The Risk Management Practices and Organisational Performance in Public Institutions: A Case of DUWASA and TANESCO in Dodoma

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Abstract

This paper assesses the risk management practices and organizational performance of public institutions. Specifically, the paper assessed, the types of risks faced by public institutions, the strategies used in managing them and the role of risk management practices in improving organizational performance. Probability and non-probability sampling techniques were employed to select employees from TANESCO and DUWASA. Both descriptive (multiple responses) and inferential statistics (ordinal regression) were used for data analysis. The findings revealed that public institutions face procurement risks, financial risks, and unethical risks. Risk reduction, risk transfer, and risk acceptance were the preferred strategies to manage risks within organizations. The “Spearman's Rank Correlation” results show that there is a significant and positive correlation between risk treatment (r= 0.735, p= 0.05), risk identification (r=0.528, p=0.01), and organizational performance in TANESCO while there is a significant and positive correlation between risk treatment (r=0.683, p=0.01), risk identification (r=0.461, p=0.05), risk analysis (r=0.450, p= 0.05) and organization performance in DUWASA. Ordinal regression results show that risk management processes (establishing scope, context and criteria = 2.678, risk identification =2.766, and risk treatment= 3.930) were a significant and positive predictor of organizational performance in TANESCO at the one percent level, while risk identification (1.619) and risk treatment (2.158) were significant and positive predictors of organizational performance in DUWASA at the one and five percent levels respectively. Therefore, public institutions should integrate risk management processes with other core functions of the organization if organizational objectives are to be achieved.

Keywords: Risk, Risk management practices, Public institutions, Organisational performance
1.0. Introduction

Risk can be defined as the effect of uncertainty on objectives. An effect is a deviation from what was expected. It can be positive, negative, or both, and can address, create or result in opportunities and threats (Project Management Institute, 2009). Risk Management is a set of coordinated activities to direct and control an organization’s risk (Bartlett, 2004). ISO 31000:2018 has identified steps on which the risk management process should be based which are establishing Scope, Context, and Criteria (SCC), risk assessment (risk identification, risk analysis, and risk evaluation), risk treatment, recording and reporting, monitoring and review, and communication and consultation as cited by Nketekete et al. (2016) and Ibrahim et al. (2019). Different studies acknowledge that risk management helps an organization to improve its performance both in financial and non-financial aspects as it can reduce unexpected and costly surprises, ensure effective allocation of resources, improve communication, and provide senior management with a concise summary of threats an organization is likely to face, thus ultimately helping in better decision making, Carvalho and Junior, (2015), Likhitruangsilp et al. (2017), Smit (2012), Durst et al. (2019), Zou (2015), Singh and Hong, (2020), Kpodo et al. (2015), Aritua et al. (2011), Shibani et al. (2022), Ibrahim et al. (2019), Alawattegama (2018), Okonjo et al. (2016), Tang et al. (2007), Ayudhya and Kunishima, (2019), Nasret al. (2019) and Cooper (2010).

In Tanzania, risk management practices have been challenged by various factors such as lack of awareness of risk management processes, lack of experience, lack of information in contract management, lack of stakeholder involvement in risk management, inadequate monitoring and control of risks within the organization and cost implementations and time constraints (Kikwasi, 2012). Furthermore, Chileshe and Kikwasi (2014) urged that teamwork, communication, awareness of the risk management process as well as management style were the key critical success factors for implementing risk assessment and risk management in construction projects in Tanzania. But also, Masenene (2015) found that operational risk management among Tanzania financial institutions was not well implemented and revealed various reasons such as a lack of a strong risk management department and weak rules and principles that affect the operational performance of the organization.

