

# KNOWLEDGE MANAGEMENT AND 21<sup>ST</sup> CENTURY LIBRARIES AS PANACEA FOR SUSTAINABLE DEVELOPMENT

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## ABSTRACT

*The study examined knowledge management and 21st century libraries as panacea for sustainable development. With reference to thorough review of literature, the paper discussed issues like the rationale behind Knowledge Management (KM) in libraries in the 21<sup>st</sup> century, and looked at libraries contributions across the world to the Sustainable Development Goals (SGDs). Similarly, the study identified KM tools and technologies for sustainable decision making, and how to achieve sustainable development through 21<sup>st</sup> century libraries and the challenges hindering libraries from playing their roles in sustainable development. The study emphasised that Knowledge Management and sustainable development could be used to provide measure in achieving sustainability by 21<sup>st</sup> libraries*

**Keywords:** Knowledge management, 21<sup>st</sup> Century, Libraries, Sustainable development, Sustainable development goals.

## 1. INTRODUCTION

There is no doubt the fact that we are in the knowledge and information driven era where knowledge has become a key resource. Therefore, for all the players in the era to be well functioning, the knowledge needs to be properly managed. Knowledge is appropriately dynamic because it is constantly changing through experience and learning. It is a powerful force that can be used to overcome barriers, influence decision making, and generally “enable” and refresh individuals and organizations so that they can accomplish goals and complete work successfully (Stewart, 2001). Knowledge management is based on applying the fullness of an organisation’s knowledge to its decisions and this requires working hard to represent it, transfer it, make it accessible and encourage its use (Mupa et al. 2011). According to Quintas et al. (1997), KM is defined as the process of critically managing knowledge to meet existing needs, to identify and exploit existing and acquired knowledge assets and to develop new opportunities.



Notably, evolving information and knowledge has impacted all organisations, including libraries. This has made knowledge management become important. The conventional function of libraries irrespective of type is to collect, process, disseminate, store and utilise information to provide service to the community. This is because increased access to information and knowledge, underpinned by universal literacy, is an essential pillar of sustainable development. Knowledge management (KM) can bring about the much needed innovation, and transform tacit knowledge to explicit knowledge thereby contributing to sustainable development either at the individual or organizational levels.

In most of our organisations nowadays, education, political, information, health, commercial, research and so on; there are established libraries to take care of the information needs of the key stakeholders and especially manage the available knowledge being created in such organisations. Unfortunately, it has been observed that there are very few links between most of these institutions and private enterprises, non-government organisations and administrative structures and organisations; yet knowledge management of available knowledge in these organisations is required to bring about growth and sustainable developments in their environments. It is also unfortunate that in most of these organisations, despite having libraries, they are manned by non-experts; that is, people who are not librarians or information professionals who possess the knowledge and skills for managing the knowledge in such organization to enable sustainable development. Consequent upon this, many organisations are not growing because the existing knowledge in them are not managed the way they should in line with the 21<sup>st</sup> century expectations and development. This is premised on the fact that libraries which are supposed to be one of the key players or drivers of sustainable development, are not contributing anything tangible especially in Nigeria. The details of this reflect in the contents of this discussion. In fact, no existence of libraries in some organizations in Nigeria; and in those organizations that have libraries, their existence is not known and where it is known, their impact is not felt. Despite the fact that it was emphasized that within this quest for global sustainable development, the library sector should be a key-partner and active contributor. To be recognized as such by stakeholders, the library sector needs to promote libraries' role as development agents, namely by gathering evidences and evaluating their contribution to SDGs implementation. It is on this note that this paper seeks to discuss knowledge management and 21<sup>st</sup> century libraries as panacea for sustainable development. To achieve this therefore, the paper establishes the importance and key issues of promoting sustainability through knowledge management (KM) in libraries. The paper discusses issues like the rationale behind KM in libraries in the 21<sup>st</sup> century, libraries contribute across the sustainable development goals, KM tools and technologies used in sustainable decision making, achieving sustainable development through 21<sup>st</sup> century libraries and the challenges hindering libraries from playing their roles in sustainable development.



