

# Major Drivers to Innovation in Higher Education Institutions of Developing Countries.

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**Abstract:** In both developed and developing countries, innovation in higher education improves decision-making capabilities and contributes to institutional growth. Similarly, all higher education institutions naturally store and access knowledge in some manner and these institutions are expected to be at the cutting edge of such innovation. To this date, institutional recognition determines if a higher education institution meets or surpasses the minimum standards of quality education across the globe. Knowledge-sharing builds collective knowledge, retains knowledge and increases innovation capabilities. Higher education institutions in developing countries should be comparable to their counterparts in developed countries. The study therefore explores the key drivers to innovation in higher education institutions of developing countries using a survey strategy. The study collected different views from academics on the core drivers to innovation. An adequate sample of 240 participants was carefully chosen from 4 state universities in Zimbabwe, a developing country in Africa, with a 66.6% response rate. The research participants were actively involved in higher education functions of teaching, learning and research. After performing reliability tests on the data collection instruments, the researcher performed a descriptive analysis to measure the effect of the drivers towards the much needed innovation in higher education institutions. The empirical findings confirm that the most important driver for innovation in higher education institutions is Knowledge Management, followed by technological advances, competitive advantage and globalisation. It was established that technology is an enabler to higher education functions and is now embedded into teaching, learning and research. This educational transformation empowers academics with technical skills. The adoption of Knowledge Management practices supported by up-to-date technology will certainly improve the capabilities of these institutions. Because knowledge cannot be imitated by institutions to gain a competitive advantage, properly investing in Knowledge Management should certainly strengthen an institution into more competitiveness. The study therefore recommends the adoption of Knowledge Management practices for all higher education institutions in developing countries.

**Keywords:** Knowledge Management, Information Technology, innovation, competitive advantage, higher education institutions, Communities of Practice

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## 1. Introduction

Innovation is a very important factor that makes higher education institutions (HEIs) compatible with the dynamic higher education landscape. In general, innovation in higher education means creating institutional value and recognition, improved decision-making capabilities as well as growth and sustainability. Dee (2016) posits that institutional recognition helps to determine if an institution meets or surpasses the minimum standards of quality higher education. In addition to that, innovation in higher education also means that an institution can make well informed decisions. All HEIs naturally store and access knowledge in some manner and these educational institutions are expected to be at the cutting edge of such innovation (Farinha, Nunes, Ferreira and Fernandez, 2018). Ranking of higher education institutions measure their performance using a range of indicators, which are combined into an overall score determining a higher education institution's rank at national or international level (Times Higher Education, 2020). HEIs are ranked according to their core missions of teaching, research and the international outlook.

In an effort to bring about innovation in HEIs of developing countries, this study investigates the drivers to such innovation so that the institutions become innovative and competitive like their counterparts in developed countries. The drivers to innovation considered for this study are Knowledge Management (KM), technological advances, globalisation and competitive advantage. It is vital to state here that the drivers to innovation in this study are not the end-all. KM, which is a fundamental organisational process to bring innovation within every higher education institution is reviewed to understand how it contributes to institutional value. Technological advances are reviewed to see how technology really enables educational functions of creating and sharing knowledge. Because of increased demand for better higher education throughout the world, globalisation creates worldwide networks of universities (Al-Husseini and Elbeltagi, 2018). Competitive advantage describes the ability of a HEI to perform better than its competitors (Farinha et al, 2018). When the effects of these drivers

towards innovation are acknowledged, then the HEIs in developing countries could be innovative like those in developed countries.

### **1.1 Background of the study**

The most important engine for innovation in any HEI is knowledge (Lee and Trimi, 2018) and continuous innovation is very vital for almost all academic institutions. All HEIs look forward to exponential growth and sustainability and such growth is very important especially for developing countries. HEIs in developing countries including Zimbabwe, are not very innovative in comparison to their equivalents in developed countries and this could be attributed to a lack of understanding of what exactly drives innovation. In addition, there is also lack of adequate resources to implement effective systems geared towards innovation. Changes in technology and changes in how knowledge is shared in HEIs are different illustrations of innovation. There is therefore greater need to understand what exactly drives innovation from an academic perspective.

