

# Knowledge Management and Organizational Performance in Information Technology Sector

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**Abstract—** This study focusses to identify and analyse the various knowledge management practices (KMP) and its impact on Organisational Performance (OP) in IT-Sector. The study has went through with an aim to examine the role of knowledge management practices in enhancing the performance of an organization. A sample of 171 Software Engineers were drawn using structured questionnaire. The responses were analysed using Partial Least Square -Path Modelling (PLS-PM) using Smart PLS. The results of the analysis revealed that Knowledge Management Practices such as Knowledge Diagnosing, Knowledge Acquisition, Knowledge Generation, Knowledge Sharing, Knowledge Storing, Knowledge Application, have significant effect on financial, non-financial and operational performance of the organization.

**Key words—** Knowledge Management Practices, Financial Performance, Non-Financial performance, Organizational Performance.

## I. INTRODUCTION

The trend of knowledge is ravishingly becoming the most important factor of Organisational productivity, next to labour, land and capital. It is possible for some forms of intellectual capital to be transferred, whereas internal knowledge is not easily copied. This makes the knowledge get depleted when the employee leaves the organisation. Therefore, this made the primary objective of management to improve the processes of acquisition, integration and usage of knowledge, which is exactly what knowledge management (KM) is all about. KM is a process of creating, accumulating, organising and utilising knowledge that intend to help in achieving objectives and enhance the performance of the organisation. In order to maximise its values, thrive of change in strategies, processes, organisational structures and technologies are to be made. Many knowledge management efforts have been largely concentrated with capturing, codifying, and sharing the knowledge held by employees of the organizations. Nickols summarizes this as follows: “the basic aim of knowledge management is to leverage knowledge to the organization’s advantage”.

It also assess knowledge management capabilities of organisation and identifies the possible gaps in their knowledge management systems that exists and suggests the possible ways to enrich organizational performance. It also studies how the KM infrastructure, both in means of technology and culture having impact on organizational performance (OP). From a managerial perspective, the findings of this study can improve organisational performance through the effective knowledge management measures. To be precise, this study identified several factors essential for improving organisational performance. Knowledge management is taken as an important aspect today across the world, in all industry sectors such as the public and private organizations, the humanitarian institutions and international charities. Most importantly, effective knowledge management is now considered as the key driver of new knowledge with betterment with new ideas to the process of innovation, to innovate methods for new products, services and solutions. Once we can understand the value and benefits to be gained, we will then attain more motivationally inspired to look at the implementation of knowledge management.

The purpose of knowledge management is not only to be just more knowledgeable, but make one able to create, transfer and apply knowledge with the purpose of better achieving objectives. Effective knowledge management by usage of more collective and systematic processes will decrease our tendency to commit mistakes repetitively. Effective knowledge management, therefore, can drastically improve quality of any products or services or both. So it is very accessible to see how effective knowledge management will greatly contribute to improved excellence, which is aimed to dramatically reduce the cost, and by providing potential to expand and flourish and also to increase our value profitability. It also helps to improvise the products and services.

In this regards, this study has been undertaken to understand the various prevailing KM practices in the IT-Sector and also how each KM practices contribute towards the performance of the organization in terms of financial, non-financial and operational performance.

### A. *Need For Study*

The study has been made to identify employee's interest in Knowledge Sharing with their Colleagues and to identify the top management support to the employee's knowledge sharing interest. Also, it is important to identify the recognition & rewards given to motivate the employees and to examine the Impact of Knowledge management in Financial, Non-financial and operational performance of the organisation.

### B. *Research Objectives*

- To examine the effect of Knowledge Management practices on Financial Performance of the organization.
- To examine the effect of Knowledge Management practices on Non- Financial Performance of the organization.
- To examine the effect of Knowledge Management practices on Operational Performance of the organization.
- To test and validated the proposed research model.

