

*Full Length Research Paper*

# An evaluation of performance using the balanced scorecard model for the university of Malawi's polytechnic

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The study was conducted with a view to evaluate the performance of the University of Malawi's Polytechnic using the Balanced Scorecard model. The research employed a deductive approach and adopted a survey strategy. A closed questionnaire eliciting demographic characteristics and work related factors was sent to a sample of the Polytechnic stakeholders who were selected using a non-random purposive technique. The results indicated that the institution's performance was poor on all the perspectives of the balanced scorecard. However, the performance of the college based on output performance measures was rated as good. The results have also shown that the internal processes and innovation, and learning processes showed a strong correlation to performance measures.

**Key words:** Balanced scorecard, financial perspective, customer perspective, internal processes, innovation and learning, performance measures.

## INTRODUCTION

Tertiary institutions of education have to achieve varying objectives in order to survive. These institutions are, for instance, expected to become institutions of excellence in as far as contemporary teaching and research is concerned (Umashankar and Dutta, 2007), transparent and accountable to their donors, financiers, trustees and/or governments (Papenhausen and Einstein, 2006), augment efficiency of their operations in the light of escalating global costs (Amaratunga and Baldry, 2000) and take into account the dynamic external demands of the stakeholders and new technological evolutions in their programme (Purlsglove and Simpson, 2007).

Mehralizadeh et al. (2007) point out that once these parameters are met, tertiary institutions of higher learning will produce high caliber of the graduates. Furthermore, production of quality graduates will give an institution a competitive edge over other tertiary education providers; hence boost enrolment and chances of attaining accreditation (Mc Devitt et al., 2008). For tertiary institutions to discern their performance they have to continuously assess their performance so that they know whether they are proceeding as intended or not, clearly communicate at all levels what the institution wants to accomplish and how it intends to accomplish, allow

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continual evaluation of corporate alignment on strategic goals and improve the probability as well as speed the pace at which change occurs in the institution (Kim et al., 2003). However, gauging performance of tertiary institutions of higher education has largely been output based. Institutions have been assessed, for instance, based on the number of graduates that the institution has graduated and/or the overall grades scored by students in the exams (Karapetrovic and Grygoryev, 2005).

Rating tertiary institutions of education in this way has been heavily criticised because among other reasons, they focus on issues that can be indisputably measured, notify us what has happened but fail to explain why it has happened, they may suggest where things went wrong but fail to highlight where things are going well and also only to acquaint us with the past (Sanger, 1998).

Thus, they tend to disregard other strategic issues that are pivotal in coming up with a graduate as a final product. Just focusing on the product itself, the graduate, may however, not yield much this as other equally critical players in the educational setup maybe sidelined. As such, results of such evaluation exercises have not been of much assistance in both the management of institutions as well as determining the strategic performance of the institutions by stakeholders.

Kaplan and Norton (1992) developed the Balanced Scorecard (BSC) model which was aimed to balance financial and non-financial measures within the corporate planning and performance measurement systems. The aim of the model was to add leading measures that represent indicators of future financial performance to traditional financial measures, which are based on past performance, and are lacking in other aspects. The balanced scorecard model (Kaplan and Norton, 1992) emphasises the need for an evaluation model that covers all relevant areas of corporate performance measurement systems.

Asiedu (2015) argued that the tool is used to define and monitor performance value such as customer value performance, internal business performance and employee performance. The information that the model requires is premised on financial perspective and non-financial perspectives namely: customer satisfaction, internal business processes, and innovation perspectives. These four perspectives are balanced, as organisations are required to think in terms of all the four perspectives together to prevent a situation in which improvements are made in one area at the expense of another.

Tertiary institutions of education like the Malawi Polytechnic are challenged to produce high-class graduates with relevant knowledge and skills in relevant fields so that they are able to steer development in the country. There have been no documented studies addressing the applicability of the balanced scorecard in tertiary institutions of higher learning in Malawi.

This study therefore aims at using the balanced scorecard model to evaluate such institutions. Specifically,

the study assesses the Malawi Polytechnics' financial, customers, internal processes and innovation and learning factors that impact on the institutions' performance.

