurement of public procurement function. In this aspect, performance can rely on outcomes on the other hand compliance can measure the public procurement process. Therefore, outcomes which are cost reduction in the procurement activities; and timely delivery of needed products have to be considered apart from compliance with rules and regulations when there is a need to assess the performance of procurement management unit. Therefore, the model was useful in ensuring that the main indicators of measuring the performance of procurement management unit are considered whereby a dependent variable is measured in terms of cost reduction, timely delivery and compliance with procurement rules and regulations.
2.3. The Conceptual Framework

The conceptual framework on figure 1 depicts that there is a relationship between independent variables and dependent variable. Independent variables include technical skills, business skills, communication skills, networking skills and leadership skills that present the managerial competences and the dependent variable which is the performance of procurement management unit measured in terms of cost reduction, compliance with procurement laws and regulations and timely delivery. The variables were formulated from the available theories and model on procurement management.

3. Methodology

3.1. Area of the Study

This study intended to assess the influence of managerial competence on the performance of procurement function in public sector in Tanzania. The study was conducted in public procuring entities located in Dodoma and Dar es salaam regions. These regions were selected deliberately as most of public procuring entities are allocated in these regions. The CAG reports revealed that most of public procuring entities still depict some weaknesses in procurement function (CAG, 2014-2015; CAG, 2016-2017).

3.2. The Population of the Study

The study included all procurement and supplies managers allocated in most of public procuring entities in Dodoma and Dar es salaam regions. These procurement professionals were purposely selected as the study focused on assessing their managerial competences in terms of their skills to ensure performance of procurement function in the public sector.

3.3. Data Collection Instrument and Measurement

Data were collected through survey tools which were close ended questionnaires. These questionnaires were self-administered to deliberately selected procurement and supplies managers. The tools focused on the dependent and independent variables indicating relationship between managerial competences (communication, technical, business, networking and leadership skills) and the performance of procurement management unit (Cost reduction, timely delivery and compliance of procurement laws and regulations).

3.4. Sampling Techniques

In this study, deliberate sampling was adopted to select key respondents who were involved in data collection activity. The technique involved picking well informed respondents who were capable to give the needed information concerning the topic on hand. These are procurement and supplies professionals who are directly involved in managing procurement functions within their respective public procuring entities. In this aspect, a sample of 104 procurement and supplies managers was reasonable for data analysis.

3.5. Data Analysis

The collected data were analyzed by using SPSS Version 23 and the Structural Equation Modelling (SEM) was used to determine the existing relationship between managerial competences and the performance of the procurement management unit. SEM was used because as a correlational technique, it enables the researcher to analyze multiple variables simultaneously (Beran and Violato, 2010). Therefore, SEM was used to analyze the relationship between
managerial competences (communication, technical, business, networking and leadership skills) and the performance of procurement management unit (Cost reduction, timely delivery and compliance of procurement rules and regulations).

4. Results and Discussion
This study involved two major steps to analyze the collected data. The first step was to conduct the model fit indices before continuing to further procedures of analyzing data. This step was crucial to check whether the collected data explain the existing relationships between variables.

4.1. Model Fit Indices
Table 1 below shows the model fit indices.

<table>
<thead>
<tr>
<th>Model</th>
<th>GFI</th>
<th>AGFI</th>
<th>CFI</th>
<th>IFI</th>
<th>RMSEA</th>
<th>$X^2$/df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default model</td>
<td>.906</td>
<td>.947</td>
<td>.912</td>
<td>.901</td>
<td>0.048</td>
<td>2.309</td>
</tr>
<tr>
<td>Saturated model</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent model</td>
<td>.407</td>
<td>.682</td>
<td>0.000</td>
<td>1.000</td>
<td>0.302</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Model Fit Indices
Accepted values are GFI, AGFI, CFI, IFI approach 1, 0 ≤ RMSEA ≤ 0.05, $X^2$/df < 3 (Dion, 2008; Hooper Et Al., 2008)

After the analysis, the model fit indices were; the chi-square = 140.882 and df = 61, the presented values are GFI = 0.906, AGFI = 0.947, CFI = 0.912, IFI = 0.901, RMSEA = 0.048 and CMIN/DF = 2.361 as Dion (2008) and Hooper et al., (2008) commented that the Accepted values of GFI, AGFI, CFI, IFI should approach 1, 0 ≤ RMSEA ≤ 0.05 and $X^2$/df < 3. In this aspect, the index values presented on the model fit meets minimum standards for the model to be accepted as a good model.