## **2. KNOWLEDGE MANAGEMENT AND SUSTAINABLE DEVELOPMENT CONCEPT**

Knowledge management can be seen as a systematic approach to manage the use of information in order to provide a continuous flow of right knowledge to the right people at the right time, enabling efficient and effective decision making in their everyday business (Teece, 2010). Knowledge management is a viable means in which libraries could improve their services in the knowledge economy (Maponya, 2004). This can be achieved through creating an organisational culture of sharing knowledge and expertise within the library. Knowledge and management of knowledge appear to be regarded as increasingly important features for organisational survival (Martensson, 2000). In addition, knowledge is a fundamental factor, whose successful application helps organisations deliver creative products and services. Today organisations are fundamentally different as compared to organisations that existed in one or two decades ago in terms of their functions, structures and style of management. Yu (2002) pointed out that organisations put more emphasis on understanding, adapting and managing changes and competing on the basis of capturing and utilising knowledge to better serve their markets. The central argument around which knowledge management revolves is that people hold a wealth of knowledge and experience that represents a significant resource for an organisation. Knowledge management, in the broadest sense, is a "trans-disciplinary approach to improving organisational outcomes and learning, through maximising the use of knowledge (Linger et al., 2013). It involves the design, implementation and review of social and technological activities and processes to improve the creating, sharing, and applying or using of knowledge" (Standards Australia, 2005). As such, KM is ideally suited to address the policy challenges as outlined above. A KM approach supports the consolidation of diverse information streams including formal (science) and informal (tradition, social norms, local lore), and provides the means to build a shared understanding of problems (natural resource management) and innovative solutions to those problems (sustainable management practices) involving all stakeholders.

As explained by deJung (2013), sustainable development was first defined in 1987 by the World Commission on Environment and Development (Brundtland Commission, 1987) as development which meets the needs of the present without compromising the ability of future generations to meet their own needs. The most commonly quoted definition of sustainable development stresses the meeting of needs and puts a clear focus on intergenerational equity along with responsibility in a broad sense. In September 2015, the adoption by United Nations Member States of the 2030 Agenda for Sustainable Development (UN, 2015) set the global, national and local framework for putting that responsibility into action. It is assumed based on the view of Yang et al. (2015), that KM can help build much needed industry consensus, develop capacity, communicate decisions, and promote specific measures for the pursuit of sustainability.

## **3. WHY DO WE NEED KM IN LIBRARIES IN THE 21<sup>ST</sup> CENTURY?**

Today, customers (users) are paramount in all types of organizations and libraries are essentially customer-oriented organizations. Their main objective is to provide the right information in the right format at the right time to the library customers. Knowledge



management (KM) provides libraries numerous opportunities to rise from stereo-type status and change their service delivery approach by establishing new alliances with users (organisational staff) and researchers in new creative and dynamic spaces to create a customer-centered environment (Jain, 2016). According to Roknuzzaman and Umemoto (2009), the major drivers of KM are increased value of knowledge in the knowledge economy; the library itself as a knowledge-based organization; the dynamics of technological advancement; and, opportunities for improved library practices. Knowledge generation and management is a collaborative process and social networking applications have provided ample prospects for both internal and external collaboration. Incorporating networked knowledge networks, librarians can create, manage and share tacit knowledge. Kaane (2009) has appropriately portrayed the importance of KM in libraries how they can improve their services through KM: by creating an organizational culture of sharing knowledge and expertise; change their values, focusing on creating and using intellectual assets (tacit, explicit and potential knowledge); restructure their functions; and expand their roles and responsibilities. Kaane (2009) further makes suggestion for adopting leadership that empowers individuals; organizational culture that appreciates all forms of knowledge, and, open communication culture that supports networking. All these can be used to improve library services using KM. Also, due to librarians' vast experience and inbuilt capabilities, librarians have strong desire to be knowledge managers. The contemporary library management is all about change management. Therefore, Maury (2012) describes a library as a living force because of its continuously evolving services to accommodate ever changing user needs; a catalyst for innovations; and as a learning and social place, where information and knowledge transmit for teaching and learning. Thus, KM has gained increased popularity in libraries today.

#### 4. LIBRARIES CONTRIBUTIONS TO SUSTAINABLE DEVELOPMENT

Within the broad *corpus* of sustainable development and sustainability evaluation, the literature review on the LIS / Sustainability topic and further application of an analytical tool led to the identification of three main approaches: one, aimed at greening libraries and reducing their environmental impact; other, anchored on culture as the fourth pillar of sustainability, largely driven by UNESCO; and another centred in libraries' contribution to global (sustainable) development goals, fostered by IFLA. Although these strains of thought and practice are frequently interrelated, for analytical purposes they were separated.