The results of this study will provide a yardstick to other tertiary institutions in Malawi in terms of how to measure their performance using the BSC Model.

## LITERATURE REVIEW

### The BSC concept

The BSC concept as propagated by Kaplan and Norton (1992) border on the philosophy that management should not only focus on financial aspects of the business but also on the customer, internal processes and innovation, and learning aspects. The concept is aimed at giving managers a comprehensive view of the business, and allows them to focus on critical areas of the organization thereby driving the strategy forward. It also helps to communicate and implement an organisation's strategy. Limitations of the traditional performance measures which emphasized the financial perspectives of the business are what motivated Kaplan and Norton (1992) to come up with the BSC concept.

Other limitations of the traditional performance measures include performance measures not being incorporated into strategy, measures being inflexible and fragmented, and that measures contradict accepted continuous improvement thinking (Wongrassamee et al., 2003).

As a management tool, the BSC helps organizations to translate their mission and strategy into tangible objectives and measures, and also balances the measures between external (financial – for shareholders and customers) and internal measures (internal processes and innovation and learning).

Furthermore, it balances results measures (outcome that is, financial) and driver measures (measures for future improvements that is. customers, internal processes and innovation and learning) (Wongrassamee et al., 2003). Owing to its characteristic of tying performance matrices more closely to a firm's strategy and long term vision, the BSC is also ranked as an excellent evaluation tool in the sense that it is used to evaluate managerial activities with unbiased view points by providing both tangible financial aspects as well as intangible non financial aspects, and also evaluate customer satisfaction which is very important in business (Kim et al., 2003). Above all, if properly implemented, the internal development of the scorecard helps to create a new corporate culture in an entity which is always aligned to the strategy (Gibbons and Kaplan, 2015).

The main drawback of the BSC concept is that if applied without modification in terms of the entity's culture, technology, strategy and mission, it will not bring

about the intended results ((Kim et al., 2003; Khomba et al., 2012). In addition, the integration of the BSC frameworks in a business unit or whole company is not clearly detailed (Wongrassamee et al., 2003). Despite these limitations, the BSC has been adopted to suit and encompass a number of situations including sustainability (environment, social and ethics).

Recently, a review of literature by Hansen and Schaltegger (2014) found that the BSC has been adopted to include sustainability and renamed SBSC. They concluded that using the BSC framework and adding sustainability related objectives and performance measures to come up with the SBSC, the SBSC can be a promising framework for integrating strategy and sustainability in business.

### **Applicability of the BSC to tertiary institutions of education**

The BSC has been adopted and used in other countries to strategically evaluate tertiary institutions of education. In the United States of America, Dorweiler and Yakhou (2005) conducted their study at Michigan Technological University and concluded that higher learning institutions can better manage their institutions using the BSC model. This was also supported by Papenhausen and Einstein (2006) and McDevitt et al. (2008) in their studies done at University of Massachusetts and Fairfield University, respectively.

Umashankar and Dutta (2007) reported similar findings in India when they carried a study on the implementation of the BSC on tertiary institutions of education at the Institute for International Management and Technology in Hayana. Results found in both India and USA universities were collaborated in Taiwan (Chen et al., 2006) at Chung-Yan University, in UK (Thomas, 2007) at Warwick Business School, and lastly but not least in Malaysia (Lee, 2006) at an International Medical University.

However, these studies suffered from various weaknesses which might weaken their conclusions on the use of the BSC model to strategically measure the performance of tertiary institutions of education. For instance, in the studies done by Doweiler and Yakhou (2005) at Michigan Technological University, the researchers focused on the performance of academic administrators only to the exclusion of other stakeholders, similarly, Mc Devitt et al. (2008) used the BSC to measure the performance of only one faculty of the Fairfield University. A major weakness on these two studies borders on the scope of the research as studies on Academic administrators on one hand, and one faculty on the other cannot give sufficient information on the performance of an entire University.

### **Four perspectives of the balanced score card**

Kaplan and Norton (1992) argue that a balanced

scorecard model must comprise four dimensions that they call financial, customer, internal processes and innovation and learning perspectives.

