A review of performance management systems in higher education institutions across the globe

Elias Rashidi[1], Raphael M. Jingura[1], Julius Tapera[2], Gerald Munyoro[3]

[1]Chinhoyi University of Technology, Zimbabwe
[2]Lupane State University, Zimbabwe
[3]Zimbabwe Open University, Zimbabwe

Abstract

A concern has been raised that African countries have been copying and using tools that are developed in the West and these have not added value to concerned institutions in developing countries. As a result of this copy and paste tendency, Performance Management Systems (PMS) used in developing countries are obsolete to the extent that there is no accountability of staff with regards to their performance. This paper is based on a review of literature on Performance Management Systems in higher education institutions (HEIs). It is an extract from a project whose major objective was to develop a bespoke Performance Management System that can be used for quality assurance and its enhancement in Higher Education Institutions. The articles were identified through a systematic literature review by searching for key terms on the EBSCOhost data base using key words and backward snowballing. The findings are that performance management in higher education can be improved by taking the strengths of the current systems and adopt them to current conditions. Furthermore, the systems can be further improved with the aid of information and communication technology tools.

Keywords: Performance management systems, Higher education institutions

Introduction

The Organisation for Economic Corporation and Development (OECD) (2008) highlighted that higher education (HE) contributes to national development through four main pathways. These are: formation of human capital; building of knowledge bases; maintenance and dissemination of knowledge; and use of knowledge (OECD, 2008).The performance of a country's HE system is a development issue that needs considerable attention, all other sectors of development need high level manpower produced by higher education (Association of African Universities, 2017). It is well known that the level of development in a nation depends on its institutions of higher learning. However, the quality and accessibility of higher education has continued to fall short of stakeholders' expectations in many sub-Saharan countries (Materu, 2007; Mohamedbhai, 2008; Kasenene, 2010; Asamoah and Mackin, 2015). Usage of Performance Management Systems (PMS) in HE has been found to be one of the ways that can be used to improve the quality of service delivery (Zulystiawati, 2014; Sumlin, 2011; Sudirman, 2012). The university like any organisation, must deal with uncertainty and change at an ever increasing pace. Therefore, HEIs must provide themselves with robust tools to monitor performance in a turbulent environment to remain competitive in the face of uncertainty in this age of cut throat competition and resources constrain.

This paper is a literature exploration on PMS in higher education institutions (HEIs) and has been necessitated by the slow uptake of PMS in African HEIs (Alboushra *et al.*, 2015). It is an introductory paper to a project whose major objective is to develop a PMS that can be used for quality assurance and enhancement in HEIs. A concern has been raised by De Waal (2007) that African countries have been copying and using tools that are developed in the West and these have not been adding value to concerned institutions. As a result of this copy and paste tendencies, PMS used in developing countries are obsolete to the extent that there is no accountability of staff with regards to their

performance. This makes it very difficult for the university to measure its overall performance in relation to its strategic objectives (Ngcamu, 2013).

Research problem

There is no proper performance management system in African HEIs (De Waal, 2007; Bunoti, 2010; Majoni, 2014). The absence and low uptake of PMS in African HEIs have a tendency of using obsolete systems in cases where they are used (De Waal, 2007; Curtright, 2010; Bunoti, 2010; Majoni, 2014).

In instances where they are used, they are inappropriate as these were borrowed from the developed world without proper adoption and adaption to local environments. The lack of a proper PMS leads to other quality related challenges in institutions of higher learning.

Objectives of the Study

The major objective of the study is to explore the PMS used in HEIs. The strengths and weaknesses of these systems would be investigated in order to come up with a system that can be used for quality assurance and enhancement in HEIs.

Methodology

The standard procedure for performing a systematic literature review (Okoli & Schabram, 2010) was used. The search period was 2015 to 2020. EBSCOhost was used as research databases due its availability in University libraries. The database is also among the top ten research databases. The search was delineated to online full-text journal articles. Key performance management terms were assembled such as, balanced scorecard, results based management,

lean six sigma, performance prism and performance pyramid. For performance appraisal, two search strings were used; these were "360 degrees' feedback" and "higher education" as well as "supervisor-subordinate appraisal" and "higher education."

The Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) statement (Moher et al., 2009; Fobes *et al*., 2018) was used to determine articles for inclusion in the study. Due to the limited number of articles that meet the inclusion criteria in some instances, snowballing from reference lists of the identified articles was used to identify additional articles as guided by Wohlin (2014).

