

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

Haimanot SEIFU,

Jimma University, Ethiopia

Mekuanint Abera TIMBULA,

Jimma University, Ethiopia

Emnet NEGASH

Jimma University, Ethiopia

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 had 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 processes 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 organization 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 essential for establishing a successful KM initiative in an aid organization. According to Hermella's results, 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 sharing.

In conclusion, there are many empirical studies that have been carried out on KM. However, as observed by Syed-Ikhsan 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 studied organizations (Marques & Simon, 2006; Wu & Lin, 2009; Yusoff&Daudi, 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. (Taejun 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

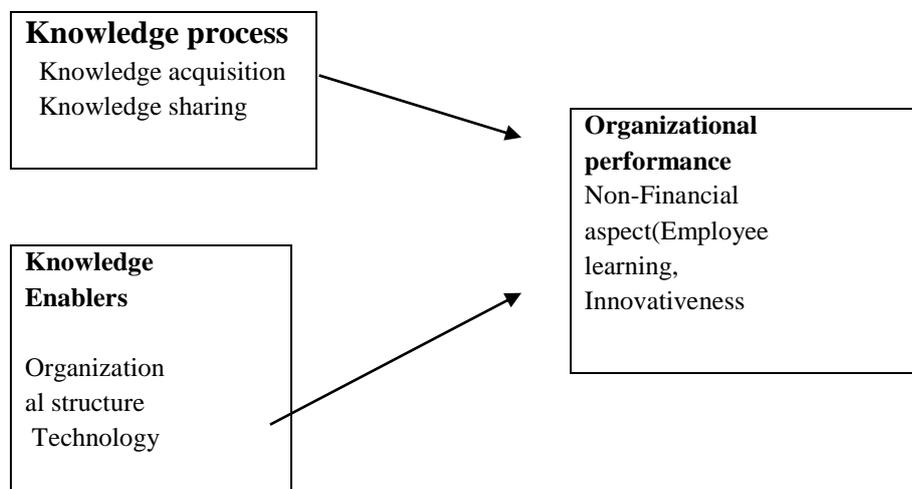
Knowledge management in Ethiopia is not yet developed well but there are some related works in this area like the study of Ermias (2011) on innovative approaches of KM in agriculture, as in the case of IPMS by using theoretical approach in 10 pilot districts of 4 regional states of the country. The results 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 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, Ethiopian agriculture portal (www.eap.gov.et) to make resources relevant to Ethiopian agriculture available. A lesson from IPMS on 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

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 define basic infrastructure is put in place to support KM to managed, KM initiatives are well established in the organization and optimized where KM is adequately integrated into organizational processes. Her result also proves the main pillars of the G-KMMM and Kruger and Synman in the study area that ICT as an enabler of KM and information management's role for KM in an organization describe 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 facilitator are essential for establishing a successful KM initiative in an aid organization. According to Hermella result staff and knowledge workers 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 organizational 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 schematization of the study variables and depicts how the study has been thought.



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 emphasis is on the discovery of ideas and insights (Churchill, 2001); according to Singleton (1993) explanatory 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 mechanism of addressing the validity of a research undertaking, this study has sample frame constituted questionnaire 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

$$n = N / (1 + N(e)^2)$$

$$e^2 = 0.052$$

$$263 / (1 + 263(0.05)^2)$$

$$= 158$$

Where,

n is the desired sample size

e² 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 4.1 Correlations

		Organizational Performance	Knowledge acquisition process	knowledge sharing average	Organizational Structure	Technology
Organizational Performance	Pearson Correlation	1	.493**	.634**	.842**	.689**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	140	140	140	140	140
Knowledge acquisition process	Pearson Correlation	.493**	1	.765**	.640**	.579**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	140	140	140	140	140
knowledge sharing average	Pearson Correlation	.634**	.765**	1	.720**	.579**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	140	140	140	140	140
Organizational Structure	Pearson Correlation	.842**	.640**	.720**	1	.586**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	140	140	140	140	140
Technology	Pearson Correlation	.689**	.579**	.579**	.586**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	140	140	140	140	140

** . 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 hypotheses 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. 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 significant since p-values are less than the conventional level of significance (0.05). The results presented show that all the proposed relationships and hypotheses are established significant; hence all hypotheses 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:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + U_i$$

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)

Y = Organizational

X1 = Knowledge acquisitions

X2 = Knowledge sharing

X3 = Organizational structure

X4 = Technology

U_i... random term

Assumptions of regression model

Ordinary least square (OLS)

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + U_i$$

1. U_i – normal and independently distributed, U_i is normal and independently distributed with mean 0 and constant variance.
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 (R=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 to the model except Knowledge sharing, where its P value is greater than 0.05 (0.15) which is not significantly contributing to the model as shown under table 4.2.