### **Financial perspective**

Amaratunga et al. (2001) assert that the financial perspective show the results of strategic choices made in other perspectives of customer, internal processes and innovation and learning, and also indicate whether the organisations strategy, implementation and execution have contributed to the bottom line. In other words, it is used to gauge how the system has performed (Wongrassamee et al., 2003). Lee (2006) alleges that prudent financial management helps to achieve better results as these are achieved at minimum cost.

Financial perspective is important because it gives the results of all other perspectives of customer, internal processes and innovation and learning, and also that without this perspective the other perspectives can fail to take place, as this perspective is about financing the others (Niven, 2002).

However, using the financial perspective as a performance management tool to the exclusion of the other three has been criticised by many researchers. Amaratunga et al. (2001) claim that this arrangement encourages short-termism, furnishes misleading information for decision making, fails to consider requirements of today's organisation and strategy, provides misleading information for cost allocation and control of investments, and furnishes abstract information to employees. Love and Holt (2000) maintain that over reliance on financial measures is retrogressive and out of date. In their analysis, Kaplan and Norton (1992) concluded that assessing companies based on financial aspects only do not accurately reflect the interest of the shareholders.

The measures that can be used to measure financial performance of an educational institution include good financial management, fund raising capabilities and external relationships (Dorweiler and Yakhou, 2005), tuition income, reduce human resource cost and increase asset usage (Chen et al., 2006).

### **Customer perspective**

Ruekert (1992) defined customer orientation that Lee (2006) quotes as the degree to which an organisation obtains and uses information from customers, develops a strategy that will meet customer needs and implement that strategy by being responsive to customer needs and wants. The customers of an institution like The Polytechnic include all its stakeholders. Examples of stakeholders include students, employers, government, parents, faculty, staff, administration, alumni, and the community at large. Punniyamoorthy and Murali (2008)

emphasise that in order to get information from stakeholders, a meeting needs to be organised whereby a face-to-face discussion would take place.

Customer orientation would positively contribute to the performance of the institution in the sense that customers will be satisfied once their needs and wants have been supplied. This would result in high enrolments, and therefore high revenue that could be used to improve the internal processes of the institutions as well as improve its innovation and learning processes (Lee, 2006).

This view is supported by Pelham and Wilson (1996). On the other hand, if customers were not given their needs and wants, it would contribute to the failure of the institution to perform better. This would come about because the customers would look for another institution and educational services, in the process, the institution revenue would drop.

This would also lead to drop in service efficiency, as the institution would not have funds with which to improve internal processes and innovation, and learning which are key to educational institutions. Various researchers have measured customer orientation in tertiary institution of education using different measures.

For instance, Chen et al. (2006) measure customer orientation from two perspectives: namely the customer satisfaction point of view and the promotion of the institutions' image point of view. On one hand, they measure satisfaction by looking at number of customer complaints and how fast students get employed from the institution. On the other, they suggest that the image of the institution can be measured by looking at the reputation of the institution, number of students who want to get tuition at that institution and participation in charity activities by the institution.

Even though some measures like reputation can be difficult to objectively measure, they all perfectly describe the type of relationship that exists between the institution and the stakeholders. Despite the difficulty in operationalising some measures, this research will employ all of them to measure the institutions' orientation to its customers.

### **Internal processes**

Papenhausen and Einstein (2006) look at internal processes as critical internal processes that drive the customers (stakeholders) satisfaction, and eventually the financial outcome. Amaratunga et al. (2001) share this position, when they view internal processes as mechanisms through which performance expectations are achieved. Once an institution has solicited needs and wants of its customers, it needs to put in place processes that can turn the wishes of customers into realities (Lee, 2006).

People would need to have the necessary technical knowledge and skills at all levels in order to provide the

needs to the customers. The skills and knowledge would be complimented by up to date facilities and technology, and also appropriate procedures and regulations (Punniyamorthy and Murali, 2008).

Internal processes play a big role in determining the performance of an institution. Dorweiler and Yakhou (2005) claimed that good internal processes in an academic institution lead to, among other things, quality of educational services and efficiency.