Findings and Discussion

Table 1: Definition of performance management

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| Definition	Reference
▪ An interlocking set of policies and practices which have as their focus the enhancement of organisational objectives through the concentration of individual performance	Sallis,(2008)
▪ A continuous process of improving individual, team and organisational performance	Bussim, (2012)
▪ A continuous process of identifying, measuring, and developing the performance of individuals and teams and aligning performance with strategic goals of the organisation	Aguinis, (2013)
▪ A systematic process for improving organizational performance by developing the performance of individuals and teams	Armstrong,(2014)

In as much as the definitions of PM vary, a common thread runs in all of them. The dimensions of this common thread can be summarized as:

a) Focus on organizational goals

b) Alignment of individual to organizational goals. This is referred to as strategic alignment.

c) Achieving organizational goals through the work of individuals and teams

Armstrong and Baron (2002) described PMS as a strategic and integrated approach of conveying continued success to institutions by developing the people in a way that improves group and personal performance. According to Spangenberg (1994) model, PMS consists of four stages: performance planning, managing performance, reviewing performance and rewarding performance.

Spangenberg (1994) proposed four stages of PM that can be easily superimposed on Deming's quality cycle plan, do, check and act (PDCA) cycle. The utility of the PDCA cycle in quality management is well documented. A superimposed diagram of the PMS and PDCA cycles is shown in Figure 1.

Figure 1: Superimposing the PDCA and PMS cycles
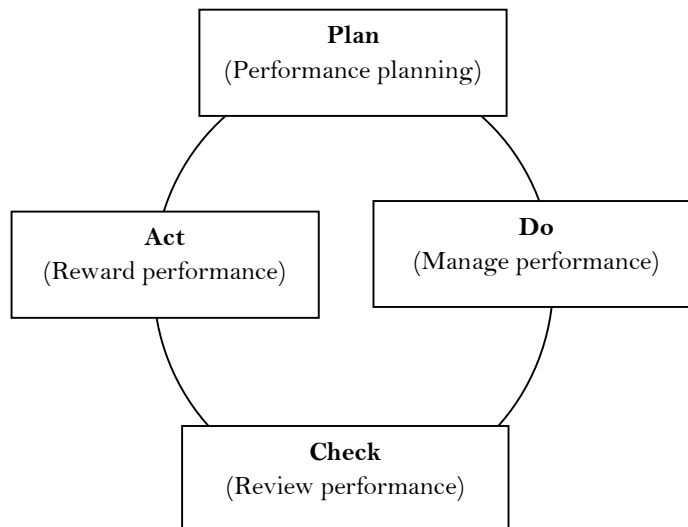
Source: Authors

It can be seen that a PMS can drive both organizational performance and quality of the outputs in HE. It is commonplace that PMS adds value to organizational performance. From literature, the utility of a PMS can be summarized to be; creation of a shared vision among managers and employees, clarification of the roles of individuals, integrating them with the organisation and driving of organizational performance. In essence, quality management and performance management are business practices that affect the performance of HEIs in a positive way if they are properly designed and implemented.

Philosophies that drive Performance Management in Higher Education

For a performance management system to succeed there is need for and underlying principle that drives the machinery in the institution. It is a philosophy that guides the human resources in every process in the performance management system.

Results Based Management

A query on the EBSCOhost data base for "Results Based Management" and "Higher education" yielded only four results. This is an indication that the area is under researched. Result Based Management (RBM) aims to improve performance by stating results at the beginning of the performance cycle (Canadian International Development Agency, 2003). The system ensures that inputs and processes contribute to the achievement of desired results (United Nations Developing Group, 2011). Writing on PMS in the Zimbabwean civil service Madhekeni (2012) and Zvavahera (2014) noted that RBM is one system that has a potential to improve service delivery in the public sector due to its

results orientation. Hauge (2001) also reported that public institutions in Uganda improved their performance by implementing RBM. The philosophy is highly applicable in higher education particularly in the wake of increased demands from stakeholders.

Results are the outputs, outcomes or impacts (intended or unintended, positive and or negative) of a development intervention (Bester, 2016). Achieving the intended results is the primary focus of RBM. As such, planning starts with identifying intended results so that the organization is continuously directed towards attainment of such results. The RBM model is shown in Figure 2.