### **1.2 Problem statement**

Higher education institutions (HEIs) in developing countries are not very innovative in comparison to their equivalents in developed countries because they lack a knowledge-sharing culture. The knowledge-sharing culture mentioned here could be promoted by implementing KM practices enabled by proper technologies. Cancino, Merigo and Coronado (2017) confirm that HEIs face increased pressure to perform better than their competitors. According to Times Higher Education (2020), certain HEIs perform better than others, even though these might have the same technological and human resources. Such a limitation is noticeable when an institution is always ranked below others. Ramjeawon and Rowley (2017) reported that HEIs recognise the importance of knowledge-sharing as this practice builds collective knowledge, retains knowledge and certainly increases innovation capabilities.

The importance of innovation has been well researched in higher education (Lee, 2018; Lee and Trimi, 2018; McClure, 2015), but there is still a gap in addressing what exactly drives such innovation, especially in developing countries. Empirical evidence by Saad, Guermat and Brodie (2015), established that globalisation, competitive advantage and technological advances are drivers for innovation in HEIs. If globalisation, competitive advantage and technological advances are the drivers for innovation, then, to what extent is this true in HEIs of developing countries, specifically Zimbabwe? This study therefore deliberates on the main factors that could help HEIs in developing countries improve their innovation capabilities. A comprehensive understanding of these factors could result in better ways of teaching, better ways of researching and effective use of technology to enable the smooth academic operations in HEIs of developing countries.

### **1.3 Research objectives**

The study was guided by the following objectives which sought to:

- Evaluate the core drivers to innovation in higher education institutions of developing countries.
- Recommend the adoption of Knowledge Management practices in higher education institutions of developing countries.

This study was premised on a thoughtful understanding that innovation in HEIs is enabled by a combination of social and technical factors including the academic team which forms the institutional knowledge-base. The social and technical factors mentioned here are enabled and supported by information systems in the respective HEIs.

## **2. Literature review**

This section reviews literature from accredited sources on the drivers to innovation in HEIs and it is imperative to state here that the drivers reviewed in this section are not the be-all and end-all. Only those drivers which could possibly contribute to innovation in HEIs of developing countries were reviewed.

### **2.1 Knowledge Management**

Knowledge Management (KM) is about creating institutional value and contributing to strategic issues such as resilience, growth, sustainability, adaptive capacity and innovation. The KM processes offer a proper and convenient way to capture and store an institution's knowledge while individuals and teams are responsible for the generation of a new architecture of knowledge. The key resource in KM is people with relevant work experience (Girard and Girard, 2015; Yazhou and Jian, 2017). It is therefore important to question "What made

these people experts? What made them high performers? What make them so exceptional?" Some standard definitions of KM have been reflected upon in this review to facilitate conceptualisation of the research area and how it could drive innovation in HEIs of developing countries.

The pioneers and theorists to KM (Nonaka and Takeuchi, 1995), define KM as a process of capturing, sharing and effectively using organisational knowledge. According to O'Dell and Hubert (2011), KM is a systematic process that enables knowledge to grow, flow and create institutional value. Taking cue from the systematic flow of information above, Liu (2016) submits that KM is a multi-disciplinary approach to achieving institutional objectives by making the best use of knowledge possessed by individuals. Liu further stresses that KM concentrates on processes such as creating and sharing knowledge as well as the technical and cultural pillars that support them. Girard and Girard (2015) describe KM as the process of creating, sharing and managing organisational knowledge.

From the definitions above, the words used are: organising, creating, sharing and managing. Thus, systematicity and coordination run through the definitions submitted, implying that KM is critically important in higher education institutions for their survival and growth. These two are common features in the conceptualisation of KM. Such a mapping is extended in other authors such that Young (2013) concur with Liu (2016)'s view and suggest that KM involves carrying out activities involved in capturing, sharing and applying knowledge and people skills to solve real world problems. It is therefore important to highlight here that KM is one of the most important drivers for innovation in HEIs and the process focuses on creating and sharing knowledge. Findings by Sadeghi Boroujerdi, Hasani and Delshab (2020) demonstrated that there is a substantial relationship between KM and institutional innovation. Value-creation in HEIs therefore lies in the KM capabilities to share and re-use knowledge.

## **2.2 Technological advances**

Technology should therefore be seen as an enabler to higher education functions of creating and sharing knowledge and should not be seen as a replacement for people with valuable knowledge and work experience. In the knowledge-economy, HEIs depend on production, transmission and dissemination of knowledge which is done using the most appropriate technologies. The HEIs, specifically universities play a great role in all these areas. In this 21<sup>st</sup> century, technology is integrated into teaching, learning and research at almost all HEIs across the world (Christensen and Eyring, 2011; Henriksen, Creely and Henderson, 2021). This technology transforms educational practices by empowering academics with practical skills. Despite the advanced technologies available today on the market, simple technology, which is user-friendly, is preferred to allow academics to communicate and collaborate effectively. Massingham (2014) advises that knowledge-sharing tools be updated regularly to match the rapid technological changes. Arguably, technological advances help HEIs to gain a competitive advantage.