Chen et al. (2006) measured internal processes from two perspectives, namely quality service process and complete teaching facilities. On quality service process they look at administration efficiency and student staff ratio.

Regarding teaching facilities, they propose teaching facilities renew rate, and teaching facilities use rate. In addition to these, Dorweiler and Yakhou (2005) insisted on quality of faculty, teaching excellence, service efficiency and effectiveness, strategic plan, performance evaluation and board assessment. Both of these are measuring internal processes by considering the quality of service, teaching facilities and quality of teaching.

### **Innovation and learning**

Innovation and learning can be defined as the identification of the sets of skills, and processes that drive the college to continuously improve its critical internal processes (Papenhausen and Einstein, 2006). Once the needs of the customers have been obtained, institutions convert these requirements into activities that can process them into tangible output that customers can use.

At times, it is found that there is a gap between the internal processes requirements in terms of skills, information systems and the organisation climate, and what is available (Lee, 2006). For instance, the institution might be lacking some skills that are necessary for the provision of a need to the customer. It is the duty of the innovation and learning to consider what it must do to maintain and/or develop the know-how required for understanding and satisfying customers needs (Amaratunga et al., 2001). In addition to meeting the gaps that might be there, Amaratunga et al. (2001) also emphasise that the purpose of this perspective is to consider how it can sustain the necessary efficiency and productivity of processes which are presently created for customer.

Dorweiler and Yakhou (2005) recommended that innovation and learning should be measured by looking at an institution's teaching and technology leadership, programme/curriculum innovation, pedagogy enhancement, reward system, whereas Thomas (2007) considered training and development of human resources, developing an institution's knowledge culture, an institution's involvement in research as some of the measures of innovation and learning.

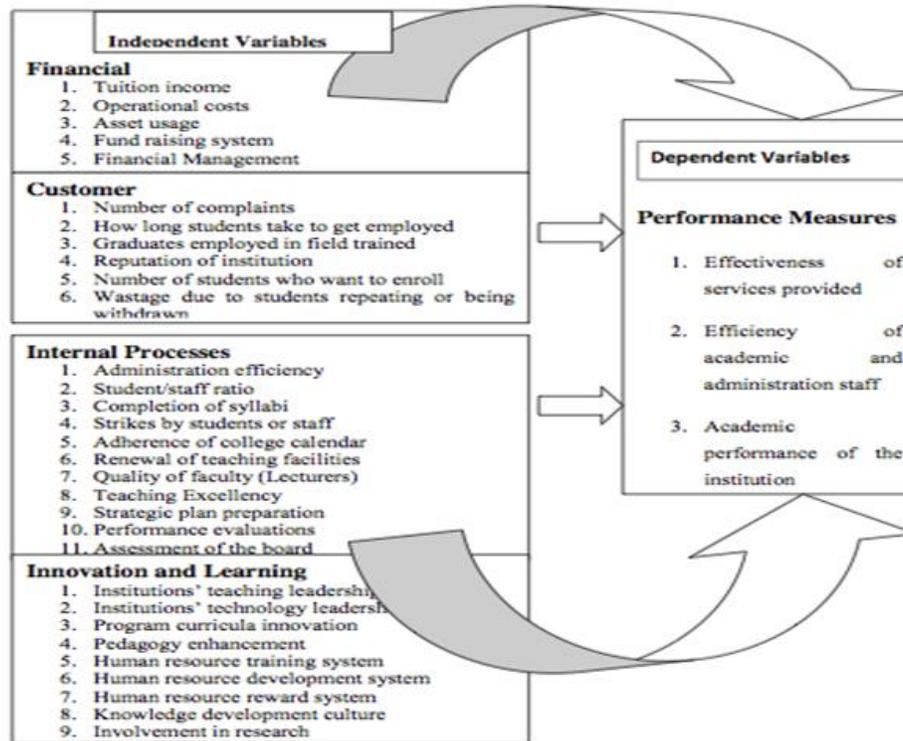


Figure 1. The conceptual framework.