In the attainment of the Sustainable Development Goals (SDGs), it is believe that libraries have a critical role to play as individuals are given access to information without dichotomy and discrimination. Seeing a great potential in the role of libraries in achieving sustainable development, ministers and country representatives from Angola, Burkina Faso, Cape Verde, Cote D'Ivoire, Lesotho, Guinea, Madagascar, Malawi, Mozambique, Nigeria, South Africa, South Sudan and Swaziland came together in August 2015 to sign a declaration in support of providing the resources necessary to support the contribution of libraries in their nations (Bradley, 2016; IFLA, 2015). The



mandate was that each of these member nations should adopt the International Federation of Library Association and Institution (IFLA) tool kit and benchmarks in achieving the SDGs.

The seventeen SDGs were built on the Millennium Development Goals (MDGs) and call upon collaborative partnership between countries in balancing, economic growth, environmental sustainability and social inclusion for all (UN 2015). The seventeen SDGs goals of the Lyon Declaration (2015) are the following with targets aimed at all spheres of development:

- Goal 1: End poverty in all its forms everywhere
- Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- Goal 3: Ensure healthy lives and promote well-being for all at all ages
- Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- Goal 5: Achieve gender equality and empower all women and girls
- Goal 6: Ensure availability and sustainable management of water and sanitation for all
- Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all
- Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
- Goal 10: Reduce inequality within and among countries
- Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable
- Goal 12: Ensure sustainable consumption and production patterns
- Goal 13: Take urgent action to combat climate change and its impacts
- Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
- Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- Goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development.

In terms of contributions, the Target 16.10 of the millennium development goal state: "Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements".



Libraries response to this begins in terms of providing *Access to Information*: Around the world, access to opportunity begins with access to information and knowledge. Public access to information enables people to make informed decisions that can improve their lives. Communities that have access to timely and relevant information for all are better positioned to eradicate poverty and inequality, improve agriculture, provide quality education, and support people's health, culture, research, and innovation (IFLA, 2014). As stated in target 16.10: a well-informed society contributes significantly to the development of the nation as the availability of information resources would promote peaceful and inclusive societies for sustainable development, providing access to justice for all and build effective, accountable and inclusive institutions at all levels (Bradley, 2014). Consequent upon this, there are various efforts and initiatives put up by libraries the world over to ensure access to information by all and sundry. Examples across Libraries in the World are provided in Table 1.

Table 1a: Contributions/Efforts and Initiatives by Libraries to Sustainable Development

Country	Initiative	Reference
Sri Lanka	The e-Library Nenasala Programme is a government-run initiative to increase digital literacy and access to technology among the nation's poorest residents living in remote rural areas. The Nenasalas offer instruction in basic computer skills, guidance on accessing information through the Internet, and a wide variety of locally relevant knowledge.	Bill and Melinda Gates Foundation (2014).
Romania	Librarians trained by Biblionet helped 100,000 farmers get US \$187 million in subsidies via new Internet and computer services in 2011-2012. The 1,000+ librarians who participated in training decided to bring the services to their libraries together with local mayors. Most of the mayors understood that this service is in the farmers' interest. The programme helped farmers	IREX (2013)



	learn how to use the technology in libraries to access financial forms and submit them to the government, saving time and money.	
England	81% of local government library authorities in England provide access to e-information on health and wellbeing. Literacy skills also support health literacy and the capacity to access and use health information.	Arts Council England (2014)
Cuba	Infomed is the first electronic health information network in Cuba, which emerged as part of a project to facilitate the electronic exchange of information between a set of libraries, information centres and other entities that make up the National Information System of Medical Sciences in the Ministry of Health	Advancing Sustainable Development Through Information and Communication Technologies

Table 1b: Contributions/Efforts and Initiatives by Libraries to Sustainable Development

Country	Initiative	Reference
Botswana	Botswana Library Association developed a strategy to identify where libraries contribute to Botswana Vision 2016. Libraries drive the An Educated and Informed Nation Pillar of Vision 2016 directly as they collect, organise and disseminate information that society access and uses to inform themselves on various issues of life. However, attainment of the Vision extends beyond just informing and educating, it cuts across all the	Radijeng, Kgomo (2013).



