

Application of Knowledge Management in The Sudanese Universities: An Analytical Study

Elzain Elkhalefa Elkhder¹, Bannaga Taha Al-Zubair², El-Rusheed Habboub Mohammed³, Saifaldin Idris Onia⁴

Foundations of Education and Educational Administration Department, Faculty of Education, University of Khartoum, Sudan.

*Corresponding Author: saifonia07@yahoo.com
<http://doi.org/10.33650/ijess.v1i1.3411>

Received: February 2022, Accepted: May 2022, Published: September 2022

Abstract:

Knowledge management (KM) is becoming a very important issue in higher education, which drives the ability to collect and analyze information, transform knowledge and apply novelties. Therefore, this paper aimed at introducing a framework of thoughts for applying knowledge management in the Sudanese universities, depending on the analysis of the theoretical studies and the available literature related to the topic. In doing so, the researchers followed a qualitative and analytical type of research. To collect data, previous studies and papers, especially those related to higher education institutions are reviewed. The paper covered the basic concepts, definitions, justifications, and domains, besides the application of (KM) in the Sudanese universities. The main factors that can help in relieving difficulties facing (KM) are also discussed. The paper concluded that Sudanese Universities are considered the most suitable institutions to apply (KM), as they have a strong infrastructure that is favorable to the production and application of knowledge through the venues of investment in scientific research. The paper recommended the utmost necessity of adopting (KM) in the Sudanese universities as an approach to developing the individual and the official administrative to improve the level of outputs and to increase its capacity to adapt to all the prevalent changes and challenges. The use of knowledge management, according to this paper's inference, promotes staff members to advance both themselves and their universities by using this information to scientific research and studies.

Key Words: Knowledge management, Application, Sudanese Universities

INTRODUCTION

Nowadays, most higher education institutions are facing more challenges than ever before due to the rapid changes resulting from the huge information and technological revolution worldwide. Higher education institutions are heavily involved in knowledge activities; however, they are responsible for the creation, exchange, preservation, dissemination, re-use, and learning of knowledge (Tushar and Patil, 2019). Higher education institutions, in recent years, have been called a part of the knowledge society. Since the global market is a highly competitive arena, only those organizations can survive not only quickly create knowledge, but also acquire and apply

knowledge quickly. That is because such natural activity is the key source of sustainable growth and development.

Knowledge comes in three forms: explicit, implicit and tacit. Explicit is information in tangible forms, such as books, newspapers or scholarly articles. Implicit information, such as a doctor's notes dictated onto a video camera or a verbatim copy of an observation or narrative of an experience recorded in a news article or documentary, does not originate in a tangible form but can be converted into one. Tacit is information that is hard to capture in a tangible form; for example, a person's perception of an experience or someone's feelings after an earthquake may be difficult to express adequately in words. Hence, to increase the main source of knowledge and create knowledge in higher education, the role of knowledge management is considered critical (Mahdinezhad, et al., 2016).

Knowledge management (KM) is meant for the maximization of the organization's knowledge assets and guarantee more effective knowledge practices, improved organizational behavior and better performance through knowledge acquisition, creation, refinement, storage, transfer, sharing, and utilization (King, 2009). In order to more effectively accomplish their goals, individuals, teams, and entire organizations can produce, share, and apply information collectively and systematically through the practice of knowledge management. KM delivers outstanding collaboration to maximize the value of organizational information and knowledge assets leading to improved effectiveness and greater innovation (Bhusry, M., Nagar, R., & Ranjan, J., 2013).

Knowledge management (KM) helps higher education institutions to improve their capacity of gathering and sharing information and knowledge and apply these to problem-solving and support the research and continual improvement of their work. In addition to that, KM should reflect the severe competition by all institutions to keep in touch and adapt to these changes on a scientific basis (Al Osman, 2013). To deal with these changes, knowledge should be considered the most important strategic source that determines the success or failure of all institutions. Knowledge is becoming the most essential element of production and the real source of maintaining the capital value (Abu Khudair, 2009).

Knowledge management now is becoming a new management concept that attracts both private and public sectors. It is now considered to be a comprehensive scientific method aiming at the development of performance in all institutions for the sake of improving the quality of products and services (Razzougi, 2013). So, KM has proved to be the most effective in higher education institutions, particularly in the fields of industry, health, and production. For this reason, there are continuous calls for the application of knowledge management. It enables educational institutions to take decisions, provided that more care and attention are given to curricula development and scientific research coupled with better academic and administrative services,

and cost reduction (Higazi, 2005). Knowledge management is an institutional process aiming at the coordination and integration of information processing, besides, human resources and any related elements (Tahaiyna and Khaldi, 2015). It means the attaining, conserving, and application of knowledge for the sake of learning process development at the Sudanese higher education.

