EFFECT OF KNOWLEDGE MANAGEMENT ON ORGANIZATIONAL PERFORMANCE IN ADDIS ABABA, ETHIOPIA: A CASE STUDY IN ETHIOPIAN AGRICULTURAL TRANS-FORMATION AGENCY (ATA)

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Abstract

Knowledge management and knowledge resources have gained much importance in recent years and are said to improve organizational performance. However, the effects of knowledge management practices on organizational performance are not well known especially in the case of public organizations. This research examined the effects of knowledge management practices on organizational performance at Ethiopian Agricultural Transformation Agency. The study adopted explanatory research. Questionnaires were adopted on the basis of literature review. The questionnaires were also used to collect data from members of staff; respondents were selected through a random sampling method with sample size of 140 respondents. The completed questionnaires were edited for completeness and consistency, checked for errors and analyzed using statistical package for social science (SPSS 20) frequencies, percentages and multiple correlations for quantitative analysis. The study recommends Ethiopian Agricultural Transformation Agency should ensure a formalized way of acquiring knowledge from its employee and implement knowledge sharing practices that enable the employees to learn from each other. Ethiopian Agricultural Transformation Agency should also revise Organizational structure in accordance with the knowledge management element to enhance the effect of organizational performance and use advanced technologies to enhance its knowledge management practice.

Keywords: Knowledge Resources, Resource Planning, Agricultural Transformation Agency.

1. Introduction

Knowledge management practice can improve organizational performance in many ways. According to (Fakhar et.al 2005) Knowledge management practices have a significant impact on organizational performance. The study found that knowledge management practices appear to be a very important element for the public sector to be competitive and to ensure its survival. Organizations that encourage and reward sharing knowledge, have better profitability, employee retention, customer satisfaction, product innovation and others. Organizations have realized that knowledge is power but only if it is readily accessible, organized, analyzed and displayed to solve the needs of users. Nowadays, organizations have to compete for their survival. Therefore, many organizations are operating in the global context, which poses more strategic challenges (Koenig, 2008). In order to stay competitive and survive, organizations are establishing their own knowledge management systems. Technologies such as knowledge management system (KMS) allow organizations to gain vast amounts of business intelligence. KMS is a single, server-based repository that allows centralized analysis, security, and control over knowledge, which is designed for a strategic business unit or a department that it is a lower-cost version (Hasnol, 2016). When KM started, the focus was purely internal to the organization and the application of technology within the scope to include learning organizations and the information profession to cover knowledge beyond and outside the organization (Koenig, 2008).
In Ethiopia, knowledge management (KM) happens often person to person. The few past efforts such as the WoredaNet initiative by the Government of Ethiopia to facilitate knowledge sharing were not as successful because IT based KM is still in its infancy stage. Also, in Ethiopia, little or no attention is provided to knowledge generation and sharing mechanisms and approaches. (Fanos Me-konnen et al., 2012)

The study used a theoretical approach in 10 pilot districts of 4 regional states of the country. The results of his study shows IPMS project followed systematic and step - wise approaches of KM and capacity development by support of various ICT and non ICT tools that facilitated multidirectional knowledge flows, empowerment of practitioners and linkage creation to improve productivity, profitability and sustainability of market-oriented agricultural development.

According to the authors, the major tools and pro-cesses are establishment of agricultural knowledge centers for up to date and relevant information resource delivery, enhancement of program delivery and technical skills through participatory training; establishing partnership with various stakeholders and institutions at all levels and developing a web based platform. A lesson from IPMS on implementing the above components with the need for an overall understanding of knowledge as a critical ‘input’ to agricultural development being internalized among program implementers at all levels and importance in building capacity of actors, not only to have implementers but also to have those who forge linkages, identify needs and manage partnership processes.