According to Lee (2018), HEIs face serious issues of properly organising and managing knowledge. An effective Knowledge Management System (KMS) supported by information systems in academic institutions will certainly help to make right decisions at right time (Khedhaouria and Jamal, 2015). The integration of an institution's knowledge processes with its business processes of academic delivery and innovation will substantially enhance an institution's performance. We can therefore deduce that upgrading and updating new technology in an academic institution is bound to improve its innovation capabilities. Laudon and Laudon (2020) explain that the role played by Information Technology (IT) in all business operations including academic institutions is to provide a knowledge-sharing platform. Alshehri and Cumming (2020) add that IT-based KM intervention in HEIs prove to be a promising technological management tool that enhances teaching, learning and research.

## **2.3 Globalisation**

The rise in newly established HEIs globally, is another important and visible driver for innovation (Saad, Guermat and Brodie, 2015). Thus, globalisation creates a worldwide network of universities. There is increased demand for improved and better higher education throughout the world (Al-Husseini and Elbeltagi, 2018) and advances in IT have facilitated the delivery of educational services across national borders. Globalisation interconnects institutions across the world and this connection makes HEIs visible to each other. The visibility mentioned here facilitates the necessary knowledge flows between and among academics. HEIs should be recognised globally (Times Higher Education, 2020), and to compete in such a stiff completion, the institutions should continuously try to innovate so that they outperform their competitors. Changes in educational models are some of the notable challenges faced by HEIs, especially in developing countries.

HEIs are multifaceted institutions with different backgrounds, different cultures and different resources. These HEIs face a more interconnected world where knowledge and innovation are essential ingredients for success. Globalisation encourages HEIs to think about the different ways they teach, conduct research and manage the institutions (Saad et al, 2015). Institutions of higher learning cannot exist in isolation as they have to continuously collaborate with their competitors through conferences for example. Thus, for institutions in developing countries to be innovative, they should collaborate in different ways with well-renowned institutions across the world.

#### **2.4 Competitive advantage**

With specific reference to HEIs, competitive advantage is defined by Farinha (2018), as the ability of an institution to perform better than its competitors. All institutions of higher learning, globally and in Zimbabwe, are working towards creating and sustaining superior performance. Since knowledge cannot be copied or imitated by institutions to gain competitive advantage, investing in KM should certainly bolster an institution into more competitiveness and innovation. Farooq (2018) advocates that institutions of higher learning continuously strive to create mechanisms that distinguish them from their competitors. It is therefore not an overstatement that competitive advantage drives innovation and is positively related to value-creation. Knowledge acquisition and effective use of such knowledge is the only way HEIs can have competitive advantage (Mahdi, Nassar and Almsafir, 2019). In most HEIs, sustainable competitive advantage lies in the effective channeling of intellectual capital.

Farooq (2018) underscore that the ability of an institution to create and share knowledge is the primary source of competitive advantage. Thus, value-creation in HEIs is delivered by academics with research proficiency. Yazhou and Jian (2017) argue that it is not the stock of knowledge that provides an institution with competitive advantage, but the way knowledge is applied in value-creation. As implied in the generic model of an information system by Laudon and Laudon (2020), value creation starts with input-process-output. In academic institutions, the academic or researcher contributions are considered as inputs, socialisation in academic Communities of Practice as the process and value-creation as the output. Following Nonaka's (1991) seminal advice "...the only time lasting competitive advantage is knowledge..." we find knowledge-based institutions and competitive advantage. It is important to further highlight here that superior knowledge bases result from effective knowledge-sharing and knowledge inventories are the basis for competitive advantage.

From the literature review, we hypothesized that KM facilitates knowledge flow in HEIs which is an essential ingredient to institutional innovation. Upgrading and updating technology in a HEI is bound to improve the innovation capabilities. The next section presents the methodology adopted to complete this study.