The development of Sudanese higher education has taken some phases as follows: Phase 1: 1900-1955: this phase marks the beginning of higher education in Sudan. In that period, three universities were established. The first one is the University of Khartoum which developed from Gordon Memorial College in the year 1902, which was first opened as an elementary school and be graded to a secondary school in the year 1913, and after that to Khartoum University College in the year 1955. Thereafter the name of the college was changed to be the University of Khartoum in the year 1956. Then, Omdurman scientific institute was established in 1912 and was intended to specialize in Islamic and Arabic studies. The institute developed to be a high institute offering programs at the university level. The institute, therefore, developed to be the Omdurman Islamic University in the year 1965. In the year 1951 Khartoum technological institute was established. It is considered to be the first technological institute in Sudan. Afterward, it developed to be Sudan University of Science and Technology in the year 1990. In the year 1955, and in accordance with the agreement between the Sudanese and Egyptian governments, Cairo University: Khartoum branch came into existence, which was afterward, named El-Neilen University (Ibrahim, 2010).

Phase Two: 1956-1969: this phase was characteristically important as it witnessed the national rule government for the first time. A considerable quantitative and qualitative extension took place at the University of Khartoum. The Omdurman scientific institute was upgraded to be the Islamic college in the year 1963, which subsequently upgraded to be Omdurman Islamic University in the year 1965. That period also witnessed the establishment of the first private university college: Al-Ahfad University College for girls in the year 1966.

Phase Three: 1970-1974: that period witnessed the organization of all high education institutions and the necessary regulations for the first time. Some institutions were also established in that period to take the role of supervision and planning of higher education in the country. In the year 1972, the national council for higher education was established to be responsible for planning and policymaking for all higher education in the country (Al-Huri, 1994).

Phase Four: 1975-1989: In that period, two new universities were established: Juba University in 1977, which was considered to be the first university outside the capital: Khartoum, and the Al-Jazzira university in Wad Madani, Al-Jazzira state in the year 1978. Studies were carried out at that time

with an aim of establishing more other public universities in other states particularly; The Northern region, Kordofan, Darfour, and the eastern region.

Phase Five: 1990-1994: That period marks the turning point in the history of higher education in the Sudan in general and public and private educations in particular, as a number of new universities were established in the different states, beside, establishing of university colleges and high scientific public and private institutions. This huge expansion was intended to serve a number of aims as follows: To meet the national demand for university education and the achievement of democratic opportunities in education. To meet the requirement of economic and social development plans. To raise that awareness of citizens and stress the principle of belonging and religious identity. To stress the principle of self-reliance in the sector of higher education instead of depending on foreign countries and donors. In addition, to relieve the pressure on the capital, Khartoum, and to improve the quality of education in the other states.

Consequently, the aims of Sudanese higher education, as cited in (Abdelrahim, 2014): higher education are intended to reflect the cultural heritage and belonging of all Sudanese. Training intellectual leaders in all human and technological, and vocational domains in the country's cultural heritage and civilization. To carry out applied scientific research for the sake of solving the country's problems, besides, developing a culture that can serve the societal needs in general and rural areas in particular. To serve society through conducting studies and consultations and participation in the specialized committees relating to progress and development issues, besides, sponsoring scientific meetings and conferences. To strengthen ties between higher education institutions and research partners outside the country. The Arabic language, to be the only language of teaching in all universities, and for all disciplines, besides, giving attention to the teaching of some live languages. To keep up with all new technology to advance higher education in the country. Considering the realities of Sudanese universities, there are two goals which can be said to be common in all of them. These are achieving scientific progress and the development of human knowledge through scientific research. Rending public services to all society members for the sake of raising cultural and vocational awareness (Ibrahim, 2010).

Additionally, there are problems with higher education in Sudan that include inadequate funding and rising educational costs, quantitative expansion of higher education institutions at the expense of quality, immigration of university staff, a tenuous connection between higher education institutions and the labor market, changes in the global economy, and the need of neighboring countries for Sudanese cadres with the necessary qualifications (Adam, 2011).

However, over the past decades, knowledge management (KM) has proven itself not as a trendy research movement but as a new discipline drawing a growing body of research around the world. It has been deemed a

new and influential approach in the science of management. It is KM, a new source of sustainable competitive advantage that makes organizations all over the globe redefine their business strategies (Ngoc-Tan, N., & Gregar, A., 2018). Knowledge management is becoming a very important issue in higher education, which drives the ability to collect and analyze information, transform knowledge and apply novelties (M. Bhusry and J. Ranjan, 2011). Knowledge Management attempts to manage explicit and tacit knowledge to govern what an organization knows (McCarthy, 2006). Hence, Universities and Higher Education Institutions (HEIs) today need to emphasize a lot on the development of the tools and techniques of KM. Application of knowledge management practices in Higher education can lead to better decision-making capabilities, reduced “product” development cycle time- curriculum development and research, improved academic and administrative services and reduced costs (Kidwell, 2000).