Despite the challenges in risk management practices and by recognizing the importance of risk management practices, the Tanzania government introduced the National Guideline on Risk Management (2012) and the Public Sector Risk Management Framework (PSRMF) by National Treasury Circular No. 12 of 2012/13 which provide a general guide for the implementation of risk management strategies in the public service and suggest that risk management is a formal step-by-step process that can be applied at all levels of a department. Furthermore, the government through the Ministry of Finance introduced the use of the Tanzania National Electronic Procurement System (TANEPS) in executing procurement functions for all public procuring entities as the means of
reducing risks such as corruption, delays, quality defects and cost overruns hence improved services to its public as a result of achieved value for money (Alphonce, 2020).

Therefore, the interest of this study comes from the fact that there is a need to understand the risk management practices and organizational performance in public institutions in Tanzania as most studies were conducted in developed countries and what might be considered by an organization to be a risk and therefore manageable in a developing country could be different from an organization operating in a developed country, where the industry is structured differently or has a different legal framework. Specifically, the paper assessed, the types of risks faced by public institutions, the strategies used in managing risks by public institutions and the role of risk management practices in improving organizational performance.

2.0. Methodology
This study was conducted in Dodoma City at two selected public institutions, namely; Tanzania Electric Supply Company Limited (TANESCO) and Dodoma Urban Water Supply and Sanitation Authority (DUWASA). These institutions were purposively selected because they are among public institutions that strive to improve organization performance in terms of quality service delivery, compliance with government regulations, improved decision-making, stakeholder confidence, robust planning, and resource utilization, by instituting risk management best practices to realize value for money (URT, 2011). A probability sampling procedure, simple random sampling was used to obtain information from those individuals who deal with risk management whereby each individual within the selected departments and sections was given an equal chance to be selected. (Saunders et al., 2009).

A cross-sectional research design was employed where data were collected from a representative sample at a single point in time (Majid, 2018). This study targeted population comprises employees from TANESCO and DUWASA. A sample size of 60 respondents of which 35 were from TANESCO and 25 from DUWASA was used from a total population of 116 employees of which 68 were from TANESCO and 48 were from DUWASA (Table 1). The sample was representative because for a statistical analysis study, a sample size of 30% and above is suggested since it results in a sampling distribution that is close to a normal distribution (Mugenda and Mugenda, 2008).
Both structured and unstructured questionnaires were used to collect primary data while a checklist was used to collect secondary data from published and unpublished documents related to the study. The study measured qualitative variables using a five-point Likert-type scale starting from (1) = strongly disagree to (5) = strongly agree. The mean score was established for each variable used in the study. The study has two variables, risk management practices as the independent variable and organizational performance as the dependent variable (Table 2).

### Table 1. Sample size distribution

<table>
<thead>
<tr>
<th>Section</th>
<th>TANESCO</th>
<th>DUWASA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Targeted Population</td>
<td>Sample size</td>
</tr>
<tr>
<td>Planning Department</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Finance department</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Procurement unit</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>Audit section</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Engineering department</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>ICT Unit</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Human resource and admin</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>68</strong></td>
<td><strong>35</strong></td>
</tr>
</tbody>
</table>

Data analysis was done using descriptive analysis where frequency and percentage were generated. The relationship between risk management practices and organizational performance was examined using Spearman’s Rank Correlation. The correlation coefficient value ($r$) range of 0.10 to 0.299 is considered weak, 0.30 to 0.49 is considered moderate and 0.50 to
1.0 is considered strong (Wong and Hiew, 2005). However, the correlation coefficient should not go beyond 0.8 to avoid multi-collinearity (Kakiya et al., 2019). Inferential statistics (the ordinal regression model) was employed to determine the impact of risk management practices on organizational performance because the data set of the variables was not normally distributed (Wong and Hiew, 2005). The model used is shown in Equation 1.

\[ OP = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \varepsilon_i \]  

(1)

Where,  
\( OP = \) Organisational performance,  
\( \beta_0 = \) Constant,  
\( \beta_1 - \beta_8 = \) estimated parameters of the explanatory variables  
\( X_1 - X_8 = \) explanatory variables  
\( \varepsilon_i = \) disturbance term  
\( X_1 = \) Communication and consultation,  
\( X_2 = \) Scope, context and criteria,  
\( X_3 = \) Risk identification  
\( X_4 = \) Risk analysis,  
\( X_5 = \) Risk evaluation,  
\( X_6 = \) Risk treatment,  
\( X_7 = \) Risk reporting,  
\( X_8 = \) Monitoring and review.