### **3. Research Methodology**

A survey strategy was employed to gather data from 240 academics at four HEIs in a developing country in Africa called Zimbabwe. The sample was selected from purposefully selected academics at four HEIs in Zimbabwe, and interestingly, the response rate was 66.6%. The survey quantitatively gathered the different opinions from the academics on the major drivers to innovation in HEIs. It is important to mention here that all the participants were actively involved in higher education functions of teaching, learning and research. The study adopted a survey using online questionnaires because the authors, Bhattacharjee (2012) and Oates (2006) concur that surveys offer honest responses in comparison to other research strategies. Bhattacharjee, (2012) also established that, with surveys, the costs for data gathering are also minimised. Moreover, the strategy permits statistical analysis of variables to ensure that precise results are achieved in answering the research problem.

A questionnaire was developed by the researcher from a thorough literature review on the different factors and variables that could make HEIs more innovative. All the questions on the questionnaire data collection instrument were tested for validity and reliability. According to Leedy and Ormrod (2016), validity of a research instrument describes the extent to which the instrument measures what it is envisioned to measure. In simple terms, reliability means dependability of the research instruments. The reliability described here is expressed statistically, usually as a reliability coefficient, which is attained by establishing the correlation between variables. Reliability is therefore the degree to which results are dependable over time (Yin, 2016). A total of 20 statements were categorised into 4 dimensions which we call drivers for this study labelled: Knowledge Management, technological advances, globalisation and competitive advantage. Propositions were made for each innovation driver. All the questions on the questionnaire were on a Likert scale, ranging from strongly agree (5) to strongly disagree (1).

The responses were collected from the last quarter of 2021 to the first quarter of 2022 using a mailing list. The participants had to click on the web link provided to voluntarily complete the questionnaire and the responses were written to the researcher’s Google Drive. It is very important to state that the data gathering process commenced after obtaining an ethical clearance from the university and also after getting permission from the HEIs in Zimbabwe. The ethical clearance reference number is 2021/CSET/SOC/041, valid for 5 years from 14 September 2021 to 14 September 2026. To conform to the ethical principles in research, the participant information sheet and a consent form were provided and the participants partook out of their own volition, thus there was no coercion. To protect the anonymity of the research participants, the data was analysed collectively using Microsoft Office Excel 2019 and Statistical Package for Social Sciences (SPSS) as the researcher was conversant with both packages.

#### 4. Discussion of results

The data which was collected using an online questionnaire was loaded into a spreadsheet for quantitative data analysis. At first, the researcher had to check that the items on the questionnaire measured the intended constructs and could be replicated yielding the same or similar results. Reliability tests were conducted on all the drivers for innovation associated with this study and the outcomes are presented in Table 1 below.

**Table 1:** Reliability of factors using Cronbach’s Alpha

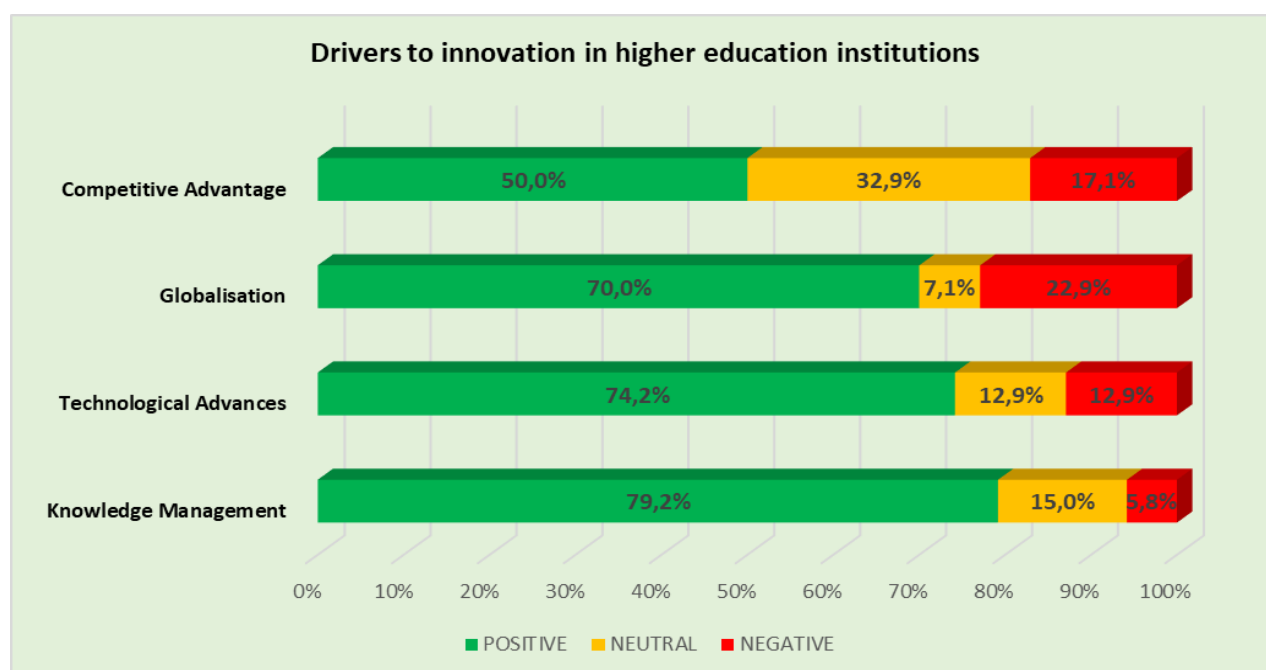
		Innovation drivers			
		Knowledge Management	Technological Advances	Globalisation	Competitive Advantage
<b>Cronbach’s Alpha</b>		<b>0.61</b>	<b>0.74</b>	<b>0.68</b>	<b>0.81</b>
<b>Knowledge Management</b>	KM1	0.61			
	KM2	0.67			
	KM3	0.93			
	KM4	0.76			
	KM5	0.62			
	KM6	0.66			
<b>Technological Advances</b>	TA1		0.85		
	TA2		0.63		
	TA3		0.76		
	TA4		0.77		
	TA5		0.81		
<b>Globalisation</b>	GL1			0.53	
	GL2			0.62	
	GL3			0.71	
	GL4			0.83	
<b>Competitive Advantage</b>	CA1				0.75
	CA2				0.79
	CA3				0.62
	CA4				0.74
	CA5				0.84