Therefore, the theoretical foundation of this research is based on Lee and Choi (2003) study. According to Lee and Choi (2003), Knowledge management can be classified into KM Enablers, KM Processes, and KM Intermediate Outcome. Knowledge management enablers can be classified according to a socio-technical theory. Socio-technical theory assumes that an organization or an organization work system can be described as a social-technical perspective. According to this perspective, we can identify that enablers are made up of two jointly independent but correlative interacting systems. The technical system is concerned with processes, tasks, and technology. The social system is concerned with attributes of people, relationships among people, reward systems, and authority structures. Organizational structure, organizational culture, and people are considered as a social system, and information technology is considered as a technical system in this study.

Paudel (2020) conducted a research to measure the level of KM among faculty members of HEIs. The study found that the overall pace of KM was high except for the knowledge generation process in the context of higher education. Due to individual differences and the organizational environment, culture, and technological infrastructure, it makes the level of knowledge generation differences comparing from other dimensions of knowledge management.

Zinzou, & Doctor, (2020) reviewed the status of knowledge management (KM) in the IQAN- member college and universities in Thailand based on the interpretation of the practice of their rank and file staff. This study was able to find out the majority of the staff know about KM and view it as essential and strategic part of their institutions. Mahmood, Iftikhar, Vistro, & Tariq (2020) discussed knowledge management already being used by the higher education institutes all around the world. Knowledge management depends upon some success factors. Five identified success factors are support from leadership, organization culture, processes and activities within the organization, use of technology and people.

Ogunbanwo, Okesola, & Sheryl, (2021) stated that knowledge is an essential resource to academic institutions, but its management especially in the developing countries has always been very difficult. KM model is developed in this study to manage institutional resources and make same available at the right time towards enhancing academic performance. The study framework is based on some established models and is integrated into the university process activities. Galgotia, & Lakshmi (2022) observed that knowledge developed in academic institutions is not adequately preserved or gathered, according to research. Despite the intensive research carried out on knowledge management (KM), the topic has not yet received enough attention, particularly in the educational sector. Knowledge management (KM) plays a dynamic role in the higher education institutions (HEIs) success, particularly through effective planning, organizing, monitoring, and coordinating the KM assets related to intellectual capital (Nair and Munusami, 2019). Rowley (2000) maintains that the university management needs to consciously and explicitly manage the processes associated with the creation of their knowledge assets to successfully manage the knowledge management initiatives and to recognize the value of their intellectual capital to their continuing role in society.

Hence, the present paper is considered the first one to be conducted in the Sudanese higher education setting. This study is intended to open avenues for more future research in the field of Sudanese Universities and other researchers. Therefore, this paper sought to identify the concept of (KM) in Universities, the justifications of applying (KM), the domains of (KM) application in the Sudanese Universities, besides the benefits of applying knowledge management in the Sudanese Universities.

RESEARCH METHODS

The nature of this study is purely qualitative and interpretive (analytical) type of research where selected papers are reviewed. Qualitative research focuses on phenomena that occur in natural settings and involve studying those phenomena in all their complexity (Leedy and Ormrod, 2001). Analytical research is a specific type of research that involves critical thinking skills and the evaluation of facts and information relative to the research being conducted. The selected papers are gathered through extensive literature review from academic papers representing an output of previous studies conducted by various researches concerning KM practices within higher education institutions.

Collecting data for this paper are gathered from previous studies, papers and researches concerning KM practices, especially those related to higher education institutions. These studies have been published in relevant websites over the Internet, which include scientific publications, periodicals, studies, scientific research.

Data analysis for this paper is conducted based on the theoretical studies by using some elements gathered within the KM practices in the higher education institutions such as; concept of KM, application of KM; and benefits of KM and details are discussed below.

RESULTS AND DISCUSSION

The Concept of Knowledge Management in Higher Education

The definition of knowledge management (KM) in the literature review is challenging due to the numerous conceptual origins of this study field. For instance, organizational knowledge includes personnel known as subject matter experts and information stored in devices (Richey et al., 2010). Knowledge management is a broad view of the structure and procedures which depend on the construction, assortment, storage, recovery, dissemination, and application of association knowledge which is an interdisciplinary change in the educational world, especially in administration (Lawson, 2003). It is a cluster of activities that enable institutions to generate knowledge and be able to select, apply, organize, and publicize it. Moreover, it means the transformation of knowledge with all that it includes products (Razzougi, 2003). Pircher & Pausits (2011) define knowledge management as a process that forms determining factors for employees to foster the transfer, development, and utilization of the knowledge of the organization (individual, organization, explicit, tacit) in the best possible way to be able to achieve the strategic aims of the organization.