## II. REVIEW OF LITERATURE

Knowledge management systems (KMS) are seen as the means to aid organizations in creating, sharing and using knowledge. In the past, firms have invested millions of dollars in these types of systems in order to create competitive value. Knowledge management systems are defined as systems designed and developed to give decision makers/users in organizations the knowledge they need to make their decisions and perform their tasks (Davenport, 1998). Knowledge management systems are concerned with the management of knowledge in the organization.

According to Demarest (1997), knowledge management consists of five processes: construction, embodiment, dissemination, use, and management. Miller (1999) suggests that knowledge management refers to the acquisition of knowledge (capturing) that is, creation, collection, storage, distribution, and application of knowledge. Armistead (1999) divides the process of knowledge management into three sub processes: knowledge creation, knowledge transfer, and knowledge embedding.

Porter (1990) found that innovation was the basis of long-term sustainable competitive advantage. Despite the importance of the innovative capacity of an organization to its survival and the number of works exploring the impact of innovativeness on different aspects of doing business, no consensus has been reached on a uniform definition or approach to analysis. In earlier work innovativeness was mainly associated with research and development, so the definitions of innovativeness from that period were associated with the effects of this business function in the context of new product development (Dougherty and Hardy, 1996).

Jillinda J. Kidwell et al., (2001) stressed the importance of KM techniques and technologies in higher education which helps for decision-making capabilities, reduced product development cycle time i.e. curriculum development and research, improved academic and administrative services and reduced costs. Important management issues in knowledge management (KM) include the strategic use, management support, content currency and the effective design of knowledge management systems (KMS) (King, Marks, & McCoy, 2002, Sharp 2003).

Alavi&Leidner, 2001; Lee & Choi, 2003, KM processes include knowledge creation, storing, sharing and usage, while KMS include the systems, policies, processes and procedures used to manage the creation, storing, sharing, and reuse of knowledge. Conceptually, then, a KMS is a system that allows for the creation, diffusion or transfer, and the ready availability of knowledge in the organization.

John H. Milam (2004) emphasises the application of KM in higher education with the help of web portal which is used intensively for team collaboration and groupware, natural language queries of data, sharing information on best practices and anytime/anywhere online learning. Gold et al. (2001) examined an empirically effective KM model from the perspective of organisational capabilities. This perspective suggests that a knowledge infrastructure, consisting of technology, structure and culture, along with knowledge process architecture of acquisition, conversion, application and protection, are essential organizational capabilities or preconditions for effective KM.

Pentland(1995) defines KM processes as an ongoing set of practices embedded in the social and physical structure of the organisation with knowledge as their final product". Effective KM processes should be conducted frequently, consistently, and flexibly (Grant 1996a). Song (2008) showed that creating knowledge can significantly associate with organizational improvement. In addition, when the knowledge gained is used properly, there will be a significant and positive relationship between knowledge acquisition and organizational performance (Seleim and Khalil, 2007).

Gold, Malhotra, and Segars (2001) examine that the issue of effective knowledge management from the perspective of organizational capabilities. This perspective suggests that a knowledge infrastructure consisting of technology, structure, and culture along with a knowledge process architecture of acquisition, conversion, application, and protection are essential organizational capabilities or "preconditions" for effective knowledge management. The results provide a basis for

understanding the competitive predisposition of a firm as it enters a program of knowledge management. With effective and efficient KM process, most companies claims it will be helpful to organizational performance. Accordingly, KM is taken for granted an important antecedent of organization performance or innovation (Darroch, 2005).

But there are still some different results in KM sub-processes, or sub-dimensions, and organizational performance. It needs to verify very carefully. And, literatures in KM discuss different influence on Organisational Learning (OL). Some authors find these two focuses are cause and effect simultaneously, and some authors take OL is a cause, KM is an effect; or opposite. In these studies, researchers implicitly assume a perspective of OL -> KM effect in which the causal direction runs primarily from OL to KM. And a KM -> OL effect could also account for the associations between KM and OL (Su and Hsieh, 2003, 2004). In this perspective, OL is viewed as a reaction to KM rather than an action that contributes to KM. So, from the RBV, this study adopt KM -> OL effect which view OL is a reaction to KM. Performance is a recurrent theme in most branches of management, and it is of interest to both academic scholars and practicing managers. Although the importance of the performance concept (and the broader area, organizational effectiveness) is widely recognized, the treatment of performance in research setting is perhaps one of the thorniest issues confronting the academic researcher today. Financial performance, operational performance, and organizational effectiveness should involve in performance (Venkatraman & Ramanujam, 1986).