The reliability tests were performed per factor and they confirm the appropriateness of the data collected and analysed. On the Knowledge Management construct, Cronbach’s Alpha yielded 0.61; technological advances yielded 0.74; globalisation yielded 0.68 and competitive advantage produced 0.81 as shown in Table 1 above. According to Salkind (2015), Cronbach’s Alpha above 0.6 is acceptable although other scholars advocate for higher values of 0.90 to 0.95 to perform inferential statistics. In line with Salkind (2015)’s suggestion, the researcher therefore performed only descriptive statistics to evaluate the major drivers to innovation in HEIs. The data was amassed using a Likert scale questionnaire to assess the different opinions of the academics on the various concepts geared towards innovation in HEIs. Table 2 below presents a summary of the 240 responses obtained from academics on the major drivers to innovation in higher education institutions (Knowledge Management, technological advances, globalisation and competitive advantage). Table 2 below, shows the average of responses on the different propositions for each innovation driver.

**Table 2:** Summary of responses on the innovation drivers in higher education institutions

Drivers to innovation	Summary of responses				
	Strongly Agree (5)	Agree (4)	Not Sure (3)	Disagree (2)	Strongly Disagree (1)
Knowledge Management	47%	32%	15%	6%	0%
Technological Advances	44%	30%	13%	6%	7%
Globalisation	42%	28%	7%	13%	10%
Competitive Advantage	25%	25%	33%	10%	7%

Figure 1 below shows the summary of responses followed by a detailed discussion of the responses from the academics. In Figure 1 below, positive responses are those where the participants strongly agreed and agreed respectively to the different propositions on a specific driver. Neutral reflects on the responses where participants were not sure or indecisive on the suggestions. Negative is a combination of participants who disagreed and strongly disagreed with the different propositions on a specific innovation driver.



**Figure 1:** Drivers to innovation in higher education institutions

Based on the mean from the submissions by the academics, we can deduce that KM is an important driver to innovation in HEIs of developing countries. As can be seen from Figure 1 above, an overwhelming 79.2% of the participants responded positively to the propositions on the KM constructs driving innovation in HEIs. Just 15% of the participants were indecisive if KM could bring about innovation in HEIs and only 6% had negative views on the propositions. The key resource in KM is people with relevant work experience (Dayan, Heisig, and Matos, 2017). In addition, KM aids in the continuous transformation of individual learning to institutional learning. It has been also established in literature (Givens and Stocker, 2020) that KM boosts collaboration and knowledge-sharing. From the findings collected, presented and analysed, we can underscore that KM through knowledge-sharing and collaboration is a weighty concern in HEIs. Empirical evidence in this study has positively confirmed that KM increases the learning and innovation capabilities of academics at HEIs of developing countries. The study also established that KM offers practical ways to capture and store an institution’s knowledge while academics are concerned about the generation of new knowledge. We can therefore extrapolate that KM is an important driver to innovation and this is imperative for institutional survival and growth.