Figure 2: Results Chain/Logic Model

Results Chain →					
HOW Should this be implemented?		WHAT Should be produced?	WHAT Results do we expect from this investment?		WHY Should we do this?
Inputs	Activities	Outputs	Short-term outcomes	Medium-term outcomes	Long-term impacts
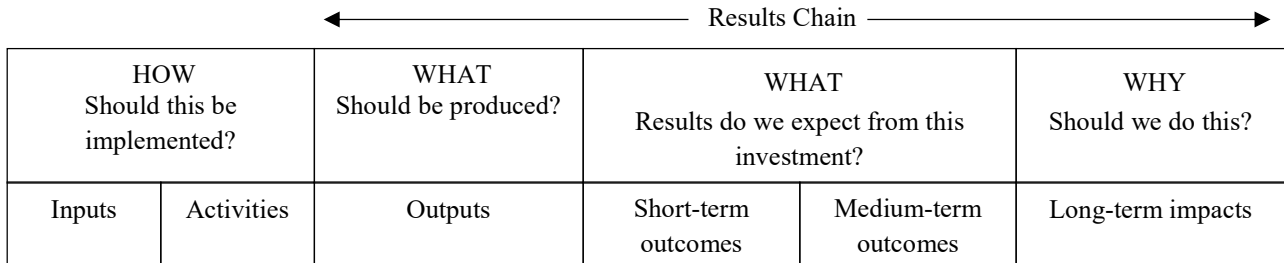
Source: Canadian International Development Agency (2003)

It can be seen in Figure 2 that the intended results determine the inputs required and the activities to be undertaken. HE has many processes which are teaching, learning, research and service that are amenable to the RBM chain. For example, for teaching, the intended results can be improved student learning outcomes. The advantages and disadvantages of RBM are given in Table 2.

Advantages and disadvantages of RBM as indicated in Table 2

Table 2. Advantages and Disadvantages of RBM

	References
Advantages	
▪ Facilitates organisational learning and transparency by channelling performance information to decision makers through nested feedback loops from continuous performance monitoring, evaluation and audit activities	Canadian International Development Agency (2003)
▪ Lead to uniform reporting since these would be guided by the same structure	Madhekeni, (2012)
▪ Help policy makers track progress and demonstrate results leading to the improvement of quality and service delivery	Zvavahera, (2013)
Disadvantages	
▪ RBM is costly, resource constraints has hampered training initiatives for employee to become conversant with the concept	Kusek &Rist, (2004)
▪ Adopting, implementing and sustaining an RBM system is not easy due to its complexity	

In instances where RBM failed, it is because the system had not been tailor made to suit the needs and situations of specific organizations (OECD, 1997). The successful implementation of RBM requires a level of customisation to a specific organisation under consideration. Therefore, there is need to customize the RBM to HE if it is to be used successfully for the achievement of intended results. Thus Madhekeni (2012) noted that RBM remains a valid and indispensable tool for managing programmes and projects in government departments.

This philosophy is worth pursuing and is attractive to higher education because of its emphasis on the quality of outputs and outcomes.

Lean Six Sigma

An EBSCOhost query on "Lean Six Sigma" and "Higher Education" yielded fifty-eight results. According to Adna – Petruta and Roxan (2014) Sigma is

used to represent the statistical term "standard deviation" which measures the deviation from the average in a particular business process. With more deviations from the normal, come defective products and services that do not fulfil the customer need and wants (Adna – Petruta and Roxan, 2014). These defects end up costing the organisation in terms of money. In short Six Sigma aims for zero defects in the production of goods and services.

According to Montgomery (2017) the six sigma concept began in the manufacturing arena, and the idea that organisations can improve quality levels and work "defect-free is currently being incorporated by HEIs in the same way as other performance measurement tools. He noted that as six sigma permeates into today complex sophisticated higher education landscape, the methodology is "tweaked" to satisfy unique needs of individual schools. He noted that combining the lean flow methodology with six sigma methodologies allows the attainment of synergy that provides results much greater than if each of the approaches were implemented individually (Montgomery, 2017). Thus for the lean six sigma approach to achieve intended objectives in higher education it has to be tailor made to suit individual HEIs. Comm and Mathaised (2005b) further suggested that one way of introducing lean practices at HEIs might be by outsourcing non-core activities. By so doing the lean methodology minimises and eliminates different forms of waste and non-value added activities (Liker, 2014). Svensson *et al.,* (2015) went on to note that improving higher education the LSS way can be done in the same way as any other industry including academic and non-academic processes. LSS can increase student satisfaction, provide HEIs with problem solving templates and changing the institution's culture and other benefits (Antony, 2014; Simons, 2013). Gross (2008) noted that initially, the most appropriate areas for applying LSS in a university may be in non-academic areas as these have characteristics similar to many business processes which have benefited from the methodology. Such

processes include student admissions, financial services, library services, works and estates and catering services. Selection of the right project will create confidence in management and employees towards LSS initiative (Antony *et al.*, 2012).