According to Darroch (2003), the KM cycle is composed of three parts: gaining information, disseminating knowledge, and using knowledge. Alrawi (2008) believed KM involves three perspectives emerged, information-based, technology-based, and culture-based. Ho (2009) therefore supported this point of view by saying that KM is result-oriented, process-oriented, technology-oriented, culture-oriented, and HR-oriented and enabled by four main enablers viz., leadership, culture, technology, and measurement. Plessis (2007) describes KM as a structured structure method for managing the development, sharing, processing and leveraging of information as an organizational asset to improve the capacity, speed and effectiveness of a company to produce products or services in line with its business strategy for the benefit of its clients.

Cheng (2014) defines knowledge management (KM) as a systematic and integrative process of coordinating the organization-wide activities to retrieve, use, share, create and store knowledge, actionable information and expertise of individuals and groups in pursuit of organizational goals. Therefore, knowledge management is a collaborative and integrated approach adopted at various levels to ensure that an organization's knowledge assets are best utilized to increase organizational performance (Agarwal and Marouf, 2014).

Kidwell (2000) stated that the application of (KM) at Universities can be justified as most universities have adequate information infrastructure. Sharing knowledge with others is considered to be something natural, particularly

between university staff lectures, and students. It is one of the natural requirements that all enrolled students want to fulfill is the attainment of knowledge from accessible sources in a short period of time. Universities always create a favorable organizational climate and atmosphere which is inductive to trust, and therefore, any member of the university will not hesitate to publish the knowledge which he or she has.

Harb (2013) mentioned that the objectives of (KM) the development of intellectual and knowledge resources available to all institutions. The improvement of employees' skills in applying and using knowledge, besides, rewarding those who have workable knowledge. The attraction of the intellectual capital and skills to be utilized to raise the quality of performance in a particular institution. Building a database that can be retrieved when necessary and at the right time. It shares improving the institutions' effectiveness which may save money and effort. It facilitates the process of knowledge exchange between employees in a particular institution. The collection of bright and recognized ideas can be published for the use of any institution. The application of modern technologies within the institution. Hence, the domains of (KM) application at Universities are scientific research, curricula and programs' development, students and graduates services and activities, and strategic planning.

Application of knowledge management at Universities

There are three reasons for applying knowledge management (KM) in higher education institutions (HEIs). First, the HEIs by nature are knowledge-intensive organizations and they are recognized to be in the knowledge business since knowledge production, distribution and application are ingrained in them. Second, the unprecedented growth of HEIs, in which the number has been doubled, compelled with the increasing intakes by the institutions, both public and private. Third, the recent issues of the quality of courses offered by the various HEIs have been very important to the nation. Supporting this view, Nilsook and Sriwongkol (2009) said KM has three objectives in higher education: firstly, to develop tasks for better quality and efficiency; secondly, to develop human resources at all operational levels; and thirdly, to develop knowledge bases of organizations or sectors for the organizations' enhanced knowledge investment or wisdom investment. Kidwell et al. (2000) argue that KM is vital to the higher education institution, bringing crucial benefits to educational institution processes such as research, curriculum development, student and alumni services, administrative services and strategic planning. Mikulecky and Mikulecka (1999) believed that, by its nature, the university environment is suitable for the application of KM principles and methods. This can be explained by the following reasons: (i) universities usually possess modern information infrastructure, (ii) knowledge sharing with others is natural for lecturers, and (iii) students to desire to acquire knowledge from

accessible sources as fast as possible. However, some researches have been done on how to apply KM at universities (Mazhar, & Akhtar, 2016).

Moreover, several studies have been conducted on the application of knowledge management at universities, such as Nair and Munusami (2019) conducted a study to investigate KM practices that may be in place in higher education institutions (HEIs) and whether employees are made aware of KM practices to improve the teaching and learning environment provided by Malaysian higher education institutions. It was essential to establish the knowledge management (KM) capacity in key areas such as the ability to recognize experts within the institution, leadership's innovation, knowledge sharing and knowledge acquiring work culture, and technology usage. KM tools and techniques would help the institutions to meet their competitive goals; therefore, HEIs need to create KM awareness among the employees. Razi, et al. (2019) conducted a study to understand the KM behavior and its predictors among academicians in an HLI in Malaysia by operationalizing the KM behavior. They concluded that many academicians perceived that the existence of trust among colleagues, the high-performance expectancy of KM, and less effort expectancy of KM would more likely influence their involvement in KM.