Innovation in HEIs could also be triggered by several technologies. Information Technology (IT) provides a platform for collaborative knowledge-sharing which is very vital in almost all HEIs. Laudon and Laudon (2020) adds that the role played by IT in all business operations, including academic institutions, is to provide a knowledge-sharing platform. Technology is integrated into teaching, learning and research at almost all HEIs across the world (Henriksen, Creely and Henderson, 2021) and this technology should be updated regularly. It

emerged from this study that upgrading and updating new technology improves an academic institution's innovation capabilities. A staggering, 74.2% of the academics settled on the premise that technology enables higher education functions of creating and sharing knowledge. Findings also confirmed that technology cannot replace academics with valuable knowledge and experience. We can therefore generalise that technology is an enabler to higher education functions and can help those institutions gain a competitive advantage. Based on the empirical evidence, we can conclude that technological advances are a great driver to innovation in higher education where majority of the participants responded positively to the propositions on technological advances bringing about innovation in HEIs.

Globalisation is one of the drivers to innovation in HEIs as it creates a worldwide networks of universities. Majority of the participants settled that HEIs cannot exist in isolation. This finding demonstrates that international collaboration between HEIs enable researchers to access additional expertise, gain new perspectives on research practices and build relationships with other scholars in specific fields. The academics can therefore form Communities of Practice for collaborative knowledge-sharing. Collaboration helps HEIs to innovate and adapt in a time of rapid and continuous change. The global recognition of an institution's reputation is very vital to a point that 70% of the academics supported the proposition. Only 7.1% of the academics were indecisive and 22.9% had negative views on the different propositions. We can therefore infer that globalisation connects institutions across the world and this networking makes universities visible to each other. There is increased demand for improved and quality higher education throughout the world, hence the need to collaborate both locally and internationally.

Competitive advantage was also confirmed to be an important driver to innovation in HEIs. McClure (2015) posits that knowledge is a very important resource that offers competitive advantage in HEIs. Superior knowledge bases result from effective knowledge-sharing and interestingly, 50% of the academics concur that superior knowledge bases results from effective knowledge-sharing. From this finding, we can infer that HEIs should develop knowledge-sharing strategies as a means to gaining a competitive advantage. In the related literature, Farooq (2018) established that knowledge inventories are the anchor for competitive advantage and in this study, participants confirmed that knowledge inventories form the basis for competitive advantage in HEIs. We can therefore argue that it is not the stock and archive of knowledge that provides an institution with competitive advantage, but the way knowledge is applied in value-creation. The ability of an institution to create and share knowledge is therefore the primary source of competitive advantage.

## **5. Study contribution and conclusion**

The study contributes towards an understanding that, in the information and knowledge society that we live in, the source of welfare is knowledge. Constant innovation is germane for all HEIs and the most important engine for such innovation is knowledge. From the findings, we can underscore that KM through knowledge-sharing and collaboration is at the centre of prerogatives in HEIs. This collaboration with experts both locally and internationally in different fields certainly provides a way to tap new knowledge which is central in bringing about innovation. Technology transforms educational practices by empowering academics with practical skills in HEIs. In spite of the advanced technologies available today on the market, simple technology which is user-friendly is preferred to allow effective communication and collaboration by the academics. An effective Knowledge Management System (KMS) supported by IT in HEIs may help in the decision making processes.

HEIs should be recognised globally, and to compete in such a stiff completion, they should continuously strive to innovate so that they outperform their competitors. The institutions should always collaborate with their competitors through knowledge-sharing in their Communities of Practice. Since knowledge cannot be copied or imitated by institutions to gain competitive advantage, investing in KM should certainly bolster an institution into more competitiveness and innovation. It is therefore not an exaggeration that competitive advantage drives innovation and is positively related to value-creation in HEIs. The major limitation in this study is that the drivers to innovation discussed are not the be-all and end-all. The drivers discussed could help HEIs in developing countries to be innovative. Further studies can explore other social and technical factors which may possibly improve HEIs capabilities of capturing and using knowledge effectively. In conclusion, the study recommends the implementation of KM practices including creation of Communities of Practice as a means to improving innovation capabilities of the institutions.

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