Furthermore, Antony *et al.*, (2012) identified relevant tools and techniques that six sigma use to help in improving the quality of higher education. These are the cause and effect analysis, the Pareto analysis, define-measure-analyse-improve-control charts, control charts, root cause analysis and other such tools. For the implementation of a lean six sigma to be successful Antony (2014) identified five readiness factors that draws inspiration from that total quality management philosophy that need to be taken into consideration. These include leadership, vision, management commitment, resources, linking LSS to the university's strategy, customer focus and selection of the right people (Antony, 2014).

According to Mitra (2004) lean six sigma is used to archive quality improvement by reducing the defects in the products, services and process. This is archived through the (define-measure-analyse-improve-control) DMAIC process. According to Montgomery (2017), DMAIC entails definition of a problem and expected results and the measurement of success towards the solving of the identified problem. Measurement entails gathering quantitative and qualitative data to get a clearer view of the current state, while analysis is about studying the information gathered in the measure phase, pin point threats and identifies improvements opportunities where non value addition tasks can be removed. Finally, improvement and control entails implementation of recommended solutions and placing necessary controls to ensure improvements are sustained as well as promoting continuous improvement activities

respectively. LSS also recognises the importance of the customer in quality management.

The usage of the Lean Six Sigma (LSS) is prevalent in the United States and Europe and some parts of Asia and Africa (Nadeau, 2016). Examples of institutions that use this approach *are* Oakland University, South Dakota State University, University of Central Oklohoma, Royal Institute of Technology, Cardiff University, Nottingham Business School, Portsmouth Business School, Turku University of Applied Science, Tswane University of Technology and Gitamu Visakhaptnam Shri Krishan Institute of Engineering and Technologyamong many (Nadeau, 2017; Antony, 2014).

Table 3: Advantages and Disadvantages of Lean Six Sigma

	References
Advantages	
▪ Projects follow a standard predefined structure, leading to consistent results.	Adina-Petruţa & Roxana, (2014), Simons,(2013)
▪ Help to extract information on the voice of the internal and external customer, their requirements are included in process design.	Found & Harrison,(2012)
▪ Help establish measures, education tend to use lagging indicators, LSS requires the usage of leading indicators.	Simons, (2013)
Disadvantages	
▪ Difficult to apply to HE due to the intangible nature of an educational product, diversity of departmental/individual goals and viewpoints. ▪ The application of LSS requires a prerequisite familiarity and acceptance of analysis tool.	Jenicke, Kumar, & Holmes, (2008), Atmaca & Girenes, (2013)

Performance Measurement Systems

Balanced Scorecard

The balanced scorecard (BSC) was introduced by Kaplan and Norton in the early nineties. The BSC has four perspectives. These are: the financial, internal processes, learning and growth, and the customer perspectives (Kaplan & Norton, 1992). According to Al-Hosaini and Sofian (2015) these perspectives work in a cause-effect scenario. For example, good financial conditions enable the provision of good facilities and excellent resources (Al-Hosaini and Sofian, 2015). An adaptation of the BSC perspectives to a university context is shown in Table 4.

Table 4: Components of the Balanced Score Card in a university context

Perspective	Components in a university	References
Financial	Revenue, Fund raising, Investments, Research income	Farid, Nejati & Mirfakhreddini, (2008)
Customer	Students, Community, Industry/employer, Alumni, Parents	Ahmad & Soon, (2015), Binden, Mziu& Suhaimi, (2014)
Learning and growth	Research, Capacity development for staff, Learning organisation, Facility and infrastructural growth	Farid et al., (2008)
Internal processes	Research and innovation, Teaching and learning, Quality and currency of staff, Curriculum/program excellence and innovation, Efficiency and effectiveness of service	Farid et al., (2008)

According to Deshpande (2015) a dashboard can be used to convert organisational objectives to key performance indicators (KPIs). The KPIs in

higher education are academic parameters such as student enrolments and graduation rates, ethnicity, programme/degree completion rate and time to completion among other measures (Ewel, 1994 cited by Farid *et al*., 2008). The advantages and disadvantages of the BSC are shown in Table 5.

