

September 2019

The Use of Performance Measurement in Universities of Pakistan

Muhammad Tanveer

Binary University, Malaysia, cans_tanveer@hotmail.com

Asif Mahbub Karim Dr.

Binary University Malaysia, drasifmkarim@gmail.com

Follow this and additional works at: <https://digitalcommons.unl.edu/libphilprac>

 Part of the [Business Administration, Management, and Operations Commons](#), [Human Resources Management Commons](#), [Library and Information Science Commons](#), [Management Sciences and Quantitative Methods Commons](#), and the [Other Business Commons](#)

Tanveer, Muhammad and Karim, Asif Mahbub Dr., "The Use of Performance Measurement in Universities of Pakistan" (2019). *Library Philosophy and Practice (e-journal)*. 3010.

<https://digitalcommons.unl.edu/libphilprac/3010>

The Use of Performance Measurement in Universities of Pakistan

1. Muhammad Tanveer

PhD Research Fellow, Binary University of Management & Entrepreneurship, Malaysia

cans_tanveer@hotmail.com

2. Dr. Asif Mahbub Karim

Associate Professor & Dean, Binary Graduate School, Binary University of Management &
Entrepreneurship, Malaysia

drasifmkarim@gmail.com

Abstract

Purpose: The performance measurement includes collecting the information regarding the individual's performance to analyze for the reporting. . Performance measurement's main aspect is to identify the exertion are being achieved or not. This is the main purpose of performance measurement in the current study of Pakistani Universities. Moreover, the focus on the performance measurement is still not very strong in Pakistani educational system. Few observations made from the recent studies are that the enrollment in the university has been raised up to a great extent from past few years.

Methodology: This research paper is focus on "The Use of Performance Measurement in Universities of Pakistan" the data were gathered the external sources that is the secondary sources mainly literature review for data collection.

Implications: The performance of Pakistani Universities or higher education institutions providing support ll improve due to performance measurement. Performance measurement in the higher education always calls for higher accountability for its trends to implement. Things that are not good for the performance will be either eliminated or reduced whereas things that are really benefiting the university will be increased and more focus will be placed on them.

Keywords: Performance, performance management, performance measurement, performance measurement in universities and Higher education institutions.

Literature Review

Background of Performance Measurement

The entire procedure in which the performance of the individual is critically analyzed refers to the concept of performance measurement. The performance measurement includes collecting the information regarding the individual's performance. After the collection of information, this information is analyzed (Landy, et al., 2017). Then lastly after proper analysis the overall performance of the individual is reported. Performance measurement's main aspect is to check whether the target that was initially set before starting the work is being achieved or not. This is the main purpose of performance measurement. Performance measurement is an old concept but it got famous from previous two decades. Now performance measurement got prominent and every researcher is valuing it as it holds huge importance in almost every sector either education or business or any other sector where people are involved and their performance needs to be measured (Speklé & Verbeeten, 2014). It is a research topic that has been researched, discussed and studied since early 1990's. One of the research states that performance measurement was there in 1940s. An article was written in 1943 by International City Management Association based on the measurement of performance for the municipal activities. Performance measurement made its way in the government by the systems analysis process that were presented to the defense department. All this happened in the Kennedy administration. After the introduction of planning programming budgeting system (PPB) introduced by the Johnson administration a number of other agencies started focusing on the measurement of performance (Melnik, et al., 2014). Governments now are using a number of techniques of performance measurement and planning out the budgeting properly with the help of performance measurement. After doing this and practicing it carefully the budgeting of the governments improved up to a great level (Bhattacharya, et al., 2014). The social programs introduced back in early 1970s needed to be assessed accurately and for that a system was required. Performance measurement was a system that really helped and these social programs were properly assessed with the help of performance measurement. But the interest of performance measurement decreased in 1980s. Due to the fact that people back then were unaware of the benefits of performance measurement and what good changes or implications of decision making can be made by the help of performance management. After this the demand of public holding government entities accountable increased. With this increasing demand the concept of

performance measurement reenergized and so or less it became a requirement by the government to use it for their efficiency and effectiveness. Soon after that various resolutions were made and passed based on the implication of performance measurement by the associations. For example national academy for public administration forced the government to put its focus on setting the goals along with that measure the performance of all the members so that proper evaluation can be done. In the year of 1993 the federal government passed an act regarding the performance of government and results or the outcomes of that performance with the aim to do strategic planning, set the goals appropriately and finally measure the performance. At the time of independence in Pakistan which happened in the year 1947 the University of Punjab was the only university at that time (Van Horenbeek & Pintelon, 2014). The number of colleges were around forty. Although after that a number of universities and colleges were establish but the government was not well off to provide with a good quality of education, financial resources and the physical resources. In the meanwhile the private educational institutes started to provide with the opportunities and facilities up to the demands and desires of the students. This was one of the major changes brought by the private sector in the history of Pakistan. These private educational institutes are defined as the not private, and can be managed, found, financed and owned by the actors that are not present in the state. So as we have discussed above that the number of universities were very few and the concept of making new universities in Pakistan started quite late and with slow speed. Therefore the concept of performance measurement in Pakistan also started very late for obvious reasons. Pakistan is a developing country and has started developing very late as compared to the European countries (Arena, et al., 2015). The phenomenon like performance measurement therefore came into Pakistan after quite years when they were introduced. Moreover the focus on the performance measurement is still not very strong in Pakistani educational system. Few observations made from the recent studies are that the enrollment in the university has been raised up to a great extent from past few years.