3. Research findings

3.1. Demographic Descriptive Statistics

The findings in Table 3 reveal that 71% and 68% of the employees were male from TANESCO and DUWASA, respectively, while female respondents were 28.6% for TANESCO and 32.0% for DUWASA. This implies that in public institutions there is no gender difference in performing tasks rather than qualifications, which these findings conform to (Kazare, 2019).

The findings in Table 3 further revealed that 77.2% of TANESCO and 80% of DUWASA of the respondents aged from 26 years to 60 years. This is the age of the workforce and can contribute relevant skills, knowledge, and understanding concerning risk management in their organizations which in turn increases the performance of risk management. These findings conform to the findings of Chaponde (2020), who argued that most workers in public institutions aged above 26 years.

The results in Table 3 indicated that the majority of the respondents had a Bachelor’s degree level 57.1% for TANESCO and 60.5% for DUWASA, followed by Diploma Level 25.7 for TANESCO and 12.0% for DUWASA. This implies that public institutions constitute different levels of education. The results resemble those of Kazare (2019) who argued that practitioners in public institutions constitute people with different levels of education and sometimes most of them have a limited level of education, especially at lower levels (wards and village level).

The findings in Table 3 show that most of the respondents in both institutions have working experience between 6-15 years, 65.7% for TANESCO and 64% for DUWASA. This implies that most of the respondents have enough experience so the information regarding the role of risk management practices in improving organizational performance was provided by experienced individuals.
Table 3. Demographic characteristics of respondents

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Category</th>
<th>TANESCO</th>
<th></th>
<th>DUWASA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>25</td>
<td>71.4</td>
<td>17</td>
<td>68.0</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>10</td>
<td>26.6</td>
<td>8</td>
<td>32.0</td>
</tr>
<tr>
<td>Age</td>
<td>18-25</td>
<td>8</td>
<td>22.8</td>
<td>5</td>
<td>20.0</td>
</tr>
<tr>
<td></td>
<td>26-35</td>
<td>12</td>
<td>34.3</td>
<td>8</td>
<td>32.0</td>
</tr>
<tr>
<td></td>
<td>36-60</td>
<td>15</td>
<td>42.9</td>
<td>12</td>
<td>48.0</td>
</tr>
<tr>
<td>Education level</td>
<td>Diploma</td>
<td>9</td>
<td>25.7</td>
<td>3</td>
<td>12.0</td>
</tr>
<tr>
<td></td>
<td>Degree</td>
<td>20</td>
<td>57.1</td>
<td>15</td>
<td>60.5</td>
</tr>
<tr>
<td></td>
<td>Master’s/PhD</td>
<td>6</td>
<td>17.2</td>
<td>7</td>
<td>28.0</td>
</tr>
<tr>
<td>Working experience</td>
<td>Less than 1 year</td>
<td>9</td>
<td>25.7</td>
<td>5</td>
<td>20.0</td>
</tr>
<tr>
<td></td>
<td>1-5 years</td>
<td>23</td>
<td>65.7</td>
<td>16</td>
<td>64.0</td>
</tr>
<tr>
<td></td>
<td>Above 15 years</td>
<td>3</td>
<td>8.6</td>
<td>4</td>
<td>16.0</td>
</tr>
</tbody>
</table>

3.2. Types of Risks Commonly Faced by TANESCO and DUWASA

3.2.1. Procurement risks
The results in Table 4 revealed that both TANESCO and DUWASA face procurement risk as lack of transparency in the bidding 97.1% and 100% was the most significant procurement risk factor for TANESCO and DUWASA respectively. Similar results were obtained by Likhitruangsilp et al. (2017) who argued that lack of transparency in the bidding was the most critical risk factor pointed out by both the public and private sectors in Vietnam which resulted in the selection of contractors with low capacity to deliver the expected results and led to organisation’s failure to meet their objectives.