Munadi, Ernawati, and Hakiman (2018) conduct a study aimed to determine the system of implementation of KM in Islamic higher education. The successful implementation of KM requires support from stakeholder policies in educational institutions. The research findings provide a summary of KM's implementation architecture, which academics and stakeholders in educational institutions can use as a tool to improve the effectiveness of expertise. Charles and Nawe (2017) examined the knowledge management (KM) practices in Institutions of Higher Learning. The study specifically explored KM's level of awareness and understanding among staff at Mbeya University of Science and Technology (MUST) and established knowledge management practices in addition to seeking staff perceptions and opinions on current KM practices. The study's key results found that MUST workers were not fully aware of KM practices; there were no knowledge management programs in effect at MUST; in addition, few or no techniques were used in Knowledge Management; and there was no agreed-upon process for knowledge sharing.

Al-Tahaina & Khaldi (2015) aimed at estimating the degree of application of (KM) process in physical education colleges in the Jordanian universities, regarding the statistical differences in application due to the variables of sex, experience, and academic status. The results revealed that the degree of (KM) application had been generally high. With regard to the order of domains, the (KM) domain name is at the top, followed by the domain of conservation and organization of knowledge.

Yaakub, Othman, and Yousif (2014) carried out a study to review the KM practices in Malaysian High Learning Institution (MHLI) to highlight the functional features of its application. The method applied here is purely qualitative whereby five selected cases were viewed and analyzed in identifying the KM elements that had been practiced by the institutions under study. The findings of the study indicate that KM practices in MHLI have not yet become formative and capable of standing alone without the unwavering support from the top management. A formative norm of KM practices needs to be created in MHLI to enable a systemic realignment of practices within their infrastructure and strategic activities.

Bhusry, Ranjan & Nagar (2012) explore the functional domains of HEIs and the indicators that determine these domains. In addition, the authors evaluated the functional domains for IT-based knowledge management (KM) intervention and defined the perceived benefits. The authors suggested a conceptual framework for the efficient identification, encapsulation, structuring, distribution, and use of organizational information towards the organization in order to improve the outcomes. If the framework is implemented, the authors feel it will result in an enhanced transformation of organizational knowledge into decision-making and actions. Therefore, a successful Knowledge Management implementation requires that senior management understands the organization's needs with a clear vision for its future, a grasp of the range of technologies available for enabling the KM process that applies the organization's business and experience (Bergerson, 2003).

In their research, Zaki and Zubairi (2012) seek to compare the novel trend of information management with existing quality higher education practices as prevalent in underdeveloped countries such as Pakistan through its working context. Empirical witnesses proved that if applied properly, the presence of knowledge framework (s) enhances the overall learning practices in academia effectively which contributes to maintaining the quality practices as well. Besides, Mohammadi et al. (2009) described that implementing knowledge management in an organization requires significant organizational prerequisites. Lacking proper infrastructures and prerequisite, not only make the knowledge management process unsuccessful but might incur harmful effects as well. To decrease such risks, the study proposed to introduce the readiness assessment, to gauge a company's appetite for the work involved in implementing knowledge management.

Benefits of applying knowledge management at Universities

Ghalib (2007) stated that the benefits of applying knowledge management at universities are the conservation of experiences and expertise in the institution. Knowledge is the key to any institution's progress. It is what gives value to it. Also, bridging the gap between experts in the institution and

the newly appointed staff. Learning from the past lessons to avoid repeating mistakes of the past. It helps in specifying the available administrative opportunities. Institutions, being reconstructed, a lot of effort and money can be saved. It opens avenues for investing in the available knowledge at the time. Besides, it can be of great use to set a clear vision for the particular institution.

Bidair (2015) added that the significance of (KM) at Universities represents the development of universities' administration to be more adapted to modern trends and needs. It is a call for a new culture of quality and participation in knowledge at all universities. The application of the available knowledge at universities for the sake of more improvement and development. Restoring employees' ideas, thoughts, and accumulative experiences. The development of knowledge assets through regular training of all universities staff. KM is significantly important as it bridges the gap inside universities' administrations. Cost and effort reduction, besides, boosting, the Universities' ability to continue. It gives universities a continuous mark of excellence. It increases the capacities of universities to cope effectively with future changing conditions.