Table 5: Advantages and disadvantages of the Balanced Score Card

	References
Advantages	
▪ Motivates employees toward accomplishment of institutional goals	Ahmad & Soon, (2015)
▪ Aligns strategy at each unit in order to effectively and efficiently achieve objectives	
▪ Facilitates communication, establishment of common goals, provides feedback and assesses employee performance relative to corporate strategy	
Disadvantages	
▪ Translation of the BSC to the academic world is not easy	Ahmad & Soon (2015)
▪ Particularly the development of the framework, implementation, training, design, development and controlling.	Deshpande,(2015) Wahba,(2016)

Implementation of the BSC in HEIs, serves as a driving force to move institutions towards desired goals. To ensure academic excellence in a time of increasing competition in the higher education sector Kiriri (2018) argued that universities must apply appropriate performance measurement systems that reflect and gives the opportunity to improve on its research and teaching quality as well as the quality of its facilities and staff. Such a system like the balanced scorecard could be used because it incorporates perspectives of all university stakeholders. Chen, Young and Shiau (2006) agreed that the usage of the BSC in HEI enables the institution to turn strategy into action.

The system is prevalent mainly in the United States and Europe. Asian and African HEIs are beginning to realize the usefulness of the system (Kassahun,

2010; Binden, Mziu, & Suhaimi, 2014, Kiriri, 2018). Examples of institutions that use the system include the University of Washington, Yale University, University of Toronto, University of Lisbon and University of Newcastle Sayed (2013) cited by Ahmad and Soon (2015). Examples in Asia and Africa include the Hasanudin University in Indonesia (Surdiman, 2012), the Arab Academy for Science, Technology and Maritime Transport in Egypt (Wahba, 2016), and the University of Kwa-Zulu Natal in South Africa (Barnes, 2007).

Performance Prism

Smulowits (2015) noted that although the performance prism has been discussed widely in literature, there is a paucity of research about the performance prism in higher education.

The Performance Prism was developed by Neely, Adams and Kennerly in 2002. It has five facets the top and bottom stakeholder satisfaction and stakeholder contribution respectively. The other three are strategies, processes and capabilities (Neely *et al*., 2002). For the performance prism, wants and needs of stakeholders must be determined first before the identification of strategies that meets those wants and needs (Neely, Adams and Crowe, 2001).

The perspective to consider first when using the performance prism is stakeholder satisfaction. The perspective addresses the question who are the most influential stakeholders and what do they want and need (Neely and Adams 2002). The applicability of the performance prism to HEI emanates from the fact that it starts with stakeholder identification. In higher education stakeholders are the students, industry, the government and its agencies, accreditation and professional bodies among many. One can only come up with right strategies after identifying the wants and needs of stakeholders. Strategy determination is the second perspective in performance prism. It addresses the

question on the strategies that should be adopted by an organisation to ensure that the said wants and needs of stakeholders are satisfied (Cengic and Fazlie, 2008; Neely *et al*., 2002).

Determination of strategies is the second perspective in the performance prism. It answers the question, "what are the strategies that should be adopted by the organisation to ensure that the wants and needs of its stakeholders are satisfied?" (Neely *et al*., 2002). After the determination of strategies comes the processes and capabilities perspective which addresses the question on the processes that need to put in place to allow the execution of strategies and capabilities that are required to operate these processes, both now and in the future (Neely *et al.,* 2002). Cengic and Fazlie (2008) explains the need to identify the most important processes depending on the core business of the organisation and focuses attention on them rather than simply measuring the functions of all processes. It is essential to ensure that processes and capabilities that matter are maintained in the organisation to establish a competitive edge over its rivals (Vansteenbrugge, 2014). Processes cannot function on their own, they need capabilities. They need people with certain skills, some policies and procedures about the way things are done, some physical infrastructure for it to happen and some technology to enable and enhance it (Vansteenbrugge, 2014). Capabilities can be defined as the combination of an organisation's people, practices, technology and infrastructure that collectively represent the organisation's ability to create value for its stakeholders through a distinct part of its operations. Nankeivis and Compton (2006) observes that measurement will ensure that the critical capability components of the organisation that make it distinctive and also allow it to remain distinctive in the future are maintained.

The stakeholder contribution perspective answers the question on the part played by stakeholders if organisational capabilities are to be maintained and developed (Neely *et al*., 2002). According to Tangen (2004) the strength of the performance prism is that it first identifies the stakeholders and their needs and then identifies the most appropriate strategies to meet identified needs and wants. This is in line with any quality initiative which defines quality as meeting or exceeding customer expectation. In so doing, the framework ensures that the performance measures have a strong foundation. The performance prism also considers new stakeholders such as employees, suppliers, alliance partners and others who are usually neglected when formulating performance measures whose contribution is pertinent in the continual wellbeing of the company

One weakness is that although the performance prism extends beyond traditional performance measurement, it offers little about how the performance measures are going to be realised. In addition, Striteska and Spickova (2012) noted another weakness in that the framework does not offer how these performance measures are to be implemented.