	pillars by empowering communities through knowledge and the ability to access information for themselves.	
Netherland	Boekstart in the Netherlands works with day care and healthcare centres, public libraries and the first two years of primary school to provide books and literacy training to 75,000 children per year. The programme is supported by national and local government, and aims for long-term collaboration between organisations that support children's literacy.	Boekstart Netherlands
Canada	An initiative of Library's Man in the Moon Literacy programme was instituted in 2001 in various locations around Vancouver to provide literacy education for men and women and children. The programme was developed to build on the growing research of how fathers' involvement in children's lives impacts children's health and literacy outcomes -- teaching fathers how to play, sing, talk, and read to their young children, the father-child bond builds the foundation for children's reading readiness, happiness and success later in school and in life.	
	Toronto Public Library (Canada) provides Newcomer Settlement Services including information and support about legal, childcare, housing, health, education; providing support with applications for citizenship, residence, subsidized housing, government benefits.	Toronto Library



Table 1c: Contributions/efforts and initiatives by libraries to sustainable development

Country	Initiative	Reference
China	The launching of mobile library, has enhanced the reading culture of the populace, cutting the bridge between distance and the library as users can access information resources while at the comfort of their home. Commenting on this initiative, Feifei and Yu (2013), emphasized that <i>the mobile library is great news, if I can set up a station near my home, I will go there as often as possible as it is really very convenient and saves a lot of time.</i>	
Colombia	Public libraries are an integral part of the city of Medellín, Colombia's urban renewal strategy. Strategically located in some of the most disadvantaged communities in the periphery of Medellín, they have become centres for social development that address an identified need for more cultural and education space. The Library Parks are a series of public libraries that offer educational tools and programs to benefit the local communities, as well as providing a hub for further urban development and green projects.	Library Parks (Parques Biblioteca)
Indonesia	The National Library of Indonesia has an important role in increasing the level of education and literacy for a population that is spread across islands where education is harder to access. As a result, many library services are provided by boat, this initiative lead to massive education of citizens living around waters, which is not easily assessable by road (Kamil, 2003).	Kamil, H. (2003).



Iraq	In Iraq, Iraq is currently experiencing a high threat to its cultural heritage by ISIS. Northern parts of the country are occupied and reports of destroyed documentary heritage have been circulated. The National Library of Iraq hopes to digitise and preserve heritage from loss, and make it accessible for everyone.	The National Library of Iraq
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Table 1d: Contributions/Efforts and Initiatives by Libraries to Sustainable Development

Country	Initiative	Reference
Kenya	In Kenya, Schools hundreds of kilometres apart in remote areas of western Kenya and Uganda are engaging in lively debates, quizzes and spelling competitions through Kisumu Public Library's smartphone, laptop and video conferencing project. Few rural schools have internet connections, so the library researched ways of connecting to the internet through the mobile phone network.	Kisumu Public Library, Kenya.
Moldova	Libraries are stakeholders in Open Government Partnership (OGP) action, plans, a platform between government, civil society, and business to discuss developmental goals, plans and initiatives and giving mandate to library as a supporter of access to information, as a result of this development, librarian, were giving mandate to seek ideas from civil society citizens around their community to participate, discuss challenges faced and possible solutions as feedback to government to address (Bradley, 2016).	Bradley, F. (2014).
Nepal	After the Nepal earthquakes in April and May 2015, libraries have been	



	are the only place where people can get reliable access to light and electricity to read, study and apply for a job. The Katatura public library (Namibia) provides public access to ICT, study rooms, and classes on using mobile phones.	
EU	In EU, 250,000 people find jobs through their public library in the European Union each year. Public access to ICT and skills enables people to apply for jobs, as the application process for all jobs has moved online.	Public Libraries 2020 (2014)
Mali	Mali, In 2013 armed groups occupied Northern Mali and Timbuktu, a city famous for its cultural heritage and its vast amount of public and private libraries with invaluable documentary heritage. To safeguard the manuscripts during the occupation, volunteers smuggled them into safety to Bamako with the help of international support. The manuscripts have since been kept in the capital and are undergoing restoration and digitisation work. Libraries have been at the forefront of evacuating and preserving the unique heritage of Mali.	