Furthermore, the benefits of applying (KM) at Universities can be summarized as follows: It enables all universities to achieve more organizational effectiveness through developing their available resources. It increases the capacities of universities of competition, excellence, and sustainability. It can considerably share in shaping the productive university model. It considerably facilitates joint research efforts in the domain of multi and interdisciplinary studies. It allows opportunities for improving the level and effectiveness of internal and external services related to scientific research. It accelerates efforts to review and adapt curricula in general. It consolidates the efforts of the teaching staff and the prospective ones in particular. It improves the administrative services related to teaching and learning using modern technologies. It increases the capacity of all universities of monitoring all improvement and development efforts in the domain of rendered services. It can be a great help to all universities in areas such as decentralization, strategic planning, and decision-making.

CONCLUSION

According to what has been discussed in this paper, it is clear that KM is one of the modern administrative trends, which is being adopted by universities to improve the effectiveness of administrative performance and to increase the university's ability to adapt and cope with the fast changes in the surrounding environment, and to keep their intellectual capacity. Besides, increasing the capacity of the University of creating and developing services and products. Hence, the university staff members represent the focal element in (KM) as they produce and handle knowledge.

Moreover, the concept of (KM) at universities refers to all technological and human practices and activities that aim at getting all employees in the institution together in the form of teams or workgroups to build more relations and trust between them. Through such participation and exchanged experiences, more learning can be enforced at an individual and group level. This will automatically develop and improve practice and performance at the individual and organizational levels. It also refers to all regular processes that can enable educational institutions in generating, organize, apply, and publicize knowledge and make it available to those who need it, be it inside the institution or outside it. Furthermore, the obstacles that face (KM) in the Sudanese universities is the low level of participation of employees in decision making and excessive centrality. The complicated administrative procedures, and the weakness of implicit knowledge (experience, skills, and innovations). Not making use of what is available of knowledge.

Besides, the paper recommended the utmost necessity of adopting (KM) as an approach to developing the individual and the official administrative as to the improve level of outputs, and to increase of its capacity to adapt with the commanding environment with all the prevalent changes and challenges. Also, the necessity of arranging regular meets in the academic department in which experiences and distinguished practices are presented and be shown in all various domains of (KM). The necessity of arranging symposiums, lectures, workshops, training courses, and conferences on (KM) in order to raise the awareness of university teaching staff about the meaning of (KM), its procedures, and its role in improving the quality of performance. Encouraging scientific research and studies and making use of staff members' experiences for the sake of developing knowledge.

ACKNOWLEDGEMENT

This paper could not have been done without the help of the Library of the Faculty of Education, University of Khartoum.

REFERENCES

- Abdelrahim. (2014). *Higher Education planning in view of Manpower Training*. Unpublished Ph.D Thesis, University of Khartoum.
- Abdullah and Selamat . (2005). A framework for knowledge management system implementation in collaborative environment for higher learning institution. *Journal of Knowledge Management Practice*, 6(1), 1-8.
- Abu Khudair. (2009). *Knowledge Management Application in Higher Education Institutions: Ideas and Practices*. The international conference for Administrative Development towards Excellent Performance in the Public Sector, General Administration institute, Riyadh.

- Adam. (2011). Educational Planning and its Role in Shaping the Social Identity in the Sudan. *Journal Educational reconstruction*, Edition No.8, Ministry of General Education, Khartoum.
- Agarwal and Marouf. (2014). Initiating knowledge management in colleges and universities: A template. *International Journal of Knowledge Content Development & Technology*, 4(2), 67-95.
- Ahmadi A. A., & Ahmadi, F. (2012). Knowledge Management in Iranian University (Case Study Shushtar University). *Interdisciplinary Journal of Contemporary Research in Business*, 4(5), 653-667.
- Akhavan, P., Dastranj, N. (2011). Investigating Organizational Readiness of Knowledge Management Implementation by Considering Knowledge Management Effective Success Factors. *Information Science & Technology*, 26(3), 493-517.
- Almudallal, S. N. Muktar & N. Bakri (2016). Knowledge management in the Palestinian higher education: A research agenda. *International Review of Management and Marketing*, 6(4), 91-100.
- Al Osman. (2013). *The Situation of (K.M) Application in Naif University for Security Sciences*. M.A. dissertation, Administrative Sciences College, Naif University for Security Sciences.
- Al-Huri. (1994). *Employment of Graduates and its Effect on Higher Education Planning in the Sudan*. Published ph.D thesis, University of Khartoum.
- Alrawi. K.W. (2008). Knowledge management and organizations perception in the United Arab Emirates. *International Journal of Commerce and Management*, 18(4), 382-394.
- Al-Tahaina & Khaldi . (2015). (K.M) Application in Physical Education Colleges in Jordanian Universities. *Journal of Educational Science*, 42(2), 132.
- Bergerson. (2003). *Essential of Knowledge management*. New Jersey, Canada: John Wuley & Sons Inc.
- Bhusry, M., & Ranjan, J. (2011). Knowledge collaboration in higher educational institutions in india: Charting a knowledge management solution. *International Journal of Computer Science Issues (IJCSI)*, 8(5), 332.
- Bidair. (2015). Development of Egyptian University Education Administration in View of (K.M): An Analytical Study. The Egyptian Society for Comparative Education and Educational Management. *Journal of Educational Administration*, 6th year, Edition No.5, Cairo.
- Charles and Nawe . (2017). Knowledge Management (KM) Practices in Institutions of Higher Learning in Tanzania with Reference to Mbeya University of Science and Technology. *University of Dar es Salaam Library journal*, 12(1), 48-65.
- Darroch, J. (2003). Developing a measure of knowledge management behaviors and practices. *Journal of Knowledge Management*, 7 (5), 41-54.
- Farooq, R. (2018). Developing a conceptual framework of knowledge management. *International Journal of Innovation Science*.