From a traditional perspective, organizational performance is commonly referred to as financial performance where considerations of budgets, assets, operations, products, services, markets and human resources are crucial in influencing the over-all bottom-line of an organization(Dixon, 1999; Thurbin, 1994; Smith, 1999). However, the notion of performance embraces a far wider dimension of interpretations. With the focus on organizational learning, the performance outcomes associated with it need to be more carefully dealt with. The importance of performance measurement system is manifold. Not only does it demonstrate how an organization does, how well it does it and how much progress it makes over time in archiving its goals, most importantly, it helps to manage organizational change (Yeo, 2003). Hence, qualitative measures are more appropriate in investigating these key objectives that dominate and direct decision-making and action-taking levels (Thurbin, 1994; Herdges, 1998).

Darroch (2005) research, she uses comparative and internally reflective performance measures, for example” Compared with the industry average, our company is more profitable” and internally reflective performance measures, for example, “We are more profitable than we were five years ago”. These performance measures capture both financial Measures and non-financial measures (e.g. market share and sale growth.) However, similar to any organizational resource, effective knowledge management through the development of Capabilities should contribute to key aspects of organizational performance (Andrew, 2001). With greater knowledge management capabilities, firms can obtain and use knowledge more effectively and efficiently, which results in above-normal performance.

Tippins and Ravipreet (2003) mention the relationship between IT competency and firm performance is mediated by organizational learning. From literature review, knowledge management affects organizational learning positively (Garratt, 1990, Su, Huang, and Hsieh, 2004). In Su, Huang, and Hsieh (2004), OL mediates the relationship between KM flow factors and KM flows. Darroch (2005) also finds that knowledge acquisition had more indirect than direct influence on organizational performance.

#### A. *Research Gap*

After reviewing the various studies, it is found that there are many studies focusing on the effect of knowledge management in organisational performance as a whole. The Research Gap is identified as, there are only few studies for examining the effect of knowledge management in improving financial, non-financial and operational performance of an organisation separately. Based on the gap, the model is developed and given below (Fig 1)

#### B. *Research Model*

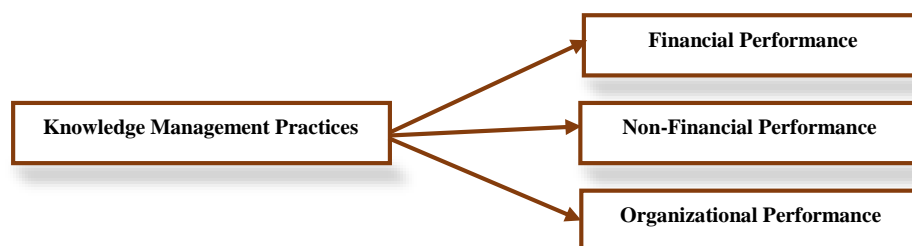


Fig 1 Research Model

### C. Hypotheses Development

**H1:** KM practices has significant positive impact on financial performance.

**H2:** KM practices has significant positive impact on non - financial performance. .

**H3:** KM practices has significant positive impact on operational performance.

## III. RESEARCH METHODOLOGY

### A. Research Design

Research design is descriptive in nature. It is a detailed plan of how the goals of research will be achieved. For the present study, single cross sectional Survey research design is used in order to understand the effect of knowledge management on organisational performance. This research investigates effect of knowledge management on financial, non-financial and organisational performance of an organisation.