## Performance

Performance is a multidimensional construct and Kaplan and Norton (1996) considered time, quality, flexibility, financial efficiency, customer satisfaction and human resource as key dimensions of performance. These dimensions are consistent with those set by the Ministry of Education in Malaysia as reported by Lee (2006). The Ministry of Education in Malaysia at the time had, efficiency, effectiveness, quality of service, students' academic achievement, student discipline, student participation in sports and extra curricula activities as main constituents of performance dimension.

However, Lee (2006) viewed these dimensions into common factors of efficiency, quality, responsiveness, cost and overall effectiveness. In the commercial world, customers use their knowledge and expectations to measure the quality of the services being offered (Parasuraman et al., 1986). However, unlike products that are manufactured, it is not easy to measure the quality and effectiveness of services in service industry like the teaching and learning because of the intangibility of the outcome. Despite this challenge, Soutar and Mc Neil (1996) recommend the use of a service-marketing instrument called SERVQUAL (Service quality) to measure intangibles. This instruments prescribe that service be viewed from five dimensions. The dimensions include: tangibles, reliability, responsiveness; assurance

and empathy.

Grygoryev and Karapetrovic (2005) assert that a tertiary institution of education's academic performance is said to be high if the students being educated at the institution are well prepared to become productive citizens of the future. This implies that graduates from institutions must have been well equipped to perform tasks that their prospective employers will need them to accomplish or be able to accomplish tasks needed in their businesses, if self employed. However, for educational institutions to impart skills and knowledge required by prospective employers, tertiary institutions of education need to adapt the marketing principle that says corporate strategy must flow from the customer needs (Soutar and Mc Neil, 1996).

In the education sector, customers are substantially employers and therefore if employers are happy with graduates, then one can conclude that the institution produces high quality graduates.

## The conceptual framework

Performance variables include service effectiveness, academic performance and quality students (Ministry of Education, Malaysia in Lee, 2006)). The conceptual framework that was applied in the study is depicted in Figure 1.

**Table 1.** Distribution of sample size.

<b>Subject characteristics</b>	<b>Sample size</b>	<b>Percentage</b>
University office	5	4
Polytechnic administration	5	4
Deans of faculty	5	4
Heads of department	15	13
Lecturers	30	25
Employers	60	50
Total	120	100

## METHODOLOGY

A deductive approach was adopted. A survey strategy was employed to collect data. The population of the research included major stakeholders of the Polytechnic, namely; University office officials, Polytechnic administration officials, Deans and Heads of departments and Employers. Some stakeholders like Government who also have a major interest were indirectly included as employers. A purposive sampling technique was used to collect the sample because of its practicality (Palys, 1992). The sample size was determined as shown in Table 1.

Data was collected using a questionnaire. This instrument was chosen because it is quick, cheaper than face-to-face interview and provides moderately high measurement validity (Saunders et al., 2009). The questionnaire adopted a 5-point Likert Scale and used the nominal scale, the ratio scale and the ordinal scale to measure the rating (Saunders et al., 2009).

Two sets of questionnaires were used in the research. One questionnaire was for the internal stakeholders that is, university officials and the polytechnic administration, deans, heads and lecturers and the other for external stakeholders that is, employers. What necessitated the split of the questionnaire was the fact that external stakeholders would not have information relating to financial and internal perspectives of the Polytechnic. For this reason, the employers' questionnaire had two perspectives of the balanced scorecard model unlike four perspectives that the internal stakeholders reviewed.

120 questionnaires were physically dropped at each prospective respondent, and telephone calls and physical visits by the researcher were used in order to increase the response rates.

## FINDINGS

### Characteristics of the respondents

A total of 76 questionnaires were returned out of 120 questionnaires which were sent out, giving a response rate of 63%. The majority of the respondents were employers of the polytechnic graduates representing 54%, and the least came from university office management and polytechnic deans of faculties representing 3%. Other respondents were polytechnic management (5%), polytechnic heads of departments (10%) and polytechnic lecturers (25%).