Table 1f: Contributions/Efforts and Initiatives by Libraries to Sustainable Development

Country	Initiative	Reference
Ukraine	In Ukraine, protests in Kiev in 2014 around the Maidan put the National Parliamentary Library of Ukraine was at the midst of the clashes. The library opened its doors to those wounded during the clashes and people in need of some rest and a safe place.	
USA	The Obama administration of the	ConnectED Library



	USA launched the *ConnectED Library Challenge, a commitment by more than 30 communities to put a library card into every student's hand so they will have access to the learning resources and books they can read for pleasure, all available in America's libraries.	USA
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Other libraries services which contribute to improved outcomes across the SDGs also include the following (Dada, 2016).

- Promoting universal literacy, including media and information literacy
- Closing gaps in access to information and helping government, civil society, and business to better understand local information needs
- Providing a network of delivery sites for government programmes and services
- Advancing digital inclusion through access to Information & Communications Technologies (ICT), and dedicated staff to help people develop new digital skills (Advancing Sustainable Development, 2014)
- Serving as the heart of the research and academic community
- Preserving and providing access to the world's culture and heritage
- More specifically, libraries has supported the implementation of the SDGs by providing access to information, support for literacy and ICT skills, and access to community space.

Some of the existing initiatives of library support to SDGs may include:

- UN Depository Libraries that support dissemination of information and research to help decision makers achieve the SDGs
- Access to health, environmental, and agricultural information that are targets of the SDGs; including Open Access resources
- Media and information literacy programmes for marginalized populations to make an important contribution to achieving universal literacy (Bradley, 2016).

It is unfortunate that, arising from the information on Table 1a-f, nothing reflect Nigeria. The implication is that Nigerian libraries efforts towards sustainability has no antidotal record. In West Africa generally, only Mali was able to do something in this regards.

**5. KM TOOLS AND TECHNOLOGIES AND SUSTAINABLE DECISION MAKING**

In this knowledge based economy productivity is highly dependent on informed and sustainable decision making. All knowledge managers have to make decisions. An



individual's problem solving and decision making capability is limited by the knowledge available (Noman & Aziz, 2011). Hence, relevant and updated data are important for effective decision making (Bowett, 2009). There is a close relationship between decision making and knowledge management. Knowledge sharing is the key to knowledge management, which allows knowledge exchange among colleagues and enable informed and participative decision making (Jain, 2016). Knowledge sharing involves gathering and disseminating internal as well as external knowledge within library organization. Employees' (librarians) participation in decision making process can also help an organization to improve its performance by meeting the goals in an efficient way (Danish et al 2013). Knowledge management provides several techniques and technologies for informed decision making (Jain, 2016). For instance, spreadsheets are widely used for 'what if' simulations. Decision Support Systems are used for effective decision making (Jain, 2016). The computer does not take decisions; managers do. However, it helps librarians to have quick and reliable quantitative information about the knowledge (Bowett (2009). There are a wide range of IT tools to create, codify and share knowledge, such as, web 2.0 technologies, decision support and knowledge management systems (Jain, 2016). In relation to that, Ghani (2009) provides a comprehensive list of KM tools available to support the functionalities and processes of KM. Tools to access knowledge, provide access to explicit knowledge that can be shared and transferred through the enterprise information systems. For example, **Convera** is a tool used for retrieval ware, tools for semantic mapping, support presentation of information, analysis and decision making.

**Ontology tools** enable users to organize information and knowledge by groups and schemata that represent the organizational knowledge base.

**Anacubis** is a ground-breaking visual research and analysis software. Tools for knowledge extraction, support structured queries and replies. They help mining text by interpreting relationships among different elements and documents, for example, **ClearForest** Text Analysis Suite.

**Tools for expertise localization**, enable quick location of the knowledge holders in the enterprise and facilitate collaboration and knowledge exchange, for example, **ActiveNet** maintains a continuous and real-time view of organizational activities.

**Tools for collaboration work**, enable teams to globally share dedicated spaces for managing the project lifecycle; editing and publishing materials; conducting live discussions and interactions; and maintaining a repository of materials associated with every step of the process, for example, **QuickPlace** and jabber for real time collaboration among geographically dispersed participants (Ghani, 2009).