Performance Measurement Process

Performance measurement is not just the meeting in which the annual performance of the individuals are reviewed, it is a lot more than that. There is a whole process through which the

performance is analyzed and examined (Tadeu de Oliveira Lacerda, et al., 2016). If the measurement of performance is to be done with perfection then few things should occur:

- First the decision is to be made that what is the thing you intended to measure and how you are going to measure it.
- The data needs to be identified and collected with respect to what you seek to measure.
- The system or the personnel who will analyze the data, should be provided with the data that has been collected.
- Data needs to be in the form of performance information so for that analyze the data in detail and summarize it properly.
- This information should be communicated to the personnel who are going to utilize the data for their important decision making process (Van Horenbeek & Pintelon, 2014).
- Interpretation of the information needs to be made so that its implication is clearly understood by every involved party.
- Lastly the information is effectively used so that actions can be taken to enhance the quality of performance.

These are the process that makes the performance effective and efficient and bring it to life. The framework for performance may help to fulfil the first process in which the decision is made regarding what and how to measure (Pádua & Jabbour, 2015). But all other processes are not fulfilled by the framework of performance measurement for example balance scorecard. So if other six activities of the performance measurement process is not fulfilled then one cannot bring effective performance to life. Until and unless other resources, process or skills are already assigned by which these six activities can be done or their final output can be achieved (Siham, et al., 2015).

All the seven steps plays a very significant part in bringing value to the performance of system/component, individual, organization, institute or groups. These steps work together and is an ongoing process that constitute a cyclic process where performance is monitored, measured and implication of performance measurement is done in this process. Following are the seven steps that makes up the entire performance measurement process (van der Aa, et al., 2016).

Step 1: Decide What & How to Measure

The selection of things that needs to be measured should be appreciate enough. The thing you intend to measure should be worth measuring. Here you need to decide, what are the results that is important for you to measure and should be measured. What are the processes or measures through which you think you should measure it. Define these measure clearly so that you have a clear image of what are the operations you need to do to use these measures for the performance measurement.

Step 2: Gather and Collect the Related Data

The data collection regarding the performance is very crucial and critical. The reason for this is that the reliability of this data is very important. So it is crucial with respect to its integrity. It is very important to decide how you are going to gather this data which must has integrity. Since the data must suit the purpose due to which you are collecting the data. There are two considerations here. Number one the requirements of the data should be met that has been preset when the process started for the performance measurement. Second consideration is that you need to design, implement and improve the systems of data collection so that you are able to improve and enhance the availability of the data plus its integrity (Leyer, et al., 2015).

Step 3: Manage the Collected Data

In order to know which data you can access you need to see where you have stored it and how you have stored the data, with which speed you can access the data, with what ease or difficulty you can access your data and how many functions you can apply to your data to make the best use out of your data. Your assumption of easily accessing the data can go wrong and you might find difficulty while accessing the data so in order to make sure that this won't happen certain things should be kept in mind (Genovese, et al., 2014). Use data referencing model so that the management of data is cost effective and it allows you to cross function the usage of collected data. Then after that extract things that you think is important from your data. Make sure it's reliable and prepare the data in a way that further data analysis can be done.

Step 4: Convert the Data into Information

When the data is analyzed then the raw data will no longer be called as data. It is information now. This is because you have extracted the important things from your data and now your data is information for you it is not your data (Shen, et al., 2016). Now you should be aware that you have correctly analyzed your data and the information you have just produced is in the form that whatever your intention was to collect the information that intention is fulfilled and this information is answering all of your desired questions. Analysis of data should be simple and after your analysis the information should satisfy with the answers to your questions.

Step 5: Communicate the Information Effectively

When you are communicating your performance information you are actually influencing. So the information that is being communicated should consist the following things: it should be trustworthy, simple, to the point, relevant and capable enough to answer the questions of your audience who are receiving this information from you (Bititci, et al., 2015). Graphs is an effective way by which you can interpret your information that will help in decision making. Design or develop dashboards or report of performance for your audience. Lastly implement and design performance report process.

Step 6: Interpret Information through Implication

By interpretation here we mean that the performance information that you have gathered should be formed in a way that it is a conclusion of the entire process providing you with the most important thing in the performance information, by that we mean that the important information is highlighted and prominent so that the audience gets to know this is exactly the current situation and this is what going on with the performance. Turning information into implication means that the information can distinguish between the actual messages which is intended to give. With this the audience will get to know what trend is going on in the performance. This will help audience to reach the conclusion that what actions they need to take or if the performance is good enough what actions can be taken to sustain this quality of performance (Morrow Jr, et al., 2015).

Step 7: Converting Implications into Actions

After you have studied and evaluated that this is what going on with the performance, you know what decisions you need to make in order to enhance the performance, to what degree you should improve the performance and what are the ways through which you can improve the performance. Now you need to design processes regarding decision making that effectively utilize your performance measure (Landy, et al., 2017). You need to deeply examine the root causes of the results of performance. After that you should set goals and targets that will enhance and increase the quality of performance. You should be able to connect the improvement process with that of planning process with the help of your performance measure.