The results show that most of the respondents came from the age group 40 to 50 years representing 37%. The least were young respondents (age group 25 to 30 years) representing 10% of the respondents. Other respondents

came from age groups 30 to 40 years (32%) and over 50 years (21%).

The results also indicated that the majority of the respondents in this research hold masters degrees (32%) followed by those holding professional qualifications in their field of specialisation (30%), and bachelor's degree (30%). The other respondents that took part in the research were PhD holders (8%). The results show that most of the respondents have been with their current employers for a reasonable time, between five years and ten years (38%). The other respondents have been with their employers for less than five years (26%) and the others more than ten years (36%).

More than half of the respondents (58%) work for small firms with less than 500 employees. The remainder of the respondents came from medium firms with between 500 and 1000 employees (26%), and large firms with more than 1000 employees (16%). The majority of the responses came from Academia (41%), seconded by those that came from the financial service sector (18%). The remainder of the respondents were drawn from manufacturing (9%), utility (7%), public accountants (4%), motor vehicles (4%), ICT (4%), pharmaceutical (3%) and other respondents came from Fast Moving Consumer Goods, construction, hospitality, agriculture, transport, sales & service, health, NGOs (10%).

### Polytechnic's performance based on BSC perspectives

The objective of the research study was to assess the performance of the polytechnic based on the financial, customer, internal processes and innovation and learning perspectives of the BSC model. The respondents were requested to measure the performance of the college based on a scale of 1 to 5, with average scores below 3 meaning poor performance, average score of 3 denoting average performance while scores above 3 indicate good performance. The results have been shown in Table 2.

The results show that the overall mean score for the respondents on the financial perspective was 2.2. This means that the respondents viewed the polytechnic performance from the financial perspective as poor. Although the overall rating is 2.2, there is a wide range of

**Table 2.** Overall performance of the polytechnic from all four perspectives of the balanced scorecard model.

Perspectives	University office	Poly admin	Poly deans	Poly heads	Poly lecturers	Employers	Mean score
Financial	2.9	2.6	1.6	2.1	2.1	N.A	2.2
Customer	2.4	3.2	2.8	2.4	2.7	2.8	2.8
Internal processes	2.2	2.8	2.3	2.4	2.4	N.A	2.4
Innovation and learning	2.6	3.3	2.6	2.5	2.4	3.1	2.9
Mean score	2.6	3.0	2.3	2.4	2.4	3.0	2.6

**Table 3.** Performance of the polytechnic based on output performance measures.

Variable	University office	Poly admin	Poly deans	Poly heads	Poly lecturers	Employers	Mean score
Mean score	2.3	3.1	2.5	3.3	3.1	3.4	3.3

perspective among the respondents from 1.6 up to 2.9. Interestingly, respondents from university office management rated the performance of polytechnic higher (2.9) than deans at the polytechnic (1.6).

The overall mean score for the respondents on the customer perspective was 2.8. This means that the respondents viewed the polytechnic performance from the customer perspective as poor. While the overall rating is 2.8, there is a wide range of perspective among the respondents from 2.4 to 3.2. Respondents from the polytechnic administration rated the polytechnic performance higher (3.2) than university office administration (2.4), and polytechnic heads of departments (2.4).

On the internal processes perspective, the results show that the overall mean score for the respondents was 2.4, which mean that the respondents viewed the polytechnic performance from the internal processes perspective as poor. There appears to be a consensus among respondents on internal processes because the range of perspective among respondents is small from 2.2 to 2.8.

The results also indicate that the overall mean score for the respondents under the innovation and learning perspective was 2.9. This means the respondents viewed the polytechnic performance from this perspective as just below average. Though the overall rating is 2.9, there is a wide range of perspective among the respondents from 2.4 to 3.3. Interestingly, polytechnic administration rated the performance of the polytechnic higher (3.3) than lecturers at polytechnic (2.4).

The overall results of the study on performance of the polytechnic from all the four perspectives of the BSC show that the overall mean score for the respondents was 2.6. This means the respondents viewed the polytechnic overall performance from all the four perspectives of the BSC as poor. Even though the overall mean score was 2.6, there is a wide range of perspectives

among the respondents on the performance of the polytechnic from 2.3 to 3.0. It is interesting to note, staff from polytechnic administration and employers rated the performance of the polytechnic higher (3.3) than deans of polytechnic (2.3).