4.2. The Relationship between Managerial Competences and the Performance of Procurement Management Unit
Since the model fit indices showed that the collected data fit well, further analysis was conducted so as to analyze the existing relationship between independent variables and dependent variables. Results are presented on the figure 1 that depicts the structural model and table 2 that presents the regression weights showing the relationship of technical skills, business skills, communication skills, networking skills and leadership skills on the variables of performance of procurement management unit as a procurement function.

4.2.1. The Structural Model
The structural model presented on figure 2 shows a clear relationship between managerial competences and the performance of procurement management unit. The importance and magnitude of each relationships are presented on the regression weights on table 2.
4.2.2. Regression Weights

<table>
<thead>
<tr>
<th>Variables</th>
<th>Estimate (β)</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost Reduction --------</td>
<td>-.570</td>
<td>.046</td>
<td>12.419</td>
<td>***</td>
</tr>
<tr>
<td>Compliance</td>
<td>-.168</td>
<td>.211</td>
<td>-.795</td>
<td>.427</td>
</tr>
<tr>
<td>Timely Delivery</td>
<td>-.002</td>
<td>.073</td>
<td>-.026</td>
<td>.980</td>
</tr>
<tr>
<td>Cost Reduction --------</td>
<td>-.269</td>
<td>.090</td>
<td>-.2994</td>
<td>.003</td>
</tr>
<tr>
<td>Compliance</td>
<td>-.322</td>
<td>.412</td>
<td>-.780</td>
<td>.435</td>
</tr>
<tr>
<td>Timely Delivery</td>
<td>-.094</td>
<td>.142</td>
<td>-.659</td>
<td>.510</td>
</tr>
<tr>
<td>Cost Reduction --------</td>
<td>-.596</td>
<td>.065</td>
<td>-9.151</td>
<td>***</td>
</tr>
<tr>
<td>Compliance</td>
<td>.213</td>
<td>.299</td>
<td>.712</td>
<td>.477</td>
</tr>
<tr>
<td>Timely Delivery</td>
<td>-.562</td>
<td>.103</td>
<td>-5.464</td>
<td>***</td>
</tr>
<tr>
<td>Cost Reduction --------</td>
<td>.869</td>
<td>.047</td>
<td>18.560</td>
<td>***</td>
</tr>
<tr>
<td>Compliance</td>
<td>-1.020</td>
<td>.215</td>
<td>-4.741</td>
<td>***</td>
</tr>
<tr>
<td>Timely Delivery</td>
<td>.494</td>
<td>.074</td>
<td>6.682</td>
<td>***</td>
</tr>
<tr>
<td>Cost Reduction --------</td>
<td>.236</td>
<td>.050</td>
<td>4.693</td>
<td>***</td>
</tr>
<tr>
<td>Compliance</td>
<td>-.458</td>
<td>.231</td>
<td>-1.981</td>
<td>.048</td>
</tr>
<tr>
<td>Timely Delivery</td>
<td>.289</td>
<td>.080</td>
<td>3.634</td>
<td>***</td>
</tr>
</tbody>
</table>

Table 2: Regression Weights of the Relationship between Managerial Competences and the Performance of Procurement Management Unit

Table 2 indicates that technical skills have a significant relationship with procurement performance on cost reduction with P value of 0.001 and a positive direction (correlation) of 0.570. This indicates that, when technical skills are improved through training and working experience procurement costs will be reduced by 57%. This result indicates that practitioners with technical skills when undertaking procurement activities reduce procurement costs by 57%. Basheka (2010) opined that technical skills related to procurement enhance practitioners to conduct cost analysis and other technical aspects of procurement activities effectively. However, other indicators like communication with procurement and timely delivery are found to have insignificant relations and negative correlated to technical skills. This shows that technical skill is not a determinant of compliance and timely delivery. However, during data collection it was revealed that technical skills enable managers to perform technical aspects of procurement activities that might affect time taken by suppliers to deliver goods and compliance with procurement laws and regulations. Also, Ssimbwa (2015) found out that technical skills and procurement performance were positive significant related. In this aspect, technical skills are very important in ensuring that procurement performance is effectively achieved.

Also, the results reveal that business skills have a significant relationship with cost reduction with the p value of 0.003 and negative direction (correlation) of -0.269. This reveals that any unit improvement in business skills will result into 26.9% increase in costs. Moreover, other indicators that is, compliance and timely delivery were found to have no significant relationship with business skills as P values were 0.435 and 0.510 respectively which are greater than the required statistical value of P less than 0.005. This result indicates that business skill is not a determinant of compliance and timely delivery for explaining procurement performance. However, Basheka (2010) identified business skills such as marketing analysis skills and skills for negotiations with partners. Therefore these skills are very crucial in determining the performance of procurement function.