The Performance Pyramid

An EBSCOhost query on "Performance Pyramid" and "Higher Education" yielded only one result. These results indicate that the area is under-researched. The Performance pyramid was constructed by McNair *et al*., (1990) and was further developed by Lych and Cross (1992). The performance pyramid consists of a four level management control system with performance evaluation criteria in order to achieve organisational goals from top management, the performance process measures goals achieved in a bottom-up direction (Vu, 2021; Taouab and Issor, 2019; Tangen, 2004). It depicts a

pyramid shaped performance measurement system that start with defining an overall cooperate vision at the first level which then translate into individual business objectives after having defined the company's strategy and vision (Albinaite and Narkuniene, 2018) The second level business units set short term targets of cash flow and profitability and long term goals of growth and market position (Tangen, 2004). The business operation system bridges the gap between second level and day to day operational measures for example, satisfaction, flexibility and productivity (Vasikainen, 2014). At the base of the pyramid is a plan-do-check-act cycle with four key performance measures, quality delivery cycle time and waste such as number of accidents, percent rework and scrape (Vasikainen, 2014).

A performance pyramid establishes a strategic alignment between performance measures at different hierarchical levels within an organisation so that each function and department drives towards the same goals (Tangen, 2004; Gross and Lynch, 1992; Vansteenbrugge, 2014). The model is constructed in such a way that there is a strong link between the categories which leads to linkage between the different measure. The performance pyramid ensures an effective link between strategy and operations by translating strategic objectives from the top down on the left side based on customer priorities and measures from bottom up on the right side of the pyramid (Tangen, 2004). Objectives and measures become links between the company's strategy and its activities. In other words, objectives are translated downwards through the organisation while measures are translated upwards (Olve *et al.*, 1999).

On the strengths of the performance pyramid Gholayini *et al.*, (1997) observed that it attempts to integrate corporate objectives with operational performance indicators. It is further observed that it clarifies the objective of the organisation leading to better understanding of the different processes within an

organisation (Vansteenbrugge, 2014). Other scholars further point out that the performance pyramid integrates corporate objectives and operational performance indicators (Striteska and Spickova, 2012; Taonab & Issor, 2019; Vu, 2021).
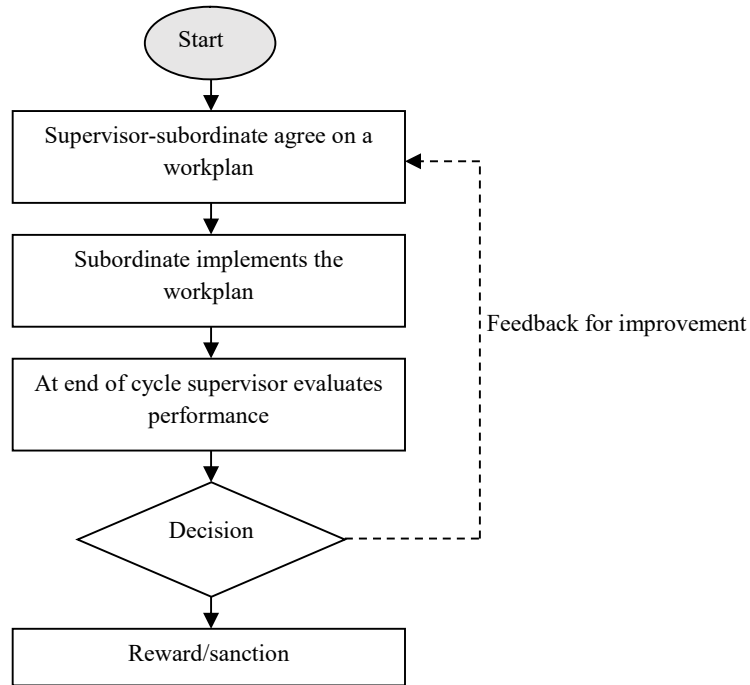
However, the framework has quite a rigid character which makes it redundant for many organisations; categories such as waste are more difficult to apply to service organisations (Vansteenbrugge, 2014). This observation is however refuted by Ignat (2021) who noted that the model is suitable for assessing both financial and non-financial factors in a manufacturing or service providing enterprise.