### **Polytechnic's performance based on output performance measures**

The respondents were also requested to rate the performance of the college based on the output performance measures. The results have been shown in Table 3. The results show that the overall mean score for the respondents was 3.3. This means the respondents viewed the polytechnic performance as good. Although the overall rating is 3.3, there is a wide range of perspective among the respondents from 2.3 to 3.4. The employers category rated the performance of the institution higher (3.4) and staff from university office administration rated it lower (2.3).

## **DISCUSSION**

The ratings of the respondents on the performance of the polytechnic based on the BSC perspectives and output performance measures were tested to find out if there were any significant differences. The results have been depicted in Table 4. The analysis of variances (ANOVA) of respondents on the financial perspective show that these differences are statistically significant,  $F(4, 30) = 1.88, p < 0.05$ .

In general, staff from the university office management (2.9) and polytechnic administration (2.6) rated the polytechnic performance higher than academic members: Deans (1.6), Heads (2.1) and lecturers (2.1). From these

**Table 4.** Analysis of variances based on respondents ratings on the BSC perspectives and output performance measures.

<b>BSC perspective / Output performance measures</b>	<b>F – Value</b>	<b>P - Value</b>
Financial	1.88	< 0.05
Customer	1.86	< 0.05
Internal Processes	0.74	< 0.05
Innovation and Learning	4.99	> 0.05
Overall	8.1	> 0.05
Output Performance Measures	2.08	< 0.05

results, it is observed that the performance of Polytechnic is deemed poor as such, the Polytechnic cannot be expected to perform well overall because the financial perspective is the one that funds the other perspectives like internal processes and innovation and learning (Niven 2002).

Therefore, if an institution has performed poorly under the financial perspective, it is more likely that it will perform poorly overall. The results are in line with those of Weerasooriya (2013). Weerasooriya (2013) ranked the financial perspective poor while the innovation and learning perspective was ranked highly Hladchenko (2015) noted that in higher education, the balanced scorecard emphasizes academic measures, rather than financial performance of higher education institution.

In this regard, the measures developed in balanced scorecard are usually built on and around such aspects as faculty/student number (ratios), demographics, students pass percentages and dispersion of scores, class rank, percentile scores, graduation rates, percentage graduates employed on graduation, faculty teaching load/faculty research/publications, statistics on physical resources (Pingle and Natashaa, 2011).

Similarly, the differences on the ratings by respondents on the customer perspective are statistically significant,  $F(5, 70) = 1.86, p < 0.05$ . Furthermore, it is encouraging that employers, who have more interest in the graduates from the Polytechnic, rated its performance at 2.8. The poor performance of the institution from the customers' perspective is worrisome. It is imperative that the tertiary institutions of education are viewed positively by external stakeholders. Lee (2006) notes that institutions which do well on the customer perspective are likely to increase enrolment and recruitment thereby boosting the financial perspective by having more revenue hence more resources to fund the internal processes and innovation and learning.

The observed differences by respondents on the internal processes perspective are also statistically significant,  $F(4, 30) = 0.74, p < 0.05$ . It is interesting to note though that polytechnic administration, and those from University Office administration are each on the extreme side of the range, rating the performance of the Polytechnic at 2.8 and 2.2 respectively. This result is not

strange considering that the institution fared below average under the financial perspective. The financial perspective is the one that is meant to fund internal processes so that their operations can thrive. Furthermore, it is because of the poor performance of the internal processes that has resulted into the customers' perspective also faring below average as the internal processes are the ones that drive the customers' perspective (Papenhausen and Eisten, 2006). Regarding innovation and learning, interestingly, Polytechnic administration rated the performance of the Polytechnic higher (3.3) than lecturers at the Polytechnic (2.4) and these differences are not statistically significant,  $F(5.69) = 4.99, p > 0.05$ .