This process clearly tells us that performance measurement is not simple but it is complex. If you aim at getting the right result for your performance measurement that you should fulfill every single step with clear detail and analysis. No step should be skipped if you want the most appropriate result.

Performance Measurement in Universities

Universities aims to create and transmit knowledge. The need for performance measurement in the universities is based on bringing excellent quality of academic education and raising the level of academic excellence (Van Dooren & Van de Walle, 2016). From the previous years we have observed that universities have become a corporate actor that is acquiring significance in systematic coordination in present years. This influential change to higher education system was brought by the entrepreneurial and management theories. This raises the question that in university what do you mean by efficiency and effectiveness and what are the ways through which we can measure it and enhance it. The content of the university performance measurement is very much related to that of the universities goals and objectives. Here the indicators are the tools through which performance of the university can be assessed and calculated (Lönqvist, 2016). Various indicators that forms up a whole set of tools helps to estimate the operating performance of the universities. A researcher stated that the indicator symbolizes a sign through the performance of the system can be represented and can be judged. There are a number of benefits that can be enjoyed by implementing performance measurement in schools and universities. One of the

benefits is that it provides us with the basic and the primary aspect of the whole system of education. On the other hand if the indicators are formed in such a way that they are strict in nature then they can be used for other purposes as well. Those purposes may include public communication or the educational reform. A monitoring indication is very important in the performance measurement because that will tell us about the various functions and operations that are occurring in the universities (Kearney, 2018). Monitoring always holds a lot of importance because it provides with essential information about the ongoing activities happening in the university. The framework of the work gives an idea about what things the company should and the university do to enhance its work productivity and the work mechanism. There are other focuses of the educational system but out of them most keenly observed is that they strive to be the best institute in the country and everyone knows how worthy that particular institute is. All the universities desire to have the input, process this input and then produce an output and store this entire information. No university like in particular cares about the effectiveness and efficiency in education because there they will not be a business alone. They will be service providing institutes. This approach is very rare to see as all the universities and colleges have become a business and keep on finding ways through which they can increase money that all they want and that's all they are working for. The entire educational system should be based on goodness and enhancing the quality of life of the citizens as well as the entire nation. But this main and basic objective of the entities is not easily seen and observed (Connelly & McColl, 2016).

University Constraints and Characters in Performance Measurement

Universities are categorized by ambiguity as well as goal diversity. This phenomenon is a part of a number of universities. It is not easy to know what the universities are actually aiming at and what their goals are (Marginson, 2014). So readers most probably won't have a clear idea that what is the actual goal of a university. The reason for this ambiguity of goals is that the goals of the universities are very complex and huge or broad. So to know these goals in the first place is not an easy task. The goals might consist of world class research, participation in the regional development or social impact and so on. So it is obvious from the examples that such goals will be difficult to understand. Most of the information related to this will be hidden by the administration and university policies. Universities not necessarily work with to aim to maximize

their profit like we observe in the private universities. Factors like cost reduction, aggressive resource seeking and generating profit might not be the mind set of them. Contrary to this universities might focus on keeping up with stable and maintained status of operation. This will help them to achieve and accomplish their organizational objectives (Kallio & Kallio, 2014).

Due to this ambiguity in the goals of the universities it is not possible to follow the rational goal model of performance measurement that determines the organizations goals beforehand. And determining the organizations goals is the first priority and major aspect of this model. Therefore the organizations with unclear aims can be determined by the help of other factors for example the capability of obtaining resources, the condition of fiscal health and the capability to satisfy the stakeholders of the university etc. The approach that is being discussed is very much similar to that of checking the human body, in which we see that all the part of the body are performing their function properly or not. Likewise we can measure the performance of the university by checking that all the operations of the university are working or functioning properly. There are many functions of the university out of which two functions are of major importance that is academic and management. The entire performance of the university is a combination of all these functions. So the efficiency and effectiveness of the university is based on these functions operation in the university (Kallio, et al., 2017).