3.2.2. Financial/ Economic Risks
The results in Table 4 revealed that both TANESCO and DUWASA face financial risk as the problem of liquidity 94.3% in TANESCO and the problem of payment delays by the organization to the subcontractors 96.0% in DUWASA were the most significant financial risk factors. Similar results were obtained by Ayudhya and Kunishima (2019) who identified liquidity, payment delays, credit, and loans, as the main financial risk factors that public and private construction institutions face in Thailand. The presence of these risk factors can lead to significant problems such as an increase in cost, and legal disputes among different stakeholders, and affect the performance of the organization.

3.2.3. Unethical risks
The results in Table 4 revealed that both TANESCO and DUWASA face unethical risks as the problem of theft by institution employees was 71.4% and 84.0% were the most prevalent unethical risk factor in TANESCO and DUWASA respectively. The occurrence of this problem is mostly caused by the illegal connection of electricity and water by some customers through Vishoka which in turn leads to a loss of revenues for the organisation. Similar results were obtained by Ibrahim et al. (2019) who argued that most projects implemented in Nigeria by public...
institutions face the risks of bribery, theft, and fraud which in turn lead to poor project performance in terms of scope, schedule, and customer satisfaction.

Table 4. Risks faced by TANESCO and DUWASA

<table>
<thead>
<tr>
<th>Types of risks faced by an organization</th>
<th>TANESCO</th>
<th>DUWASA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk categories</td>
<td>Frequency</td>
<td>Percentage (%)</td>
</tr>
<tr>
<td>Political risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corruption</td>
<td>20</td>
<td>51.1</td>
</tr>
<tr>
<td>Constraints on customs and imports</td>
<td>22</td>
<td>62.9</td>
</tr>
<tr>
<td>Changes in government</td>
<td>8</td>
<td>22.9</td>
</tr>
<tr>
<td>Legal risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legal disputes among parties of the contract</td>
<td>28</td>
<td>80.0</td>
</tr>
<tr>
<td>Delayed disputes resolution</td>
<td>30</td>
<td>85.7</td>
</tr>
<tr>
<td>Change in laws and regulations</td>
<td>25</td>
<td>71.4</td>
</tr>
<tr>
<td>Procurement risks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conflicting or imperfect contract</td>
<td>30</td>
<td>85.7</td>
</tr>
<tr>
<td>Lack of transparency in the bidding</td>
<td>34</td>
<td>97.1</td>
</tr>
<tr>
<td>Breach of contract by a subcontractor</td>
<td>12</td>
<td>34.3</td>
</tr>
<tr>
<td>Financial/Economic Risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Payment delays</td>
<td>32</td>
<td>91.4</td>
</tr>
<tr>
<td>Liquidity</td>
<td>33</td>
<td>94.3</td>
</tr>
<tr>
<td>Credit and loan</td>
<td>10</td>
<td>28.6</td>
</tr>
<tr>
<td>Material price increase</td>
<td>30</td>
<td>85.7</td>
</tr>
<tr>
<td>Unethical practices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fraud</td>
<td>4</td>
<td>11.4</td>
</tr>
<tr>
<td>Theft</td>
<td>25</td>
<td>71.4</td>
</tr>
<tr>
<td>Bribery</td>
<td>15</td>
<td>42.9</td>
</tr>
</tbody>
</table>

*Based on Multiple responses

3.3. Strategies used in managing risks by TANESCO and DUWASA

The results in Table 5 indicated that both TANESCO and DUWASA use reduction strategies 85.7% and 84.0% as means of reducing the probability of risk occurrence and the impact resulting from the risk occurring on the objective achievements respectively. Specifically, TANESCO and DUWASA use contingency planning, contract terms and conditions, crisis management and disaster recovery plans, training, routine auditing and inspections, and upgrading skills among employees as the means to reduce the probability and impacts of risks faced by these institutions. These findings are similar to the study of Tang
et al. (2007), Fisayo and Nwankwo (2015) who argued that reducing the probability and impacts of risks is the most used risk response by construction organizations in China and small and medium enterprises in Nigeria. A risk reduction strategy was preferred as it provides a sound basis to establish an open communication process for risk management process among all parties involved in risk management.