Another study done in Ethiopia, was KMP in development and humanitarian aid organization in by Hermella (Hermella, 2000), whose research done by using qualitative research methods via online survey. The study shows that KM in an organ-ization describes the technological readiness of the organization. Similarly formulation of KM principles, policy and strategy in an organization and ‘implementation of KM in an organization’ touch upon the processes involved for the smooth implementation of KM and facilitators are essen-tial for establishing a successful KM initiative in an aid organization. According to Hermella’s re-sults, staff and knowledge workers in these organizations are actively involved in sharing information and knowledge resources when required to speed up working processes. In another way her result shows absence of proper organizational guidelines on knowledge sharing, lack of knowledge of what colleagues need and shortage of time and resources to facilitate knowledge shar-ing.

In conclusion, there are many empirical studies that have been carried out on KM. However, as observed by Syed-Iklhsan and Rowland (2004), only a few of these empirical studies have been carried out in developing countries. The empirical studies reviewed have convergent results which show that KM influences performance of the stud-ied organizations (Marques & Simon, 2006; Wu & Lin, 2009; Yusoff&Daud, 2010).

The previous study considers knowledge process including knowledge acquisition, Knowledge sharing and enabling factors such as organizational structure and technology as an antecedent factor to knowledge management components. (Taetun Cho, 2011)

Hence, this study focused on exploring a framework where process and enabling factors of knowledge management for organizational performance.

### 2. Theoretical Framework and Hypotheses

Knowledge management in Ethiopia is not yet developed well but there are some related works in this area like the study of Ermias (2011) on innovative approaches of KM in agriculture, as in the case of IPMS by using theoretical approach in 10 pilot dis- tricts of 4 regional states of the country. The results of his study show IPMS project followed systematic and step-wise approaches of KM and capacity development by support of various ICT and non-ICT tools that facilitated multidirectional knowledge flows, empowerment of practitioners and linkage creation to improve productivity, profitability and sustainability of market oriented agricultural development.

According to the author the major tools and processes are: establishment of agricultural knowledge centers for up to date and relevant information resource de-livery; enhancement of program delivery and tech-nical skills through participatory training; establish-ing partnership with various stakeholders and institu-tions at all levels; and developing a web based plat-form, Ethiopian agriculture portal (www.eap.gov.et) to make resources relevant to Ethiopian agriculture available. A lesson from IPMS is on implementing the above components with the need for an overall understanding of knowledge as a critical ‘input’ to agricultural development being internalized among program implementers at all levels and importance in building capacity of actors, not only to have implementers but also to have those who forge linkages, identify needs and manage partnership processes. Another study done in

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Ethiopia was KMP in development and humanitarian aid organization in Ethiopia by (Hermella, 2000) the research done by using qualitative research methods via online survey.

The results of this study depend on Kruger &Synman KM maturity assessment instrument and the general KM maturity model (G-KMMM) by Pee &Kankanhalli provides a useful framework through which to assess knowledge management. According to this author, an organization is aware of and has the intention to manage its organizational knowledge, but it might not know how to defined basic infrastructure is put in place to support KM to managed, KM initiatives are well established in the organization and op-timized where KM is adequately integrated into organizational processes. Her result also proves the main pillars of the G-KMMM and Kruger and Syn-man in the study area that ICT as an enabler of KM and information management's role for KM in an or-ganization describe the technological readiness of the organization. Similarly formulation of KM principles, policy and strategy in an organization and implement-tion of KM in an organization' touch upon the pro-cesses involved for the smooth implementation of KM and facilitator are essential for establishing a successful KM initiative in an aid organization. According to Hermella result staff and knowledge work-ers in these organizations are actively involved in sharing information and knowledge resources when required for speeding up working processes. In another way her result shows absence of proper organiza-tional guidelines on knowledge sharing, lack of knowledge of what colleagues need and shortage of time and resources to facilitate knowledge sharing.

This section presents such a framework, which will be used in this study for analyzing the effects of knowledge management practices on organizational performance. It presents the researcher's schematiza-tion of the study variables and depicts how the study has been thought.

### Knowledge process
- Knowledge acquisition
- Knowledge sharing

### Organizational performance
- Non-Financial aspect (Employee learning, Innovativeness)

### Knowledge Enablers
- Organization
- Structure
- Technology

3. Research Method

Knowledge management in Ethiopia is not yet developed well but there are some related works in this area like the study of Ermias (2011) on the innovative approach of KM in agriculture the case of IPMS by using a theoretical approach. For this reason, this study will employ an explanatory research with case analysis. In an exploratory research the main empha-sis is on the discovery of ideas and insights (Churchill, 2001); according to Singleton (1993) exploratory studies are undertaken when relatively little is known about the subject.