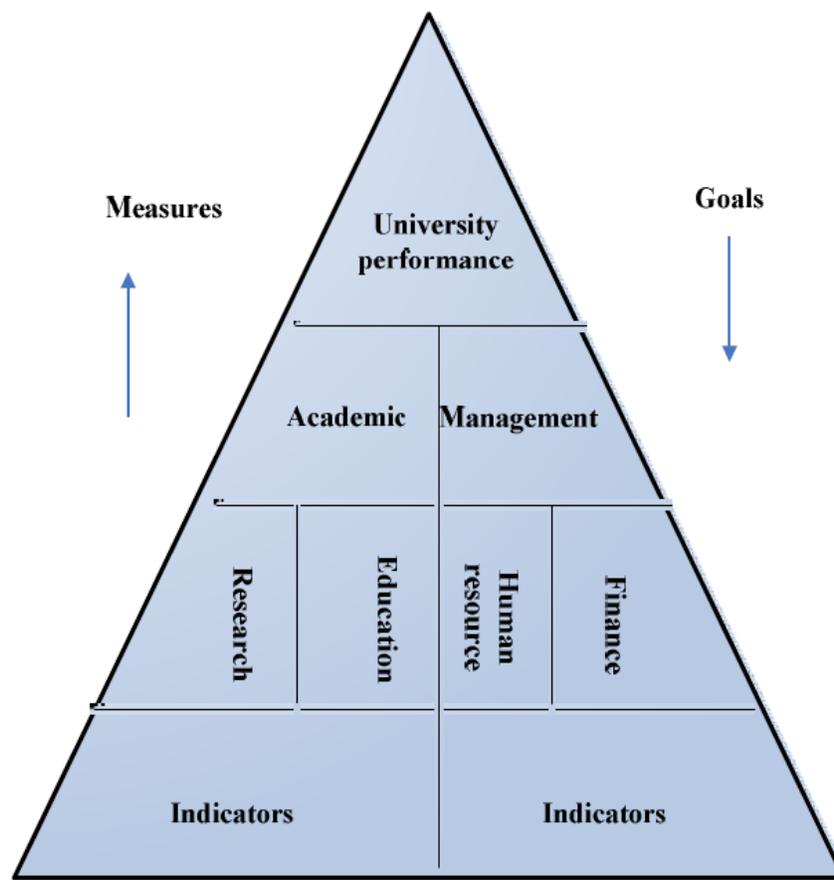
The Multi-dimensional Framework of Performance Measurement

The framework focuses on to form a division of the academic performance and management performance of the university. The central character of a university's research and education is what we deal in the academic performance. There are two major resources that comes in the management performance. These two resources determines and tell the capabilities and abilities of the university (Trumpp, et al., 2015).

A model was established in 1992 by Cross and Lynch which aimed to determine the performance of an organization based on different hierarchal levels. This framework helps to determine the objectives of the organization and measure the chances to achieve those objectives in the best way possible (Yaghoobi & Haddadi, 2016). A number of layers are made in this model each aimed at determining different objectives of the organization. All of these layering is done on two major

divisions that is finance and market dimensions. These divisions or the dimensions are further divided and focus on a number of factors such as the customer satisfaction, productivity, flexibility, cycle time, waste, quality and delivery. The purpose of the different layering in the model is that at different levels the organization emphasize on different things and their focus vary from level to level. These different operations at different levels can easily be monitored with the help of performance indicators in the model's dimensions. The dimensions work together thus they support each other. This way they connect the operations of the organization with the objectives and strategies of the organization (Kim & Bryan, 2017).

In accordance with the model established by Lynch and Cross notion of pyramid. A similar framework has been establish with the aim to measure the performance of the universities.



The pyramid provide us with the systematic association of the dimensions of the performance as well as the indicators forming a whole framework for the performance measurement. On the top,

the pyramids represents the vision and the objectives of the university that it aims to achieve and accomplish (Bedoui, 2015). Then it divides into two dimensions that is the management dimension and the academic dimension. These two are very closely connected with the goals and objectives of the university. These two major dimensions then are further divided and splits into four sub-dimensions or divisions. These dimensions includes finance, research, human resource and education. This is the reason that it creates higher strategic and a balance and quality performance measurement. Leading it to the top managers along with the main indicators of the performance. Moving on at the bottom and the middle level of the pyramid, the model further splits into four of the sub-dimensions or divisions. Here the focus is on the creation of the operational view of measuring performance in the university setting (Baird, 2017). The high level or the top level managers will view the information obtained by the indicators through which they will be able to form a central measurement regarding the management and academic performance. A measure up model is to be followed for the measurement of performance.

Key Performance Indicators and Its Use

Key performance indicators denoted by KPIs. These indicators are very crucial in determining and finding out the current and the future status of the organization. In this the competitive advantage may be created over the participants or the competitors (Parmenter, 2015). The key performance indicators may provide with a clear image of the organization ignoring and not spending time on the information and its volumes. Here the level of the information is very high and may not be easily implemented in the decision making. Key performance indicators offers an entire package of competitive analysis through which the final outcomes can be compared with that of the other organizations (Podgórski, 2015). Key performance indicators and its use cannot be implicated instantly. But its use is very important and effective and considered to be a famous tool with respect to performance measurement. In one of the reports published in the year of 2006 around 10 high degree key performance indicators are mentioned to measure the performance of the institutions. Keeping in mind the governors of the higher education. In this the financial as well as the non-financial both aspects will be covered. At this time the emphasis of key performance indicators is on the selection and development of those indicators that can best help us to study and analyze the academic and the management dimension as mentioned in the above Multi-dimensional

Framework of Performance Measurement. The discussion and arguments of the key performance indicators is no doubt a hot topic. But the emphasis on the selection of key indicators among other indicators of performance is very less. There are various methods through which the key performance indicators are selected. Criteria is set to select the indicators. It's critical and crucial to identify these indicators that holds power and to identify the performance at a certain level of measurement. This method of selection can be differentiated institutionally. This method of selection may come from the subjective decisions of the management and there is a possibility that it is driven by the outside stakeholders of the universities (Bai & Sarkis, 2014).