Table 5. Strategies used in managing risks by TANESCO and DUWASA

<table>
<thead>
<tr>
<th>Risk strategy</th>
<th>TANESCO</th>
<th></th>
<th>DUWASA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage (%)</td>
<td>Frequency</td>
<td>Percentage (%)</td>
</tr>
<tr>
<td>Avoidance</td>
<td>24</td>
<td>68.6</td>
<td>15</td>
<td>60.0</td>
</tr>
<tr>
<td>Reduction</td>
<td>30</td>
<td>85.7</td>
<td>21</td>
<td>84.0</td>
</tr>
<tr>
<td>Acceptance</td>
<td>22</td>
<td>62.9</td>
<td>16</td>
<td>64.0</td>
</tr>
<tr>
<td>Transfer</td>
<td>25</td>
<td>71.4</td>
<td>13</td>
<td>52.0</td>
</tr>
<tr>
<td>Enhancement</td>
<td>9</td>
<td>25.7</td>
<td>5</td>
<td>20.0</td>
</tr>
</tbody>
</table>

*Based on Multiple responses

3.4. Role of risk management practices in improving organization performance

3.4.1. Correlation results

For finding the strength of the relationship between several variables, "Spearman’s Rank Correlation" was used, this is because the data set of the variables was not normally distributed (Wong and Hiew, 2005). For the case of TANESCO, the findings in Table 6 indicate that there is a significant and positive strong correlation between risk treatment and organizational performance ($r=0.735$, $p=0.05$), showing that effective risk treatment is crucial in improving organizational performance. Also, the findings indicate that there is a significant and positive strong correlation between risk identification and organizational performance ($r=0.528$, $p=0.01$) which implies that risk identification is a key step for ensuring proper management of risk. The findings are similar to those of Saleem and Abideen, (2011), Saedi et al. (2019), and Kakiya et al. (2019), who argued that effective risk management practices improve organizational performance.

Table 6. Spearman’s Rank Correlation of Variables for TANESCO

<table>
<thead>
<tr>
<th>OP</th>
<th>CC</th>
<th>SCC</th>
<th>RI</th>
<th>RA</th>
<th>RE</th>
<th>RT</th>
<th>RR</th>
<th>MR</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CC</td>
<td>-0.051</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCC</td>
<td>0.264</td>
<td>0.359</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RI</td>
<td>0.528**</td>
<td>0.432*</td>
<td>0.293</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RA</td>
<td>-0.418*</td>
<td>0.019</td>
<td>-0.161</td>
<td>-0.641**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RE</td>
<td>-0.002</td>
<td>0.027</td>
<td>0.014</td>
<td>0.157</td>
<td>-0.188</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RT</td>
<td>0.735*</td>
<td>0.091</td>
<td>0.116</td>
<td>0.540**</td>
<td>-0.521**</td>
<td>0.135</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>RR</td>
<td>-0.253</td>
<td>0.225</td>
<td>-0.067</td>
<td>0.121</td>
<td>-0.168</td>
<td>-0.030</td>
<td>-0.118</td>
<td>1</td>
</tr>
<tr>
<td>MR</td>
<td>0.219</td>
<td>0.194</td>
<td>0.402*</td>
<td>0.104</td>
<td>0.136</td>
<td>0.012</td>
<td>0.176</td>
<td>-0.233</td>
</tr>
</tbody>
</table>