The study was carried out in at the ATA in Addis Ababa, Ethiopia. The total number of staff at the ATA head office is two hundred sixty-three. As a mecha-nism of addressing the validity of a research under-taking, this study has sample frame constituted ques-tionnaire respondents’ participant.
From the prepared sample frames (list of units), study units were selected randomly from each stratum (departments) by simple random sample techniques. Structured questionnaires were distributed to the selected units and expected to be filled with duly return.

The sample size for questionnaire respondents were determined using Yamane’s Simplified formula as follows
\[ n = \frac{N}{1 + N(e)^2} \]
\[ e^2 = 0.052 \]
\[ \frac{263}{1 + 263(0.05)^2} = 158 \]

Where,
- \( n \) is the desired sample size
- \( e^2 \) is the confidence level (\( e \)--- is margin of error)
- \( N \) is the total population under study

For this study, the total population of the ATA is two Hinderers sixty-three. When the formula applied it yielded a sample size of 158.

Cronbach's coefficient alpha was used to compute reliability with support of SPSS 20.0 version to determine internal consistency of the items. Items were considered reliable if they yielded a reliability coefficient of 0.70 and above. This figure is considered desirable for consistency levels (Fraenkel&Wallen, 2000).

### 4. Data Analysis And Discussion

#### 4.1. Correlation Analysis

The researcher carried out a Pearson Correlation test to determine the effect of Knowledge management on organizational performance. The results of the test have been presented in Table 4.1. The results shown in Table 4.1 indicate that there exists a significant correlation between the dependent variable organizational performance and the independent variables Knowledge acquisition, Knowledge sharing, organizational structure and Technology.

<table>
<thead>
<tr>
<th>Table 4.1 Correlations</th>
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<tr>
<td></td>
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<tr>
<td>Organizational Performance</td>
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<td></td>
</tr>
<tr>
<td>Knowledge acquisition process</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Knowledge sharing average</td>
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<td></td>
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<tr>
<td>Organizational Structure</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Technology</td>
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</table>

**. Correlation is significant at the 0.01 level (2-tailed).
4.2. Hypothesis
The researcher derived four hypotheses for this research based on literature review. All four hypotheses are supported by the literature. Now it is time to check these hypothesizes based on the data collected from ATA’s respondent.

The coefficient of the relationship of observable variables (Knowledge acquisitions [0.493], Knowledge sharing [0.634] Organizational structure [0.842] and Technology [0.689]) to dependent variable (Organizational performance), along with its significance levels, is reported in Table 4.1. It can be observed from the above table, there is a positive correlation between the dependent variable (organizational performance) and independent variables (knowledge acquisition, knowledge sharing, organizational structure and Technology) and the correlation is also statistically significance since p-values are less than the conventional level of significance (0.05). The result presented show that all the posed relationships and hypotheses are established significance; hence all hypothesizes are supported by the study.

The results show that the relationship between knowledge acquisition, knowledge sharing, organizational structure, technology and organizational performance to be a strong positive relationship since the values of the correlation coefficient are positive and above 0.01 (0.493, 0.634, 0.842, and 0.689 respectively). The results show that knowledge acquisition, knowledge sharing, organizational structure, technology have a strong and positive effect on organizational performance at ATA.

4.3. Regression Analysis
To investigate the effects of independent variables on organizational performance, multiple linear regression analysis was used to analyze the results. A model was used. These were the assumptions of the model:

Estimation model is represented as:

\[ Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + U_i \]

Where;

- \( Y \) denotes the average organizational performance measures on Likert scale of Strongly agree (5) Agree (4), Neither agree nor disagree (3) Disagree (2) and Strongly Disagree (1)
- \( X_1 \) = Knowledge acquisitions
- \( X_2 \) = Knowledge sharing
- \( X_3 \) = Organizational structure
- \( X_4 \) = Technology
- \( U_i \) = random term

Assumptions of regression model
Ordinarily least square (OLS)

\[ Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + U_i \]

1. \( U_i \) is normal and independently distributed.
2. There is no multi-collinearity among the independent variables.
3. The dependent variables (X1, X2, X3, X4) are measured without error.