The primary indicator of performance measurement in most of the universities is the academic performance. Through the help of academic performance indicator people can easily identify how well or bad a university is performing and what the standard of that university is (Star, et al., 2016). The quality of the education that is provided in the university will also be known by the help of the academic performance. The focus on the academic performance will not be the same for all the universities. It is different for different universities, as there is shift of emphasis from one discipline to the other discipline. One of the examples that can be quoted here is that the research universities might be directed to focus more on the resources on activities of research than the activities of education. This is the reason why we say that the indicators might take more credit in the research dimensions in entire or whole academic performance's measurement. The academic activities of the university may be affected by the goals that university aims to achieve (Nappi & Rozenfeld, 2015).

The previously mentioned pyramid framework of performance measurement shows and highlights the importance and significance of the management performance in the overall university's performance measurement. The stress of the effectiveness and efficiency of work is very high and we all are aware of that (Arena, et al., 2015). So the managers feels this stress and will be held accountable for the allocation of different resources in the university. If they fail to allocate the resources properly and in the right place then huge losses will come in the way of university. Human resources as well as the financial resources both are very significant and essential to the management performance. Hence the significance of management performance speaks for itself. This along with other factor should be evaluated properly in order to reach an effected outcome or results of the performance in the universities. Completing focusing on one factor again is not a

good idea, this is the reason why all the factors should be dealt according to its nature and the value it holds.

Benefits

Diagnostic Feedback

When the performance measurement works best it benefits in a number of ways. For example, it provides with the information that tells us the basis of student's knowledge. We can also have an idea about what is the basis of students' performance. The needs of the students can also be identified by the help of the performance measurement. An idea about who should be taught can be identified by assessing the performance (Powell, et al., 2013).

Sets Standards

Performance measurement is very helpful for the educators to set the standards. It gives an idea to the management of the education sector to know what should be the standard that they need to set and achieve. Not only that, after achieving the standard, that standard needs to be maintained because that is the key of success (Bhattacharya, et al., 2014). Achieving a standard is as important as maintaining that standard. It also provides us with the answer to the question that what performance will help us to demonstrate the true understanding, knowledge and mastery?

Progress Evaluation

The information that tells us, how the students are actually doing will only be determined through the process of performance measurement. The teaching methods that have proved to be the most effective and efficient can be judged by the help of performance measurement and this is one of the most important benefits of performance measurement (Speklé & Verbeeten, 2014). The teaching approach that has improved the learning of the students can be evaluated through PM. The changes or the modification that must be done in the lesson which will help the students can also be assessed through PM.

Student's learning

It is very important for the universities to know what knowledge the students have and what are the things that they are learning? The information about what the students have learned can be guessed by performance measurement (Micheli & Mari, 2014). The knowledge that the students are gaining is it up to the mark or not. So the students can easily be able to communicate this knowledge. Is the student able to demonstrate and make use of this knowledge in their projects and assignment or in any other work? All the answers to these questions will give us the output regarding the learning of the students.

Motivation of Performance Enhancement

Performance measurement will not only motivate the students but also the teachers to improve their performance. For students it's the learning they need to improve and for the teachers they need to improve their teaching style if it is not appropriate or fails to achieve a good result from the students. The students will get to know how they are doing in their studies. What are the ways through which students can improve in their studies? What other things students should learn in order to perform better will also be identified by the help of the performance measurement and its outcomes (Morrow Jr, et al., 2015). Teachers will get an idea that which techniques are working best for the students to learn and respond. What are the ways that will help the students more and in a better way? What are the techniques that should now be used for further betterment of academic education will be known only through the performance measurement.

Performance Expectations

When the management as well as the students are provided with a set of duties that they need to follow, they surely will be able to have a clear image of the guidelines that the university wants them to fulfill (Taticchi, et al., 2014). This is how they will fulfill the expectations of the universities and provide them with the performance according to the universities needs and wants. This way everyone at the university will be able to evaluate their job and will also be able to know what role they are playing in the betterment of the university.

Strengths and Weaknesses

Performance measurement is a process through which universities get an idea whether management and the students are working according to the objective of the university or not. This will also help the university to judge and see if they are going ahead or they are moving back or the progress is still the same as it was previously with no change (Melnyk, et al., 2014). Those who are working effectively and with efficiency will get a reward or better position while those who are not performing well will be provided with further training. This is how the strengths and weaknesses will be assessed through performance measurement.

Data Evaluation

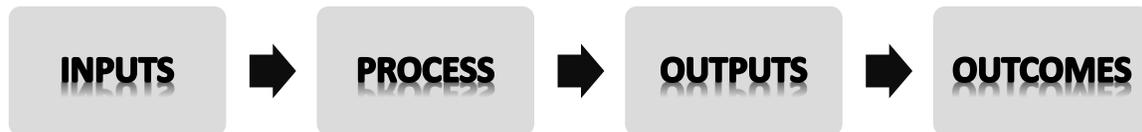
University can easily assess itself with the help of the data evaluation. It will also help them to find out what are the strengths and the weaknesses of the university. Or which operations or activities of the university possess strengths and which operation or functions of the university possess its weaknesses. Through this data collected through performance measurement process we can divide the management into different categories (Yang, 2016). For example those who need training will be in one category and those who can work on their own will be in the other category. This data evaluation will also be helpful in the decision like changing the faculty of the university, reducing it or expanding it. Changes in the resource allocation can also be evaluated and decided by the help of this data evaluation.