### B. Population and Sample size

The population of the study includes all employees of particular IT based companies, whose work is being influenced by the implementation of Knowledge Management Practices. A sample of 171 Software Engineers were taken using simple random sampling for the purpose of survey.

### C. Nature of Data

Primary data was collected with the aid of structured questionnaire. The data related to the profile of the industry, the organization and review of literature was collected from the secondary sources. The profile of the industry and Organization was obtained from the internet and the magazines.

### D. Survey Instrument

In order to achieve the objectives of the study, a draft questionnaire was developed based on comprehensive reviews of the extant literature. The questionnaire was classified into two parts. Part I consists of questions seeking information about employee's characteristics which include demographics (such as gender, age, designation, experience). The Part II includes questions that aim at obtaining details such as Knowledge Management Practices such as Knowledge diagnosing, Knowledge sharing, Knowledge Acquisition and various organisational performance parameters. Most questions placed in the questionnaire required the respondents to assign a score rating on five point Likert scale.

### E. Tools for Analysis

Percentage Analysis and Partial Least Square- Path Modelling using Smart PLS v3.2.8 were used for data analysis.

## IV. DATA ANALYSIS

### A. Demographic profile of Respondents

Overall, about 79 per cent of the respondents were males, 62 percent were married, 60 per cent were in the age group 25 to 35 years, 43 of the respondents were undergraduates and 39 per cent of them had an annual income of `50000- `75000. About 53 per cent of the respondents were having experience between 5 to 10 years.

### B. Validation of Model through PLS-PM

The hypotheses presented were tested using PLS, which provides beta coefficients that can be interpreted in the same manner as the OLS regression coefficients. Using PLS, the study hypotheses were tested by examining the direction, size and significance of the paths from independent variables to dependent variables. Significance of the paths was examined using Bootstrapping technique. The construct level correlation has been presented in table 1. It exhibits that there exists a positive correlation between KMP and FP ( $r=0.579$ ), KMP and NFP ( $r=0.643$ ), KMP and OP ( $r=0.645$ ).

TABLE I  
CONSTRUCT LEVEL CORRELATION

Independent Variable	Dependents Variables	Pearson Correlation
Knowledge Management Practices	Financial Performance	0.767
	Non-Financial Performance	0.517
	Operational Performance	0.611