Notes: **Significant at 0.01 level (2-tailed). *Significant at 0.05 level (2-tailed).
For the case of DUWASA, the findings in Table 7 indicate that there is a significant and positive strong correlation between risk treatment and organizational performance ($r = 0.683, p = 0.01$), showing that effective risk treatment is crucial in improving organizational performance, followed by a moderately significant and positive correlation between risk identification and organizational performance ($r=0.461, p=0.05$) as well as moderate significant and positive correlation exists between risk analysis and organizational performance ($r = 0.450, p =0.05$). This implies that effective risk responses result in minimized threats and maximized opportunities, optimizing the organization’s chances of achieving its objectives. This implies that for effective risk management, the organization should pay attention to developing and implementing risk treatment options. The findings are similar to those of Ahmed (2021) who argued that risk control activities improve organizational performance by improving customer satisfaction in the industrial sector in Sudan.

Table 7. Spearman’s Rank Correlation of Variables for DUWASA

<table>
<thead>
<tr>
<th></th>
<th>OP</th>
<th>CC</th>
<th>SCC</th>
<th>RI</th>
<th>RA</th>
<th>RE</th>
<th>RT</th>
<th>RR</th>
<th>MR</th>
</tr>
</thead>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CC</td>
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<td>1</td>
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<td></td>
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</tr>
<tr>
<td>SCC</td>
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<tr>
<td>RI</td>
<td>.461*</td>
<td>.084</td>
<td>.146</td>
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</tr>
<tr>
<td>RA</td>
<td>.450*</td>
<td>.313</td>
<td>.083</td>
<td>.440*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RE</td>
<td>-.085</td>
<td>.003</td>
<td>.151</td>
<td>.000</td>
<td>-.387*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RT</td>
<td>.683**</td>
<td>.059</td>
<td>.117</td>
<td>.559**</td>
<td>.415*</td>
<td>-.057</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RR</td>
<td>.420*</td>
<td>-.225</td>
<td>.363*</td>
<td>.496**</td>
<td>.252</td>
<td>-.172</td>
<td>.412*</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>MR</td>
<td>.062</td>
<td>-.018</td>
<td>.208</td>
<td>.144</td>
<td>-.138</td>
<td>.270</td>
<td>.089</td>
<td>.059</td>
<td>1</td>
</tr>
</tbody>
</table>

Notes: **Significant at the 0.01 level (2-tailed). *Significant at the 0.05 level (2-tailed).

3.4.2 Ordinal regression results

Organization performance depends on various factors that reduce the uncertainties of achieving the desired objectives of the respective organization. In determining the role of risk management practices in improving organization performance, risk management practices were used as independent variables. Using Ordinal regression analysis the results in Table 8 indicate that the independent variables included in the model are a good predictor of the organizational performance through risk management practices in TANESCO (Nagelkerke $R^2=78.4\%$). The results in Table 8 indicate that establishing scope, context and criteria was a significant positive predictor of organization performance at the one percent level ($\text{coefficient} = 2.678, p=0.008$). The results indicate that for every one-unit increase in clarity of risk management scope, the context of risk operation and the criteria for risk management will increase organizational performance by 2.678 units which means the variable has a strong impact on organizational performance.
performance. The findings conform with Nguyen and Tran (2021), and Pimchangthong and Boonjing (2017) who stressed that objective setting is very crucial for any risk management practices to have a meaningful impact on organisational performance.

Furthermore, results in Table 8 indicate that risk identification and risk treatment were significant positive predictors of organization performance at the one percent level ($\text{coefficient} = 2.766, p=0.000$ and $3.930, p=0.008$) respectively. The results indicate that for every unit increase in risk identification will increase organizational performance by 2.766 units, and for every one-unit increase in risk treatment options will increase the organisational performance by 3.930 units. This means that these variables are having a strong impact on improving organizational performance. These results concur with the studies of Ahmed (2021), and Rasid et al. (2017), who argued that the adoption of risk management practices improves organizational performance in the long run.