Table 4.2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.889a	.791	.785	.27322

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

Source: Researcher (2019)

The results in table 4.2 above show that, knowledge acquisition, knowledge sharing, organizational structure and technology practices explained 79.1% ($R^2 = 0.791$) 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 ($R = 0.889$).

The multiple linear regression model explains 79.1% which is shown by the value of R^2 and the adjusted R^2 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.

5. Conclusion, Implication, Suggestion, And Limitations

5.1. Conclusions

ATA as a transformational organization in Ethiopia and as its vision "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

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 be 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 has a formalized way of acquiring knowledge from its employees. This includes training employees 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 stakeholders in knowledge management.

The study recommends ATA should also implement knowledge sharing practices that enable the employees to learn from each other, share their experience. This includes job rotation in the organization that facilitates knowledge transfer; ATA must also develop knowledge repositories where it can enhance the knowledge sharing process as well as there needs to be a specialized unit within ATA that coordinates the knowledge management practice.

ATA should revise Organizational structure in accordance with knowledge management elements to enhance the effect of organizational performance.

Finally, ATA should also implement and 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 knowledge management practice.

References

- Abdul, Y. S. (2013). Leveraging business intelligence. Accounting today. Managerial resources and rents. Journal of Management
- ATA. (2014). Annual Report. Addis Ababa: ATA.
- Ayalew, H. (2000). Knowledge Management Practices in Development and Humanitarian Aid Organizations
- Adams, U. E., & Lamont, W. P. (2003). Information technology, strategic decision making approaches and competitive advantage in different industrial settings. The Journal of Strategic Information Systems 10 (2), 101–119.
- Adan, O. R. (2013). Detecting abnormal operating performance: the empirical power and specification of test statistics. Journal of Financial Economics 41 (3), 359–399.
- Agoti, D. N. (2014). Information and communication technology outsourcing and performance of humanitarian organizations in Kenya. Unpublished MBA, University of Nairobi.
- Alavi, H. I., & Leidner, Y.P. (2011). Information technology and business value: an analytical and empirical investigation. Information Systems Research 6 (1), 3–23.
- Barberand, I. T. (2006). Managing organizational knowledge as a strategic asset. Journal of knowledge management, Vol. 5, No. 1, pp. 8-18.
- Barney, J. B. (2011). Is the resource-based view a useful perspective for strategic management research? Yes. Academy of Management Review, 26(1), 41–56.

- Beauchamp, T. L., & Bowie, N. E. (2010). *Ethical Theory and business*, 7th Ed. Upper Saddle River, NJ: Pearson Prentice-Hall: 538-44.
- Beijerse, R.P. (2010). Questions in knowledge management: Defining and conceptualizing a phenomenon, *Journal of Knowledge Management*, 3(6), 56
- Choo, C., & Bontis. (2002). *The Strategic Management of Intellectual Capital and Organizational Knowledge*: New York: Oxford University Press.
- Chong, C., & Choi, Y. (2005). Critical Factors in the Successful Implementation of Knowledge Management. *Journal of Knowledge Management Practice*, 23(6) Retrieved on 23rd March 2012. <http://www.tlinc.com>
- Cranfield, D. (2011). *Knowledge Management and Higher Education: A UK Case Study Using Grounded Theory*. University of Southampton. Retrieved on 22nd March 2012. <http://eprints.soton.ac.uk>
- Creswell, W. (2003). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. (2nded). London: Sage publications Inc.
- Darroch, J. (2003). Developing a Measure of Knowledge Management Behaviours and Practices. *Journal of Knowledge Management*, 7 (5). Retrieved on 23rd March 2012. www.emeraldinsight.com
- Davenport, T., & Prusak, L. (1998). *Working Knowledge*. Boston: Harvard Business School Press.
- DeLong, D. W. (2004). *Lost Knowledge: Confronting the Threat of an Aging Workforce*. New York: Oxford University Press.
- Fanos Mekonnen, E. S. (2012). *INNOVATIVE APPROACHES OF KNOWLEDGE MANAGEMENT IN*.
- Gupta. (2000). *The Research of the Transferring Knowledge Between the Parent and subsidiary*. Taiwan: Junshan Wen, Rui Yang.
- Ikujro, N. (19194). *Dynamic Theory of Organizational Knowledge Creation*. INFORMS.
- Kothari, C. (2004). *Research Methodology: Methods and Techniques*. University of Rajasthan. Wish-waPrakasha
- Lyn Smith, P. M. (2008). *Effective Internal Communication*. Philadelphia: Kogan page Limited.
- Milton, J. (2003). *Measuring the contribution of vocabulary*.
- Mwangi, R. (2013). A Resource-Based view of organizational knowledge management systems, *Journal of Knowledge Management*, 4(3), 224-231.
- Maxwell, J.A. (2012). *Qualitative Research Design: An Interactive Approach: An Interactive Approach*. (Eds.). New Jersey, NJ: SAGE Publications. McDermott, R. (2009). Why information technology inspired but cannot deliver knowledge management. *California Management Review*, 41(4), 103-117.
- Mikulecky, P., & Mikulecka, J. (2009). Active Tools for Better Knowledge Dissemination. ASIS Annual Meeting, Washington D.C., 420-427. Mohammad, A.H., Hamdeh, M.A., & Sabri, A.T. (2010). Developing a theoretical framework for knowledge acquisition. *European Journal of Scientific Research*, 42(3), 453-463.
- Mohayidin, M.G., Azirawani, N., Kamaruddin, M.N., & Margono, I. (2007). The Application of Knowledge Management in Enhancing the Performance of Malaysian Universities. *The Electronic Journal of Knowledge Management*, 5(3), 301-312.
- Mugenda, O., & Mugenda, A. (2003). *Research Methods: Qualitative and Quantitative Approaches*. Nairobi: Acts Press.
- Noordende, V. S. (2010). *Accenture Development Partnerships*. Livingstone Media.
- Nguyen, E. R. (2010). Knowledge Management Capability And Competitive Advantage: An Empirical Study Of Vietnamese Enterprises. *Journal of Knowledge Management*, 10(4), 6-24.