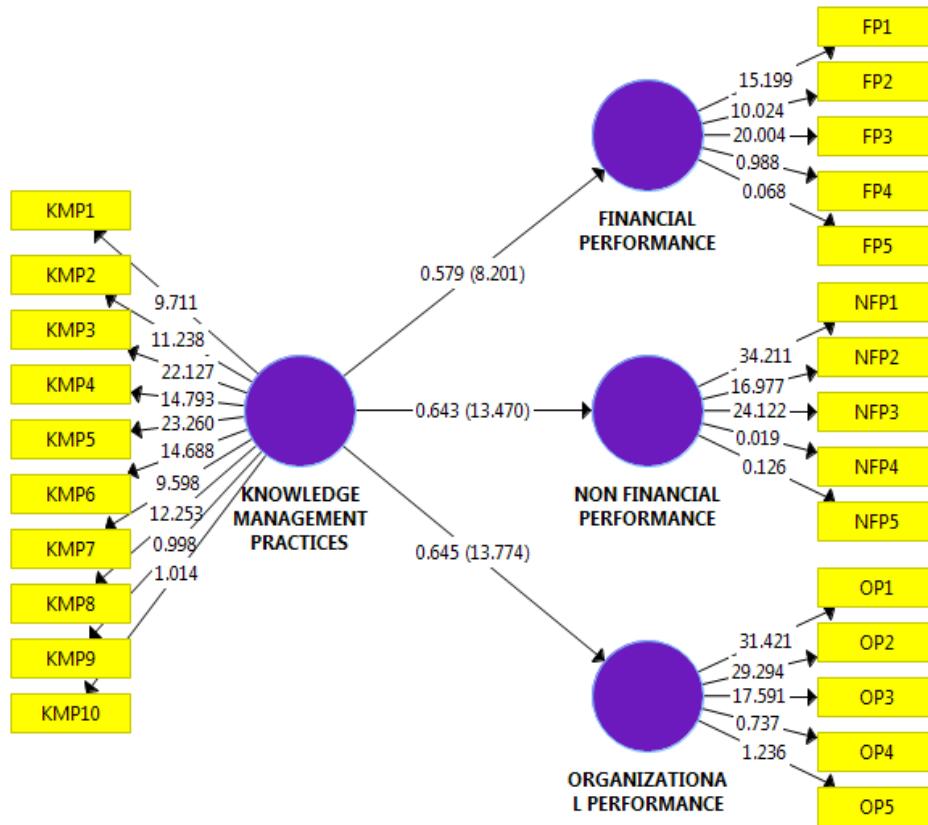


Fig 2 Path diagram using SEM Showing T, Beta values.

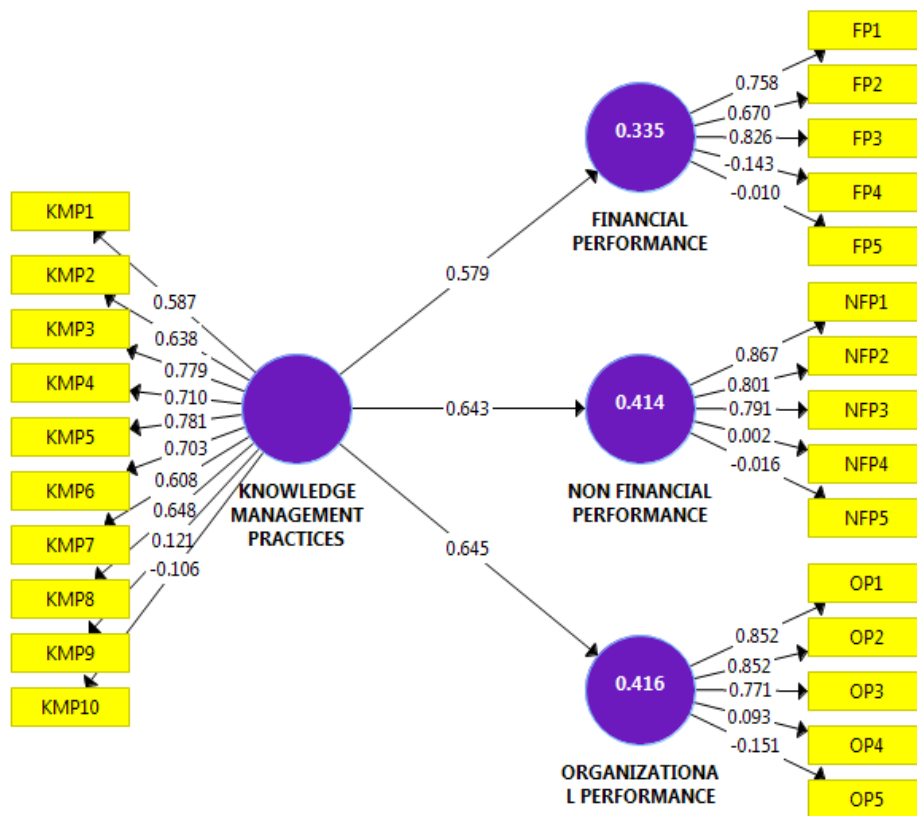


Fig 3 Path diagram using SEM Showing R.Square

TABLE II  
BOOTSTRAP SUMMARY

Hypothesis	Entire sample estimate	t-statistic	R square value
KMP→FP	0.579	<b>8.161</b>	0.335
KMP → NFP	0.643	<b>13.146</b>	0.414
KMP →OP	0.645	<b>13.968</b>	0.416

### C. Hypotheses Results

*H1: Knowledge Management Practices has significant positive impact on Financial Performance.*

As In Fig 2,3 and Table 2, since the path linking KMP to FP was found to be significant at 0.05 level (beta=0.579, t=10.945), indicating Knowledge management practices has a significant effect on improving Financial performance of the company.