The results in Table 4.2 above show that, knowledge acquisition, knowledge sharing, organizational structure, and technology practices explained 79.1% (R²=0.791) of the variance in organizational performance. While 12% is due to circumstances beyond the researcher’s control. The results also show a strong positive relationship between knowledge sharing practices and organizational performance (R²=0.889). The multiple linear regression model explains 79.1 % which is shown by the value of R² and the adjusted R² is also 78.5% which is appropriate for multiple linear regression model with more than one independent variables.
The findings also show that taking into account all other independent variables at zero, a unit increase in the Knowledge sharing would lead to a -0.203 decrease in the scores of Organizational performances and a unit increase in the scores of Knowledge sharing would lead to a 0.85 increase in the scores of organizational performances. In addition, the findings show that a unit increase in the scores of Organizations Structure would lead to a 0.566 increase in the scores of Organizational performances. Further, a unit increase in the scores of Technology would lead to a 0.269 increase in the scores of organizational performances. Overall, Knowledge sharing had the greatest effect on the organization performance, followed by organizational structure, then Technology. All the variables were significant (p<0.05) except Knowledge acquisition.

In addition, the study outcome shows all variables are significantly related the model except Knowledge sharing, where it's P value is greater than 0.05 (0.15) which is not significantly contributing to the model as show under the table 4.2.

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.889a</td>
<td>0.791</td>
<td>0.785</td>
<td>0.27322</td>
</tr>
</tbody>
</table>

*a. Predictors: (Constant), Technology, Knowledge acquisition process, Organizational Structure, knowledge sharing average*

Source: Researcher (2019)

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5. Conclusion, Implication, Suggestion, And Limitations

5.1. Conclusions

ATA as a transformational organization in Ethiopia and as its visions “Innovations to help our country grow” need to support its core non-financial and learning activity with knowledge management. One of the key elements to support innovativeness for public organization in general to implement Knowledge management practice.

The main purpose of the study was to determine knowledge management and its effect on organizational performance. on Ethiopian Agricultural Transformation Agency. The study focused on the following: the effect of knowledge process: Knowledge acquisition, knowledge sharing and enabling for knowledge management as, organizational structure and Technology on organizational performance. Thus, the research results have found and established that there was an overall positive effect of knowledge management practices on organizational performance at ATA. Knowledge management as a practice could be the most influential strategy in managing knowledge in public organizations.
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The study ascertained that the effect of knowledge management on ATA's organizational performance was less since most of knowledge management elements including technology are not effectively utilized. Thus the members of the Senior Management team of the ATA as well as the employees should committed to consider knowledge management in the organization strategy to achieve innovativeness and address the issues properly.

5.2. Recommendations
The study recommends ATA should ensure it a formalized way of acquiring knowledge from its employee. These includes training employee in specific areas of specialization, which allows them to acquire new knowledge, improve on the existing handbooks; make use of meetings, seminars, workshops and symposiums to acquire new knowledge and involve all stakeholder in knowledge management.

The study recommends ATA should also implement knowledge sharing practices that enable the employeess to learn from each other, share their experience. This includes job rotation the organization that facilitates knowledge transfer; ATA must also develop knowledge repositories where it can enhance the knowledge sharing process as well there needs to be a specialized unit within ATA that coordinate the knowledge management practice. ATA should revise Organizational structure in accordance with knowledge management element to enhance the effect of organizational performance.

Finally, ATA should also implement use advanced technologies for the process of knowledge acquisition and Knowledge sharing practice this includes, electronic discussion groups, computer-based simulations, databases, decision support systems, enterprise resource planning systems, expert systems, management information systems, expertise locator systems, videoconferencing, and information repositories including best practices databases and lessons learned systems which in return enhance its knowledge management practice.

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