Performance Appraisal

Armstrong and Taylor (2020) defines performance appraisal as a formal assessment and rating of individuals by their managers usually during annual review meetings. Akinyele (2010) noted that it entails the process of measuring, developing and enhancing the work performance of staff. Performance appraisal is a major part and a key component of a systematic process of performance management. Pollack & Pollack (1996) explained that in a traditional performance appraisal process, supervisors and subordinates develop a work plan at the beginning of the performance cycle. The developed work plan becomes the basis of employee evaluation at the end of the performance year (Kakkar *et al.*, 2020). Wamimbi and Bisaso (2021) described performance appraisal as being at the centre of performance of all organisations particularly in this era of stiff competition where it is used as tool that seeks that seeks to improve the quality of service delivery. Performance appraisal assist in making decisions that leads to decisions such as promotion and compensation

or even dismissal (Yahya, 2020). Figure 3 provides a general process flowchart for performance appraisal.

Figure 3: Flowchart of the performance appraisal

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                        ┌─────────┐
                        │  Start  │
                        └─────────┘
                             │
                             ▼
        ┌────────────────────────────────────┐
        │  Supervisor-subordinate agree on a  │◄ - - - - - - ┐
        │              workplan               │              │
        └────────────────────────────────────┘              │
                             │                               │
                             ▼                               │
        ┌────────────────────────────────────┐              │
        │    Subordinate implements the       │              │
        │              workplan               │     Feedback for improvement
        └────────────────────────────────────┘              │
                             │                               │
                             ▼                               │
        ┌────────────────────────────────────┐              │
        │  At end of cycle supervisor evaluates│             │
        │            performance              │              │
        └────────────────────────────────────┘              │
                             │                               │
                             ▼                               │
                         ◇ Decision ◇ - - - - - - - - - - - -┘
                             │
                             ▼
        ┌────────────────────────────────────┐
        │           Reward/sanction           │
        └────────────────────────────────────┘
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It is important to highlight that the performance appraisal process often includes a self-assessment (Igbojekwe et al., 2015). The utility of self-assessment is that it allows for self-reflection on part of the subordinates.

Performance Appraisal Techniques in HEIs

Performance appraisal is that component of the Performance Management System that deals with how performance evaluation is done.

Supervisor-Subordinate Appraisal

This traditional system is mainly used in African HEIs (Alboushra, *et al.,* 2015). Oshodi (2011) also noted that a number of Nigerian public HEIs continued to practice the traditional staff appraisal system which usually utilize a form of top down approach where staff are appraised by their supervisors. However, Fletcher and Williams (2016) noted that the biggest limitation of annual reviews is that it puts emphasis on financial rewards and punishments. They further noted that appraisals hold employees accountable for past behaviour at the expense of improving current performance and grooming talent for the future which is critical for the organisation's long term survival (Fletcher and Williams, 2016).

In the appraisal system, the supervisor monitors and review performance at set times in the performance cycle. Desmet and Gaganon (2018) advised against the idea of "reviewing performance at set times" in this time in age where rapid innovation is a source of competitive advantage. As technology is reshaping the competitive land scape Carter et al., (2011) noted that organisations would not necessarily want employees to keep doing the same thing due to technological advancement. Organisations must employ agile systems that allow employees to keep revisiting two basic questions: What am I doing that I should keep on doing? What am I doing that I should change? (Cappelli and Tavis, 2016).

360^0 Appraisal

The 360^0 appraisal is also known as the multi-source assessment and the 360^0 feedback. In higher education, the 360^0 appraisal include self-appraisal, peer evaluation, evaluation by students and evaluation by the supervisor who is usually the head of department (Niyivuga *et al*., 2019). The strength of this method is that it draws feedback from a number of sources. Bailey (1997) posits

that the success of the 360^0 appraisal depends on the way the feedback is perceived and processes as well as the willingness of the recipients of that feedback to engage in self-reflection. Becket and Brookes (2006) noted that student's feedback if driven by academic members of staff, it is most likely that it would be used for developmental purposes. Das and Panda (2015) indicated that, the method is particularly important for non- managers to help people to become more effective in their current roles and also to help them understand whose areas they should focus on if they want to move to managerial roles. Strengths of the 360^0 appraisals in that self-evaluation allow members to express their own views about their performance and reflect on the personal and institutional factors that have an impact on their performance. They further noted that peer evaluations by faculty members in the department with subject knowledge and pedagogical expertise will be in a position to guide and support others to improve their performance (Niyivugu *et al*., 2019). Staff would benefit more from the comments by the more experienced staff (Smuther, London and Reilly, 2005).

The University of Minnesota is an example of an institution that has used the system successfully in assessment of deans (University of Minnesota, 2017). The system has assisted the University in that it supports the broad goals of leadership excellence and managerial accountability and it also allows for efficient utilization of resources (University of Minnesota, 2017) . In Africa and Asia, the use of 360 degree feedback has resulted in the improvement of quality in teaching at the University of Zambia's School of Medicine as well as in some HEIs in Pakistan (Banda, 2012; Siddiqui, 2017; Rasheed, Aslam, Youraf and Noor, 2011).