*H2: Knowledge Management Practices has significant positive impact on Non- Financial Performance.*

Since the path linking KMP to NFP was found to be significant at 0.05 level (beta=0.643, t=9.321), indicating Knowledge management practices has a significant effect on improving Non-Financial performance of the company.

*H3: Knowledge Management Practices has significant positive impact on Operational Performance.*

Since the path linking KMP to FP was found to be significant at 0.05 level (beta=0.645, t=7.361), indicating Knowledge management practices has a significant effect on improving Operational performance of the company. To add further, KM practices explain the variation of 39.3% in financial performance, 34.9% in non-financial performance and 28% in operational performance.

## V. FINDINGS AND RECOMMENDATIONS

### A. Findings

Organisation identifies required knowledge and connect it with objectives to identify knowledge gaps. Periodic tests are conducted to diagnose employee's knowledge. Organisation provides multiple sources of information and knowledge to enable workers to acquire knowledge. Organisation offers the latest technical means for its staff to gain modern knowledge. Organisation encourages teamwork among its staff to generate new ideas and experiences. Organisation is benefited from the global IT sectors to generate new knowledge. Organisation provides high technology that contributes to the effective participation of knowledge. Organisation has special systems for storing and documenting knowledge. Organisation knowledge storing system is defined as an effective system. Organisation systems and procedures have enough flexibility. Firm's net profits are on the rise. Firm's profit to revenue ratio is high. Firm's return on assets is quite good. Firm's revenue growth is good. Firm's capacity to develop a competitive profile is good. Firm's new products development is on the rise. Firm's market orientation is quite good. Firm's investments in R&D are Firm's market development is visible. Knowledge Management practices have significant effect on financial performance, non-financial performance and operational performance of the company.

### B. Recommendations

Since the organisation performance is improved due to implementation of knowledge management practices. However the employees should be motivated to follow the knowledge management practices and to innovate various new products. So that we can ensure the successful implementation of knowledge management practices in all the areas of organisation.

### C. Limitations and Future Research

The study is limited to one particular IT-Sector in a district. So the findings of the study may not be generalized. The Study has examined the effect of Knowledge management on organisational performance, but the factors which determine the Knowledge management behaviour, are not taken into account in detail. So the future studies can be undertaken as follows. Knowledge Management Practices and Employee Motivation and Knowledge Management Practices and Psychological behaviours.

## VI. CONCLUSION

To conclude with, the purpose of this study was to investigate the associations between KM practices and organizational performance in IT-Sector. A sample of 171 Software Engineers were taken, who practices KM from leading IT-Sector in a district. A model is developed and tested using Structured Equation Modelling. The empirical findings have revealed that KM practices greatly influences the financial, non- financial and operational performance of organization. It is concluded that KM practices highly determines the overall performance of the organization which in turn, will encourage the top level management to enhance their investment in the field of KM infrastructure.