- Galgotia, D., & Lakshmi, N. (2022). Implementation of Knowledge Management in Higher Education: A Comparative Study of Private and Government Universities in India and Abroad. *Frontiers in Psychology*, 3419.
- Ghalib, Saad, (2007). *(K.M): Concepts, systems, and technologies, curricula*. Publishing House, 1st .edition, Jordan.
- Harb. (2013). K.M Application in Universities for the Achievement of Excellence in Educational Research. *Journal of College of Education*, University of Alexandria.
- Higazi. (2005). *(K.M) A Theoretical Approach*. Al-Ahlia for Publication and Distribution, Amman, Jordan.
- Ho, C. T. (2009). The relationship between knowledge management enablers and performance. *Industrial Management & Data Systems*, 109(1), 98-117.
- Ibrahim, H. (2010). *Education Planning Progress in the Sudan*. The National Library, Khartoum.
- Kabilwa, S., & Maasdorp, C. (2017). Determining the State of Knowledge Management in Higher Education Institutions in Zambia: An Exploratory Study of Public Universities. *The International Journal of Multi-Disciplinary Research*, 1-10.
- Kidwell, J. J., Vander Linde, K., & Johnson, S. L. (2000). Applying corporate knowledge management practices in higher education. *Educause quarterly*, 23(4), 28-33.
- King, W. R. (2009). *Knowledge management and organizational learning*: Springer.
- Lawson, S. (2003). *Examining the relationship between organization culture and knowledge management*. Doctoral Thesis, H. Wayne Huizenga School of Business and Entrepreneurship Nova Southeastern.
- Lee, H., & Choi, B. (2003). Knowledge management enablers, processes, and organizational performance: An integrative view and empirical examination. *Journal of management information systems*, 20(1), 179-228.
- M. Bhusry, Ranjan, J., & Nagar, R. (2011). Implementing knowledge management in higher educational institutions in India: a conceptual framework. *International Journal of Computer Applications*, 29(1), 34-46.
- Mahdinezhad, M., Musa, K. (2016). Knowledge Management: A Process for Knowledge-Sharing in Educational Environment. *International Journal of Academic Research in Business and Social Sciences*, 6(11), 166-174.
- Mahmood, Z., Iftikhar, W., Vistro, D. M., & Tariq, H. I. (2020). An examination of the use of knowledge management/knowledge management systems in achieving and sustaining competitive advantage in higher education institutes: a case study of Asia Pacific University, Malaysia. *International Journal of Scientific and Technology Research*, 9(4), 3653-3658.
- Mansour, I. (2012). *The Role of K.M in Higher Education Quality reassurance: Case study of Ghazza Islamic University*. M.A Dissertation, College of Trade, Islamic University, Gazza.