- O'Donnell, J. K., & Berkery, I. P. (2003). People re-sourcing: *Contemporary Human Resource*, 67(34), 1307-1314.
- Onabanjo, V. (2010). Local government investment outreach and sustainability of microfinance institutions: A case study of BURO, Bangladesh. *The Journal of Social, Political, and Economic Studies*, 34, 318-346.
- Ondari, O. E., & Smith, G. (2007). Knowledge management and enhanced government-service delivery in Kenya. In *Proceedings of the 4th International Conference on Intellectual Capital, Knowledge Management and Organizational Learning, Organization Science*, 10(13), 339-351.
- Pollard, A. (2005). *Reflective Teaching*. Great Britain : Antony Rowe Ltd, Chippenham, Wiltshire.
- Prusak, T. H. (1998). *Working Knowledge: How Organizations Manage What They Know*. Harvard Business School Press.
- Prusak, L. (2001). Where did knowledge management come from? *IBM Systems Journal*, 40(4), 1002-1007. Retrieved on 23rd March 2012. <http://researchweb.com>
- Peyman, A. et al (2005). Exploring Failure- Factors of Implementing Knowledge Management Systems in Organizations. *Journal of Knowledge Management Practice*, 40(6). Retrieved on 23rd March 2012. www.ejkm.com
- Raja, S. (2008). The Relationship of Knowledge Management Practices, Competencies and the Organizational Performance of Government Departments in Malaysia. *International Journal of Human and Social Sciences*, 5(4). Retrieved on 10th June 2012. <http://www.waset.org>
- Rowley, J. (2002). Using Case Studies in Research. *Management Research News*, 25(1), 16-27. Retrieved on 10th June 2012. www.emeraldinsight.com
- Rumesh, K. (2003). Managing Knowledge in Turbulent Business Environments: An Empirical Study in the Malaysian Context?. *Malaysian Management Review*, 38(3). Retrieved on 23rd March 2012. <http://www.mim.org>.
- Sabherwal, R. and Becerra-Fernandez, I. (2003). An Empirical Study of the Effect of Knowledge Management Processes at Individual, Group, and Organizational Levels. *Decision Sciences* 4(1). Retrieved on 10th June 2012. www.decisionsciencesjournal.org.
- Smith, H., & McKen, D (2005). Developments in Practice XVII: A Framework for KM Evaluation. *Community Association Information System*, 32(7). Retrieved on 23rd March 2012. <http://start.aisnet.org>.
- Stankosky, M. (2005). *Advances in Knowledge Management: Creating the Discipline of Knowledge Management*. Washington, Elsevier Butterworth-Heinemann.
- Taylor, E., & Renner, M. (2003). *Analyzing Qualitative Data*. Retrieved on 20th June 2012. <http://www.learningstore.uwex.edu/pdf/G3658-12>.
- Tashakkori, and C. Teddlie (2003.), *Handbook of mixed methods in social and behavioral research*. Thousand Oaks, CA: Sage.
- Teece, D.J, Pisano, G. & Shuen, A. (2009). Building dynamic capabilities in new product development through intertemporal integration, *The Journal of Product Innovation Management*, 20, 136-148.
- Teece, D.J. (2007). Explicating dynamic capabilities: the nature and micro foundations of (sustainable) enterprise performance, *Strategic Management Journal*, 28, 1319-1350.
- Thomas, J. B., et al. (2001). Understanding "Strategic learning": Linking Organizational Learning, Knowledge Management and Sense making. *Organization Science*, 12(3), 331-345. Retrieved on 23rd March 2012. <http://orgsci.journal.informs.org>.