## REFERENCES

- [1] Bagozzi, R.P. and Yi, Y. (1988), "On the evaluation of structural equation model", *Journal of Academy of Marketing Science*, Vol. 16 No. 1, pp. 74-94.
- [2] Bandura, A. (1986), *Social Foundations of Thought and Action: A Social Cognitive Theory*, Prentice-Hall, Englewood Cliffs, NJ.
- [3] Bartol, K. and Srivastava, A. (2002), "Encouraging knowledge sharing: the role of organizational reward systems", *Journal of Leadership and Organization Studies*, Vol. 19 No. 1, pp. 64-76.
- [4] Bock, G.W., Zmud, R.W. and Kim, Y.G. (2005), "Behavioral intention formation in knowledge sharing: examining the roles of extrinsic motivators, social-psychological forces, and organizational climate", *MIS Quarterly*, Vol. 29 No. 1, pp. 87-111.
- [5] Browne, M.W. and Cudeck, R. (1993), *Alternative Ways of Assessing Model Fit*, Sage Publications, Newbury Park, CA.
- [6] Connelly, C.E. and Kelloway, E.K. (2003), "Predictors of employees' perceptions of knowledge sharing culture", *Leadership & Organization Development Journal*, Vol. 24 No. 5, pp. 294-301.
- [7] Constant, D., Kiesler, S. and Sproull, L. (1994), "What's mine is ours or is it? A study of attitudes about information sharing", *Information Systems Research*, Vol. 5 No. 4, pp. 400-21.
- [8] Darroch, J. and McNaughton, R. (2002), "Examining the link between knowledge management practices and type of innovation", *Journal of Intellectual Capital*, Vol. 3 No. 3, pp. 210-22.
- [9] Davenport, T. and Prusak, L. (1998), *Working Knowledge*, Harvard Business School Press, Cambridge, MA.
- [10] Davenport, T. H., & Glaser, J. (2002). Just-in-Time delivery comes to knowledge management, *Harvard Business Review*, 80(7), 107-111.
- [11] Davenport, T. H., De Long, D. W., & Beers, M. C (1998). Successful knowledge management projects. *Sloan Management Review*, 39(2), 43-57.
- [12] Dougherty, Deborah, and Cynthia Hardy. "Sustained Product Innovation in Large, Mature Organizations: Overcoming Innovation-to-Organization Problems." *The Academy of Management Journal*, vol. 39, no. 5, 1996, pp. 1120-1153
- [13] Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge Management: An Organizational Capabilities Perspective. *Journal of Management Information Systems*, 18(1), 185-214.
- [14] Gold, AH, Malhotra, A & Segars, AH 2001, 'Knowledge management: an organizational capabilities perspective', *Journal of Management Information Systems*, vol. 18, no. 1, pp. 185-214.
- [15] Jenny, D. (2005). Knowledge management, innovation and firm performance. *Journal of Knowledge Management*, 9(3), 101-115.
- [16] Liao, S., & Wu, C. (2009). The Relationship among Knowledge Management, Organizational Learning, and Organizational Performance. *International Journal of Business and Management*, 4(4), 64-76.
- [17] M., M. A. (2011). Knowledge management and organizational performance: a decomposed view. *Journal of Knowledge Management*, 15(1), 156-171.
- [18] Morrow, N. Mac. (2001). Knowledge Management: An Introduction. *Annual Review of Information Science and Technology*.
- [19] Obeidat, B. Y. (2016). The Effect of Strategic Orientation on Organizational Performance: The Mediating Role of Innovation. *International Journal of Communications, Network and System Sciences*, 09(11), 478-505
- [20] Pentland, B. T. (1995) *Information Systems and Organisational Learning: The Social Epistemology of Organisational Knowledge Systems*, *Accounting, Management & Information Technology* (5:1), pp. 1-21.
- [21] Pinto, Mário. (2014). Knowledge Management in Higher Education Institutions: A framework to improve collaboration. *Iberian Conference on Information Systems and Technologies, CISTI*. 10.1109/CISTI.2014.6876876.
- [22] Serenko, A., & Dumay, J. (2015). Citation classics published in Knowledge Management journals. Part II: studying research trends and discovering the Google Scholar Effect. *Journal of Knowledge Management*, 19(6), 1335-1355.
- [23] Sharp, D. (2003). Knowledge management today: Challenges and opportunities. *Information Systems Management*, 20(2), 32-37.
- [24] Venkatraman, N., & Ramanujam, V. (1986). Measurement of Business Performance in Strategy Research: A Comparison of Approaches. *Academy of Management Review*, 11(4), 801-814.
- [25] Wilson, E. V., & Lankton, N. K. (2004). Interdisciplinary research and publication opportunities in information systems and health care. *Communications of the AIS*, 14(17), 79-84.