Standardization

If the performance measurement process is designed and structured in an appropriate way then the criteria to evaluate the members of the university at the same position will also be the same. For example the performance of the members of administration department will be assessed and evaluated with the same terms and conditions or criteria. The hiring and firing practices will be same and equal for everybody in that particular department (Upadhaya, et al., 2014).

Model for Performance Measurement

Things that can be measured with the help of performance indicator can be understood by the help of a general model known as input-process-output-outcome.



The whole process is understood by the help of the arrows as shown above. This model starts with the inputs, processing these inputs, after that moving to the outputs and then finally reaching the outcomes which is the final or end result of the entire process of performance measurement. Performance measurement in the higher education always calls for higher accountability for its trends. These trends of performance measurement get influenced by two major factors. One of the factors is the call for university to enhance the whole management system's effectiveness and efficiency (Matin & Azizi, 2015). On the other hand the second factor that influences the performance measurement's trend is the higher cost of higher education. There are limitations on the investments made by the universities. These constraints are forced by the government. Plus the emphasis or stress on value for money recommends universities to carefully spend and allocate the funds provided to the university. All the investments that the government and the individuals are making in the university should provide a return that return could be in a way that the educational output is increased or the society somehow gets benefited or the employment in some way gets increased. As the demand for accountability is increasing, people are interested in not only the outcomes but the outputs as well for them both the factors are important, as these factors contribute to the final result that is the performance measurement. So these two factors are indeed valuable in the equation of the model presented above (Bhattacharya, et al., 2014).

Both of these two factors outcome and output does not combine the entire image of the academic activities of the university. For example, students learning are determined through the educational activities from the input. Processing it to give an output then finally reaching to the last factor of the equation that is outcome (Sellitto, et al., 2015). Up till now everyone thinks that student's skills, knowledge and capabilities are the outcome of the educational activities. This will not tell

about the process through which the students are learning, also what and how the universities are playing their role in the process of this learning of the students. The quality of education can only be found out by the managers by knowing what the process is through which students are learning. This is the reason why process needs to be measured by the managers. This will help them to fill the gap. Another important benefit of process measurement is that it will add valuable information in process of value-adding for the university's managers. When we focus on the outcome and the output we cannot ignore the fact that input does have certain significance in university's performance measurement. One of the researcher stated that inputs that is students plays a crucial role in determining the outcome of the education in universities. Student's peers also proved to find out the best outcomes (Taticchi, et al., 2015). This proves that input as well as the process do hold a lot of importance and are those factors that cannot be ignored while measuring performance. Therefore input, process, output and outcomes all these factors are equally important in university's performance measurement (Siham, et al., 2015). The incoming resources for example instructors, infrastructure and the students will be measured by the "input" factor. How these resources are dealt by the university will be determined by the help of the "process" factor. The process will measure these resources in courses programs, educational process and other things like workload schedules. The achievements and accomplishments coming from the value-added activities will be measured by the help of the "output" factor. Finally what effect is coming from the achievement will be estimated by the "outcome" factor. So all the factors work together and collectively help the managers in receiving a huge amount of information of the academic activities taking place in the university. This model is very helpful and highly recommended to the managers of the universities for determining the performance measurement in university (Parida, et al., 2015).

Principles of Performance Measurement

It Is Important To Measure All the Work-Activities That Are Important

The assessment of the work that needs to be measured is very necessary because if that is not done we will not have objective information to find out what value it holds. This is the reason we have to assume that this work is valuable even if we don't know the outcome of the work. In case the

outcome is known we will ignore it. The work that cannot be measured will either be minimized or it will be eliminated. In order to measure the performance the resources must be included. Resources like investment, manpower and expenses etc. this will be helpful to reach the desired outcome (Kearney, 2018).

Performance Outcome That Is Desired Should Be Developed For Entire Measured Work

For the accountability of results, outcomes are very necessary and hold great deal of value instead of just having the level of efforts alone. To evaluate the work properly and correctly desired outcomes are very much important. Not only that, it is also important for the meaningful performance appraisal (Laihonen & Mäntylä, 2017). The performance should be in a form that is can be defined with respect to desired result. This is how supervisors as well as the managers make or create their work operational.

To Determine Entire Performance the Establishment of Time Phased Performance Baseline Is To Be Formed

The baseline we are referring to should be in a way that all the activities that are occurring should be presented in this baseline. This should contain a number of things such as: operating performance outcomes which could explain the expected results coming from the operations as well as the operational resources (assemblies, manpower, material etc.) all of which is important to accomplish these results (Arena, et al., 2015). Another thing that should be present in the baseline is the financial performance outcomes. These outcomes should be able to explain the desired results and the desired revenue and the investment which can support and help the operating activity. Lastly baseline must contain schedule performance. This performance should be able to tell when the investment and the desired results will occur according to the expectations. The standards for analyzing the results will be provided by this baseline, which can find out the variances approaching from the plan plus the implications of correct activities and actions.