The Lean Six Sigma is one system that can be used in HE according to available literature. Simons (2013) recommended that improving the education

system can be done in the same way as other industry. The system is recommended in higher education because it increases student satisfaction, providing institutions with problem solving templates, as well as changing the institution's culture and other benefits (Antony, 2014; Simons, 2013).

From available literature it appears that the most popular performance measurement system in higher education is the balanced scorecard. This is probably due to the adoption of business models in most universities. This Privatisation and commodification of higher education is a burgeoning phenomenon in higher education (Santioago *et al*., 2008). As such, the principles and practice of BSC find relevance and application in higher education. In the higher education sector, early adopters of the BSC have won prestigious national quality awards (Karathanos and Karathanos, 2005). This has been so because the BSC promotes a balanced performance leading to institutional overall performance improvement. The attractiveness of the BSC is further compounded by the fact that it incorporates perspectives of all university stakeholders (Kaplan and Norton, 2001).

The BSC is very suitable in HEIs in line with Kariri (2018) who noted that the tool has been tried and tested by various HEIs and held as one tool that if well implemented in HEIs. It ensures the fulfillment of the mission and vision as well as a learning model that supports continuous improvement and environmental responsiveness (Kariri, 2018).

The prominence of the BSC as a performance measurement system in higher education is not to down play other performance measurement techniques. The strength of the performance prism starts with stakeholder identification, followed by establishing their wants and needs. Strategies to tackle these wants and needs are then tackled at the end according to Nelly *et al.*, (2002). Starting with stakeholder identification and establishing the wants and needs points

towards the results orientation of the performance prism. This makes the performance prism attractive HE.

Results of the current study demonstrate that the performance pyramid is one technique that can be used in HEIs to measure performance. According to Vasikainen (2014), the base of the pyramid is the plan-do-check-act cycle which makes the model an effective tool for continuous quality improvement. The tool is very applicable to HEIs as it can be used to establish the much needed strategic alignment in the PMS.

Findings of this study indicate the need for argile PMS that are ICT based. Argile systems are recommended as traditional appraisal systems are punitive rather than developmental (Cappelli and Tavis, 2016). This is in line Desmet and Gagnon (2018) who are against reviewing performance at set periodic times because employees need to keep checking on any changes that might be required at any given time to keep up to date with the changes in the environment.

Finding from this literature review study demonstrate that the 360^0 appraisal is very prevalent in higher education. A study by Niyivuga et al., (2019) realised that student-staff evaluations and evaluations by HODs were the most applied in performance management in the Rwanda higher education system. The results were consistent with the conclusion by Chen and Hoshwer (2003) that in most universities student ratings are most influential. The 360^0 appraisal is recommended in HEI because students are an integral part of the learning process and as primary consumers; their objective views are likely to lead to continuous quality improvement initiatives (Niyivuga et al., 2019; Igbojekwe et al., 2015). Self-evaluation is important because it gives one a chance to reflect and self-introspect on one's performance. Peer evaluation is also useful if it is

done by members that have subject knowledge and pedagogical expertise that are able to guide and support others in the teaching process.

Conclusion

The developing world has been facing the challenge of importing development models from the west and superimposing them on their own systems without taking into consideration local conditions. For this reason, most of these development programmes fail dismally.

In an era of university ranking, performance management has become a *sine qua non* of the pursuit of excellence. Machingambi *et al*., (2013) observed that PMS can be a good mechanism for quality assurance in education if implemented in the right manner and enabling environment. The conclusion from the study is that most institutions of higher education relied on the results based management system and the lean six sigma for performance management. Taking positives from the reviewed performance management systems and adapting them to suit the conditions at a particular institution goes a long way in improving the quality of service delivery in institutions of higher learning.

Recommendations

Universities must ensure academic excellence in a time of increasing competition in the higher education sector. One of the ways to do this is the usage of appropriate PMS that reflect and give the opportunity to improve on its research and teaching quality and that of its facilities and staff. The literature exploration has discussed a number of performance measurement techniques and philosophies that drive PMS. Combining these systems by taking the strengths of each system and tapping on the power of communication and

information technology to come up with bespoke PMS to address quality challenges that are bedevilling HEIs is recommended. Usage of appropriate PMS in HEIs is good practice that every institution must embrace if they want to make a meaningful contribution to the development of a nation

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