- Maponya, P. M. (2004). Knowledge management practices in academic libraries: a case study of the University of Natal, Pietermaritzburg Libraries. Information Studies Programme, School of Human and Social Studies, University of KwaZulu-Natal, Pietermaritzburg, South Africa Academia.edu.
- Mazhar, & Akhtar. (2016). Knowledge management practices: A Comparative study of public and private sector universities at Lahore. *Journal of Quality and Technology Management*, 12(1), 81-90.
- McCarthy, A. F. (2006). *Knowledge management: Evaluating strategies and processes used in higher education*. Nova Southeastern University.
- Mikulecky and Mikulecka. (1999). Active tools for better knowledge dissemination. In *ASIS 1999 Annual Meeting* (pp. 420-427). Washington DC.
- Mládková, L. (2011). Knowledge management for knowledge workers. University of Economics Prague, Czech Republic: Academic Publishing International Ltd, 248-258.
- Mohammadi, K., Khanlari, A., & Sohrabi, B. (2009). Organizational readiness assessment for knowledge management. *International Journal of Knowledge Management (IJKM)*, 5(1), 29-45.
- Munadi, M., Ernawati, F. (2018). The Reality of Knowledge Management in Islamic Higher Education. *Jurnal Pendidikan Islam*, 7(2), 225-237.
- Nair, B., & Munusami, C. (2019). Knowledge management practices: An exploratory study at the Malaysian higher education institutions. *Journal of Research in Innovative Teaching & Learning*. 17 (8), 25-43.
- Naser, , M. J. Al Shobaki, Y. M. A. Amuna (2016). measuring knowledge management maturity at HEI to enhance performance-an empirical study at Al-Azhar University in Palestine. *International Journal of Commerce and Management Research* Volume 2; Issue 5; pp. 55-62.
- Ngoc-Tan, N., & Gregar, A. (2018). Impacts of Knowledge Management on Innovation in Higher Education Institutions: An Empirical Evidence from Vietnam. *Economics and Sociology*, 11(3), 301-320. doi:10.14254/2071-789X.2018/11-3/18.
- Nilsook and Sriwongkol . (2009). The Development of Multi-weblog with Knowledge Management for Thailand's Higher Education. In *Information and Multimedia Technology, 2009. ICIMT'09. International Conference on* (pp. 315-318).
- Nunes, J. M., Kanwal, S., & Arif, M. (2017). Knowledge management practices in higher education institutions: A systematic literature review. *Creative Commons Attribution*, 4, 1-16.
- Ogunbanwo, A. S., Okesola, J. O., & Sheryl, B. (2021, February). Knowledge management conceptual framework in Nigeria tertiary institutions. In *IOP Conference Series: Earth and Environmental Science* (Vol. 655, No. 1, p. 012010). IOP Publishing.

- Ojo, A. (2016). Knowledge management in Nigerian universities: A conceptual model. *Interdisciplinary Journal of Information, Knowledge, and Management*, 8(11) 31-34.
- Patel, T. R., & Patil, A. N. (2016). Review of knowledge management in higher education. *International Journal of Science and Research (IJSR)*, 4(11), 2062-2065.
- Paudel, K. P. (2020). Level of Knowledge Management among Faculty Members in the Context of Nepali Higher Educational Institution. *Dhaulagiri Journal of Sociology and Anthropology*, 14, 124-130.
- Pinto, M. (2014, June). Knowledge management in higher education institutions: a framework to improve collaboration. In *2014 9th Iberian Conference on Information Systems and Technologies (CISTI)* (pp. 1-4). IEEE.
- Pircher, R., & Pausits, A. (2011). Information and knowledge management at higher education institutions. *Management Information Systems*, 6(2), 8-16.
- Plessis. (2007). The role of knowledge management in innovation. *Journal of Knowledge Management*, 11(4), 20-29.
- Razi, M. J. M., & Habibullah, M., & Hussin, H. (2019). Knowledge management behavior among academicians: The case of a Malaysian higher learning institution. *Journal of Information and Communication Technology*, 18(2), 183-206.
- Razzougi, M. (2003). *Future Vision of Information Specialists Role in (K.M)*, the Thirteenth Conference for Libraries and Information, Arab Union. (K.M) in digital Environment), Arab League for Education and culture and Science, Libraries and information, Arab Union, Tunisia.
- Richey, R.C., Klein, J.D. and Tracey, M.W. (2010). *The Instructional Design Knowledge Base: Theory, Research, and Practice*, Routledge, New York, NY.
- Rowley, J. (2000). Is higher education ready for knowledge management?. *International journal of educational management*, 14(7), 325-333.
- Tushar, T. R., & Patil, A. N. (2019). Review of Knowledge Management in Higher Education Institute. *IJRAR-International Journal of Research and Analytical Reviews (IJRAR)*, 6(1), 341-345.
- Yaakub, M. B., Othman, K., & Yousif, A. F. (2014). Knowledge management practices in Malaysian higher learning institutions: A review on selected cases. *International Journal of Education and Research*, 2(1), 1-10.
- Zaki, A. R., & Zubairi, S. A. (2012). Role of Knowledge Management in Higher Education—A Qualitative Model. *Interdis J Contem Res. Bus*, 4(3), 1104-18.
- Zinzou, E. F., & Doctor, T. R. (2020). Knowledge Management Practices among the Internal Quality Assurance Network (IQAN)-Member Higher Education Institutions (HEIs) in Thailand. *World Journal of Education*, 10(5), 108-121