Communication skills and cost reduction are significantly related at the p-value of 0.001 and correlated negatively with the β = -0.596 indicates that any further additional in communication skills will result into an increase in procurement costs by 59.6%. Theoretically, it was considered that communication skills play an important role when conducting negotiations (de Oliveira Carvalho and Sobral, 2003). Respondents claimed that practitioners with good communication skills both written and oral help a procuring entity when negotiation with key suppliers during procurement process so as to reduce procurement costs. On the other hand, compliance was found to relate insignificantly with communication skills as the p value is greater than 0.05 shows that the variable is not influenced by communication skills. However, communication skills and timely delivery were found to be significantly related with the p value of 0.001 but negative correlated with β = -0.562. This result indicates that any additional in communication skills will result into reduction in timely delivery by 56.2%. Theoretically, it was believed that those with enough communication skills can enable procuring entities to get their needed goods on time but surprisingly, the results reported differently. Moreover, it was reported during data collection activity that most items are not delivered on time due to faults on the supplier's side rather than the buying organization. But, Affare (2012) opined that poor communication may result into delays. In this matter, managers must be equipped with communications skills that are applied in various projects (Gewanal and Bekker, 2015).

The tested relationship between networking skills and cost reduction was found to be significant (P = 0.001) but positive correlated with β = 0.869 indicating that any addition to networking skills will result into cost reduction by 86.9%. In this aspect, networking skills are important for any procurement practitioner focusing on reducing procurement costs. Respondents during data collection commented that these kinds of skills enable managers to develop and build relationships with their coworkers and suppliers which enhances cost reduction. Therefore, networking skill is an important determinant of cost reduction. In this aspect public procurement managers must among others have networking skills (Basheka 2010). Networking skills are significant related to compliance but in negative direction with β
The result suggests that procurement practitioners with networking skills are able to improve time for delivery of procured goods. Therefore, networking skill is a determinant of cost reduction, compliance and timely delivery. The issue of networking is important as (de Klerk, 2010) reported that managers must succeed in implementing networking practices through enhancing networking value and the ability of the management to network. The study done by McKevitt et al., (2012) found out that respondents claimed that their networking skills needed to be improved so as to enable them to engage with external stakeholders in a better way.

Furthermore, leadership skills and cost reduction are significantly related at the p-value of 0.001 with \( \beta = 0.236 \). This result indicates that any additional in leadership skills will result into reduction in procurement costs by 23.6%. Also, there is a significant relationship between leadership skills and compliance with the p-value of 0.048 \( \beta = -0.458 \) which indicates that an increase in leadership skill by one unit will result into reduction in the level of compliance by 45.8%. Likewise, the tested relationship between leadership skills and timely delivery was significant at the p-value of 0.001 and positive correlated \( (\beta = 0.289) \). This result indicates that an increase in leadership skills will result into an increase in timely delivery by 28.9%.

These skills enable procurement practitioners and their managers to ensure that the needed items are delivered on time. Among factors determined by Ringwald and Ndercaj (2014), leadership skills affected public procurement in most of Sub-Saharan Africa. Therefore, leadership skill is a key determinant of cost reduction, compliance and timely delivery in ensuring procurement function in public sector. Procurement practitioners who are sensitive to costs depend on their skills to make sure that procured requirements are determined at the right time and at the right price (Ambe and Badenhorst-Weiss, 2012).

5. Conclusion and Recommendation

This study focused on analyzing the relationship of managerial competences on the performance of procurement management unit in public sector in Tanzania. Results presented and discussed in this paper after being analyzed through structural equation modeling revealed that networking skills and leadership skills are the major determinants of performance of procurement management units in terms of procurement functions in public sector in Tanzania. These skills are significantly related to procurement cost reduction, compliance and timely delivery of goods. On the other hand, technical skills and business skills are both significant related to cost reduction. However, communication skills and procurement performance are significantly related in terms of cost reduction and timely delivery of procured items. Therefore, the study recommends that procurement and supplies managers have to be well equipped with managerial competences in form of managerial skills so as to make sure that the performance of procurement functions in the public sector is improved by enhancing the performance of their respective procurement management units.

6. References

i. Affare, M.A.W (2012). An Assessment of Project Communication Management on Construction Projects in Ghana. Commonwealth Executive Master of Business Administration. The Institute of Distance Learning, Kwame Nkrumah University of Science and Technology, Ghana