**Table 8. Parameter estimates for TANESCO**

<table>
<thead>
<tr>
<th>Threshold</th>
<th>Estimate</th>
<th>Std. Error</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>[OP = 3.40]</td>
<td>-5.733</td>
<td>8.911</td>
<td>.414</td>
<td>1</td>
<td>.520</td>
<td>-23.199 to 11.733</td>
</tr>
<tr>
<td>[OP = 3.60]</td>
<td>-1.623</td>
<td>8.792</td>
<td>.034</td>
<td>1</td>
<td>.854</td>
<td>-18.855 to 15.610</td>
</tr>
<tr>
<td>[OP = 3.80]</td>
<td>.558</td>
<td>8.715</td>
<td>.004</td>
<td>1</td>
<td>.949</td>
<td>-16.523 to 17.639</td>
</tr>
<tr>
<td>CC</td>
<td>-.248</td>
<td>.567</td>
<td>.192</td>
<td>1</td>
<td>.661</td>
<td>-1.359 to .862</td>
</tr>
<tr>
<td>SCC</td>
<td>2.678</td>
<td>1.011</td>
<td>7.009</td>
<td>1</td>
<td>.008</td>
<td>.695 to 4.660</td>
</tr>
<tr>
<td>RI</td>
<td>2.766</td>
<td>.751</td>
<td>13.560</td>
<td>1</td>
<td>.000</td>
<td>1.294 to 4.239</td>
</tr>
<tr>
<td>RA</td>
<td>.798</td>
<td>1.161</td>
<td>.472</td>
<td>1</td>
<td>.492</td>
<td>-1.478 to 3.074</td>
</tr>
<tr>
<td>RE</td>
<td>-1.495</td>
<td>.658</td>
<td>5.162</td>
<td>1</td>
<td>.023</td>
<td>-2.785 to -.205</td>
</tr>
<tr>
<td>RT</td>
<td>3.930</td>
<td>1.487</td>
<td>6.980</td>
<td>1</td>
<td>.008</td>
<td>1.014 to 6.845</td>
</tr>
<tr>
<td>RR</td>
<td>-5.364</td>
<td>1.635</td>
<td>10.756</td>
<td>1</td>
<td>.001</td>
<td>-8.569 to -2.158</td>
</tr>
<tr>
<td>MR</td>
<td>-2.474</td>
<td>1.109</td>
<td>4.976</td>
<td>1</td>
<td>.026</td>
<td>-4.648 to -.300</td>
</tr>
</tbody>
</table>

Goodness-of-Fit: Pearson = 1, Deviance = .625
Pseudo R-Square: Nagelkerke = .784
Test of Parallel Lines: .360

Using Ordinal Regression analysis results in Table 9 indicate that the independent variables included in the model are a good predictor of the
organizational performance through risk management practices in DUWASA (Nagelkerke $R^2=58.6\%$). Results in Table 9 indicate that risk identification and risk treatment were the significant positive predictor of organisation performance at one percent and five percent levels respectively ($coefficients = 1.619$, $p=0.002$ and $2.158$, $p=0.023$). The results indicate that for every unit increase in risk identification will increase organisational performance by 1.619 units, and for every one-unit increase in risk treatment options will increase the organisational performance by 2.158 units. This means that these variables are having a strong impact on improving organisational performance.

These results concur with those of Girangwa et al. (2020), who argued that effective risk management practices influence organizational performance in state-owned corporations in Kenya.