Same Coordination of Financial and Operating Performance Must Be Done

This should be coordinated with respect to similar reporting frequency and similar reporting periods. The reporting frequency plus the reporting periods should be consistent with performance baseline's time phasing. This is very necessary in order to accomplish the goals and objective that

the university initially sets or aims at achieving (Micheli & Mari, 2014). Achievement can be done in a number of ways but there are few techniques through which better things can be achieved and accomplish for example with less inputs getting more of outputs. This is what we call efficiency. If the university or organizations plans things in a way that they spend less and get more than they surely will be successful and will be able to maintain and sustain this success.

The Analysis Of Variance and Performance Reporting Should Be Achieved Repeatedly

If you want your actions to be corrective and timely then frequent reporting must be done. For effective control over the management the action should be corrected throughout the time period. Reporting is not something that you should do at the end of the year but instead this should be done quite a number of times (Speklé & Verbeeten, 2014). With more frequent and timely reporting more and better outcomes will be derived. Things that are not good for the performance will be either eliminated or reduced whereas things that are really benefiting the university will be increased and more focus will be placed on them.

References

- Arena, M., Azzone, G. & Bengo, I., 2015. Performance measurement for social enterprises. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, 26(2), pp. 649-672.
- Arena, M., Azzone, G. & Bengo, I., 2015. Performance measurement for social enterprises. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, 26(2), pp. 649-672.
- Arena, M., Azzone, G. & Bengo, I., 2015. Performance measurement for social enterprises. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, 26(2), pp. 649-672.
- Bai, C. & Sarkis, J., 2014. Determining and applying sustainable supplier key performance indicators. *Supply Chain Management: An International Journal*, 19(3), pp. 275-291.
- Baird, K., 2017. The effectiveness of strategic performance measurement systems. *International Journal of Productivity and Performance Management*, 66(1), pp. 3-21.
- Bedoui, H., 2015. Multidimensional Metrics For Measuring Social And Sustainable Finance Performance. *ACRN Oxford Journal of Finance and Risk Perspectives Special Issue of Social and Sustainable Finance*, 4(4), pp. 109-128.
- Bhattacharya, A. et al., 2014. Green supply chain performance measurement using fuzzy ANP-based balanced scorecard: a collaborative decision-making approach. *Production Planning & Control*, 25(8), pp. 698-714.
- Bhattacharya, A. et al., 2014. Green supply chain performance measurement using fuzzy ANP-based balanced scorecard: a collaborative decision-making approach. *Production Planning & Control*, 25(8), pp. 698-714.
- Bititci, U., Garengo, P., Ates, A. & Nudurupati, S., 2015. Value of maturity models in performance measurement. *International journal of production research*, 53(10), pp. 3062-3085.

- Connelly, P. & McColl, D., 2016. Wound dressings and performance measurement of such dressings. *U.S. Patent* .
- Genovese, A., Lenny Koh, S., Kumar, N. & Tripathi, P., 2014. Exploring the challenges in implementing supplier environmental performance measurement models: a case study. *Production Planning & Control*, 25(13-14), pp. 1198-1211.
- Kallio, K. & Kallio, T., 2014. Management-by-results and performance measurement in universities—implications for work motivation. *Studies in Higher Education*, 39(4), pp. 574-589.
- Kallio, K., Kallio, T. & Grossi, G., 2017. Performance measurement in universities: ambiguities in the use of quality versus quantity in performance indicators. *Public Money & Management*, 37(4), pp. 293-300.
- Kearney, R., 2018. Public sector performance: management, motivation, and measurement. *Routledge*.
- Kearney, R., 2018. Public sector performance: management, motivation, and measurement. *routledge*.
- Kim, J. & Bryan, J., 2017. A first step to a conceptual framework of parent empowerment: Exploring relationships between parent empowerment and academic performance in a national sample. *Journal of Counseling & Development*, 95(2), pp. 168-179.
- Laihonen, H. & Mäntylä, S., 2017. Principles of performance dialogue in public administration. *International Journal of Public Sector Management*, 30(5), pp. 414-428.
- Landy, F., Zedeck, S. & Cleveland, J. e., 2017. Performance measurement and theory. *Taylor & Francis*.
- Landy, F., Zedeck, S. & Cleveland, J. e., 2017. Performance measurement and theory. *Taylor & Francis*, Volume 25.
- Leyer, M., Heckl, D. & Moormann, J., 2015. Process performance measurement. *Springer, Berlin, Heidelberg*, pp. 227-241.