All the above KM tools and technologies facilitate informed and knowledge-based and sustainable decision making.



## 6. CHALLENGES OF LIBRARIES IN KNOWLEDGE MANAGEMENT FOR SUSTAINABLE DEVELOPMENT

Challenges hindering libraries from playing their roles in sustainable development are numerous and these challenges are irrespective of countries. There is no doubt, the fact that there are challenges facing libraries in their quest to managing knowledge for sustainability. There are some issues that are directly have to do with lack of training materials and remotely related to funding which emerged as a great challenge which could riddle such a programme. For instance, "the library has its own challenges, regarding inadequate teaching and learning materials, and lack of support from external bodies such as WHO and UNESCO, MOH. So if such a programme is to be carried out who bears the cost"? Putting it rather aptly, "funding, awareness creation and education are the major challenges in the achievement of promoting healthy living and wellbeing" by libraries.

Perhaps, a rather compelling challenge is, "who validates or authenticates the information churned around. The library may be good at information provision, but if information concerning sustainable development goal such as health is not critically scrutinized before they are sent out to the general public, it might lead to serious consequences. So yes, collaboration is important but the library must play the leading role" (Pinto et al. 2017; Dadzie et al. 2016).

It also emerged that a programme in the form of ensuring healthy lives and wellbeing may fail if the various segments of the community are not treated uniquely. For schools, it may be much easier because it is a bit more organized. But for a typical community, people are scattered and have different pressing needs. In admitting "apathy, lack of financial support, time constraints and to some extent professional ignorance" are some of the other challenges. However, probable remedies could include "Institutional, individual, Community and Stakeholder Commitment, as well as advocacy, lobbying, and public education on the part of the librarian (Pinto et al., 2017:12).

Inadequate number of librarians and knowledge management experts: The common scenario nowadays is that many organisations now have their own libraries, very interesting. Unfortunately, limited number of the organizations hire experts to man such libraries. Instead, what they do is just to put somebody to be taking care. This is unfortunate in the sense that, management of organization knowledge require expert with the knowhow and experience of records management such as librarians, archivist or records manager/expert. With this scenario, many organisation's libraries remain empty while some are full of people who does not possess the knowledge and hence the management of knowledge for sustainability is negatively affected.

Unequal effects - With social equity as a fundamental concept of sustainable development, the socio-economic and environmental challenges of unsustainable growth differ largely across the globe. Developing countries and vulnerable populations are most frequently disproportionately affected. This is because of the limited budget usually allocated to libraries in the developing countries and which is not always enough to take care of libraries activities. Consequent on this, little or no more fund available to do other stuff by libraries including planning for sustainability.



## 7. CONCLUSION

This study has been able to identified key issues in promoting sustainability through knowledge management (KM) in libraries. The paper discussed issues like the rationale behind KM in libraries in the 21<sup>st</sup> century, and looked at libraries contributions worldwide to the sustainable development goals. Similarly, the study has been able to identified KM tools and technologies for sustainable decision making, and how to achieve sustainable development through 21<sup>st</sup> century libraries and the challenges hindering libraries from playing their roles in sustainable development. Meanwhile, the paper has emphasized that Knowledge Management and sustainable development could be used to provide measure in achieving sustainability by 21<sup>st</sup> libraries as evidence have shown from different libraries across the world. This is just a discussion paper and not empirical due to the limited amount of literature available on the use of Knowledge Management in sustainable development. The significance of this study is the opportunity to see how much impact knowledge management can make in the process of reengineering libraries along sustainable goals.

## 8. RECOMMENDATIONS

The main variables, or ideas, that affect libraries in their quest for sustainability are the types of KM processes they have in place, the types of sustainable development they are trying to achieve and the key factors that could be used to measure the contribution of KMs role in the sustainable development process. Alignment of these ideas could determine if KM can play a role and affect the development of the sustainable enterprise. The effect of key factors could determine if it is possible to establish measures for future studies. This discussion in this paper is straightforward, however, grounded theory approach is needed to develop the theories as the research unfolds. Further research should highlight other variables that can affect sustainable library project. The establishment of a clear understanding of KM's contribution to sustainable development and the identification of the key factors that drive this would allow libraries to measure that contribution in their re-engineering process. This could see KM processes leading libraries redesign rather than supporting the redesign.

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