Table 9: Parameter estimates for DUWASA

<table>
<thead>
<tr>
<th>Threshold</th>
<th>Estimate</th>
<th>Std. Error</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>[OP = 3.00]</td>
<td>5.188</td>
<td>6.668</td>
<td>.605</td>
<td>1</td>
<td>.437</td>
<td>-7.881 (\rightarrow) 18.256</td>
</tr>
<tr>
<td>[OP = 3.40]</td>
<td>7.620</td>
<td>6.655</td>
<td>1.311</td>
<td>1</td>
<td>.252</td>
<td>-5.424 (\rightarrow) 20.664</td>
</tr>
<tr>
<td>[OP = 3.60]</td>
<td>8.941</td>
<td>6.955</td>
<td>1.783</td>
<td>1</td>
<td>.182</td>
<td>-4.181 (\rightarrow) 22.062</td>
</tr>
<tr>
<td>[OP = 3.80]</td>
<td>10.064</td>
<td>6.736</td>
<td>2.233</td>
<td>1</td>
<td>.135</td>
<td>-3.137 (\rightarrow) 23.266</td>
</tr>
<tr>
<td>[OP = 4.00]</td>
<td>11.004</td>
<td>6.778</td>
<td>2.636</td>
<td>1</td>
<td>.104</td>
<td>-2.800 (\rightarrow) 24.288</td>
</tr>
<tr>
<td>CC</td>
<td>-2.629</td>
<td>1.259</td>
<td>4.364</td>
<td>1</td>
<td>.037</td>
<td>-5.096 (\rightarrow) -1.63</td>
</tr>
<tr>
<td>SCC</td>
<td>.169</td>
<td>1.051</td>
<td>.026</td>
<td>1</td>
<td>.872</td>
<td>-1.891 (\rightarrow) 2.229</td>
</tr>
<tr>
<td>RI</td>
<td>1.619</td>
<td>.510</td>
<td>10.055</td>
<td>1</td>
<td>.002</td>
<td>.618 (\rightarrow) 2.619</td>
</tr>
<tr>
<td>RA</td>
<td>.551</td>
<td>.816</td>
<td>.456</td>
<td>1</td>
<td>.500</td>
<td>-1.049 (\rightarrow) 2.150</td>
</tr>
<tr>
<td>RE</td>
<td>-0.008</td>
<td>.684</td>
<td>.000</td>
<td>1</td>
<td>.991</td>
<td>-1.348 (\rightarrow) 1.333</td>
</tr>
<tr>
<td>RT</td>
<td>2.158</td>
<td>.953</td>
<td>5.132</td>
<td>1</td>
<td>.023</td>
<td>.291 (\rightarrow) 4.025</td>
</tr>
<tr>
<td>RR</td>
<td>.143</td>
<td>1.039</td>
<td>.019</td>
<td>1</td>
<td>.891</td>
<td>-1.894 (\rightarrow) 2.180</td>
</tr>
<tr>
<td>MR</td>
<td>.517</td>
<td>.503</td>
<td>1.058</td>
<td>1</td>
<td>.304</td>
<td>-.468 (\rightarrow) 1.502</td>
</tr>
</tbody>
</table>

Goodness-of-Fit: Pearson = 1, Deviance = .963
Pseudo R-Square: Nagelkerke = .586
Test of Parallel Lines: .894

5.0. Conclusion and Recommendations

Based on the study’s findings, it is concluded that TANESCO and DUWASA face a variety of risks in their operations which include political risks, procurement risks, financial risks, legal risks, and unethical risks that affect their performance. The findings also revealed that risk reduction which includes reducing the probability of a risk occurring and reducing the impacts of the risk if it occurs is the main risk treatment option preferred by both TANESCO and DUWASA. The findings also revealed that in TANESCO six out of eight risk management processes have a significant impact on organizational performance. These processes are establishing scope, context and criteria,
risk identification, risk evaluation, risk treatment, risk reporting and monitoring and review while in DUWASA only three risk processes namely; communication and consultation, risk identification, and risk treatment had a significant impact on organisational performance. The policy implications of this stance call for the need for public institutions to pay more attention to risk management processes and integrate them with the core functions of the organisation if organizational objectives are to be achieved. They also should pay attention to the risks associated with political, financial, procurement, legal, and unethical risks that affect organisational performance.

References
to strategic risk management within the province of Newfoundland and Labrador.


URT (2011). Public Procurement Act, 2011 and its Regulations 2013,