- Lönnqvist, A., 2016. Measurement of intangible success factors: Case studies on the design, implementation and use of measures. Tampere: Tampere University of Technology, 2004.
- Viidatud Saunila, M. Performance measurement approach for innovation capability in SMEs. *International Journal of Productivity and Performance Management*, p. 165.
- Marginson, S., 2014. University rankings and social science. *European Journal of Education*, 49(1), pp. 45-59.
- Matin, R. & Azizi, R., 2015. A unified network-DEA model for performance measurement of production systems. *Measurement*, Volume 60, pp. 186-193.
- Melnyk, S. et al., 2014. Is performance measurement and management fit for the future?. *Management Accounting Research*, 25(2), pp. 173-186.
- Melnyk, S. et al., 2014. Is performance measurement and management fit for the future?. *Management Accounting Research*, 25(2), pp. 173-86.
- Micheli, P. & Mari, L., 2014. The theory and practice of performance measurement. *Management accounting research*, 25(2), pp. 147-156.
- Micheli, P. & Mari, L., 2014. The theory and practice of performance measurement. *Management accounting research*, 25(2), pp. 147-156.
- Morrow Jr, J., Mood, D., Disch, J. & Kang, M., 2015. Measurement and Evaluation in Human Performance, 5E. *Human Kinetics*.
- Morrow Jr, J., Mood, D., Disch, J. & Kang, M., 2015. Measurement and Evaluation in Human Performance, 5E. *Human Kinetics*.
- Nappi, V. & Rozenfeld, H., 2015. The incorporation of sustainability indicators into a performance measurement system. *Procedia CIRP*, Volume 26, pp. 7-12.
- Pádua, S. & Jabbour, C., 2015. Promotion and evolution of sustainability performance measurement systems from a perspective of business process management: From a literature review to a pentagonal proposal. *Business Process Management Journal*, 21(2), pp. 403-418.

- Parida, A., Kumar, U., Galar, D. & Stenström, C., 2015. Performance measurement and management for maintenance: a literature review. *Journal of Quality in Maintenance Engineering*, 21(1), pp. 2-33.
- Parmenter, D., 2015. Key performance indicators: developing, implementing, and using winning KPIs. *John Wiley & Sons*.
- Podgórski, D., 2015. Measuring operational performance of OSH management system—A demonstration of AHP-based selection of leading key performance indicators. *Safety science*, Volume 73, pp. 146-166.
- Powell, A. W. K. et al., 2013. More than a score: a qualitative study of ancillary benefits of performance measurement. *BMJ Qual Saf*, pp. *bmjqs*.
- Sellitto, M. et al., 2015. A SCOR-based model for supply chain performance measurement: application in the footwear industry. *International Journal of Production Research*, 53(16), pp. 4917-4926.
- Shen, Y., Chen, P. & Wang, C., 2016. A study of enterprise resource planning (ERP) system performance measurement using the quantitative balanced scorecard approach. *Computers in Industry*, Volume 75, pp. 127-139.
- Siham, L. et al., 2015. Designing supply chain performance measurement and management systems: A systemic perspective. *IEEE*, pp. 211-216.
- Siham, L. et al., 2015. Designing supply chain performance measurement and management systems: A systemic perspective. *IEEE*, pp. 211-216.
- Speklé, R. & Verbeeten, F., 2014. The use of performance measurement systems in the public sector: Effects on performance. *Management Accounting Research*, 25(2), pp. 131-46.
- Speklé, R. & Verbeeten, F., 2014. The use of performance measurement systems in the public sector: Effects on performance. *Management Accounting Research*, 25(2), pp. 131-146.

- Star, S., Russ-Eft, D., Braverman, M. & Levine, R., 2016. Performance Measurement and Performance Indicators: A literature review and a proposed model for practical adoption. *Human Resource Development Review*, 15(2), pp. 151-181.
- Tadeu de Oliveira Lacerda, R. et al., 2016. Research opportunities in business process management and performance measurement from a constructivist view. *Knowledge and Process Management*, 23(1), pp. 18-30.
- Taticchi, P. et al., 2014. A review of decision-support tools and performance measurement and sustainable supply chain management. *International Journal of Production Research*, 53(21), pp. 6473-6494.
- Taticchi, P. et al., 2015. A review of decision-support tools and performance measurement and sustainable supply chain management. *International Journal of Production Research*, 53(21), pp. 6473-6494.
- Trumpp, C., Endrikat, J., Zopf, C. & Guenther, E., 2015. Definition, conceptualization, and measurement of corporate environmental performance: A critical examination of a multidimensional construct. *Journal of Business Ethics*, 126(2), pp. 185-204.
- Upadhaya, B., Munir, R. & Blount, Y., 2014. Association between performance measurement systems and organisational effectiveness. *International Journal of Operations & Production Management*, 34(7), pp. 853-875.
- van der Aa, H. et al., 2016. Narrowing the business-IT gap in process performance measurement. *In International Conference on Advanced Information Systems Engineering (pp. 543-557). Springer, Cham*, pp. 543-557.
- Van Dooren, W. & Van de Walle, S. e., 2016. Performance information in the public sector: How it is used. *Springer*.
- Van Horenbeek, A. & Pintelon, L., 2014. Development of a maintenance performance measurement framework—using the analytic network process (ANP) for maintenance performance indicator selection. *Omega*, 42(1), pp. 33-46.

- Van Horenbeek, A. & Pintelon, L., 2014. Development of a maintenance performance measurement framework—using the analytic network process (ANP) for maintenance performance indicator selection. *Omega*, 42(1), pp. 33-46.
- Yaghoobi, T. & Haddadi, F., 2016. Organizational performance measurement by a framework integrating BSC and AHP. *International Journal of Productivity and Performance Management*, 65(7), pp. 959-976.
- Yang, K., 2016. Old Pursuit, New Methods: Promising Benefits amid Familiar Challenges. *Public Administration Review*, 76(4), pp. 547-549.