In general, apart from University Office staff (2.6), staff from polytechnic administration (3.3) and employers (3.1) rated the polytechnic performance higher than academics: Deans (2.6), Heads (2.5) and lecturers (2.4). These results under the innovation and learning are in line with the fact that innovation and learning can only do well if financial perspectives have done well because innovation and learning perspectives need financial perspectives to do well so that they can be funded (Niven, 2002).

Overall, even though, staff from polytechnic administration and employers rated the performance of the polytechnic higher (3.0) than deans of polytechnic (2.3), these differences are not statistically significant  $F(5, 70) = 8.1, p > 0.05$ . The results of the analysis of variances on the ratings of respondents on the performance measures based on the output reveal that the differences are statistically significant  $F(5, 70) = 2.08, p < 0.05$ . The results show that most respondents felt that the academic performance of the institution is good. However, this contradicts with the results from the BSC perspectives which revealed that the institution performance is poor.

#### **Correlation of the balanced scorecard perspectives to output performance measures**

Table 5 shows the results of the correlation between the financial, customer, internal processes and innovation,

**Table 5.** Correlation of the balanced scorecard perspectives to output performance measures.

Balanced scorecard variables	Performance measures	Sig. (2 tailed)	N
Financial perspective	0.100	0.954	35
Customer perspective	0.285	0.130	76
Internal processes perspective	0.487	0.003	35
Innovation and learning perspective	0.590	0.000	76

and learning (independent variable) and performance measures (dependent variables).

The results show that there was a weak correlation between the financial perspective and the performance measures; however, this correlation was not statistically significant  $r(33) = 0.1$ ,  $p > 0.05$ . Similarly, there was a weak correlation between customers' perspective and performance measures, and this correlation is not statistically significant  $r(74) = 0.285$ ,  $p > 0.05$ .

On the other hand, results of the study show that there was a strong correlation between internal processes of the polytechnic and the performance measures, and this correlation was statistically significant  $r(33) = 0.487$ ,  $p < 0.05$ . Additionally, the results show that there was also a strong correlation between innovation and learning and performance measures and the correlation was statistically significant  $r(74) = 0.59$ ,  $p < 0.05$ .

The results imply that the performance of the polytechnic is dependent on the financial perspective, customers' perspective, internal processes perspective, innovation and learning perspective as there was positive correlation between each perspective and the performance measures. However, going by the strength of correlation that this study has revealed, the financial perspective has been ranked as the least. This is contradicting earlier studies done that intimated that the other perspectives can only do well if the financial perspective has done well and therefore the overall performance of the institution will improve (Niven, 2002).

## CONCLUSIONS AND RECOMMENDATION

The performance of the polytechnic has been measured using the balanced scorecard model. The study has revealed that the performance of the Polytechnic is poor. However, the performance of the College had been rated as good on the basis of the output performance measures.

The study has also established that whereas there was a weak relationship between the financial and customer factors and the performance measures, there was a strong relationship between internal processes and innovation and learning on one hand and performance measures on the other.

Based on the outcome of the research, it is recommended that the institution must ensure that the

spirit of efficiency should be entrenched in the administration. For instance, calendar of events must be done and strictly pursued, objective decisions must be made timely, resources must be used economically and prioritised to core business of the institution which is training of students, performance targets must be set and reviews done.

Again an institution should come up with a strong fund raising system (Dorweiler and Yakhou, 2005) that can be used to fund internal processes and innovation and learning processes of the college. These processes are fundamental in the training of the students. Besides, if the college has ample funds, it would be able to have sufficient structures so that it is able to admit the many students who want to enrol with the institution. The institution must design program that are modern, pertinent to the industry and innovative enough to be able to bolster in addressing the challenges facing the industry and also the nation in general, (Dorweiler and Yakhou, 2005).

This can be accomplished by, among other means, embracing the industry and other stakeholders when designing and reviewing curricula (Soutar and Mc Neil, 1996). This will guarantee that not only do graduates get employed or find something to do immediately after graduation but also that they will either be employed or find something to do in the field in which they were trained.

The institution should reinforce monitoring and evaluation of staff. The institution must ensure that only qualified staffs are teaching the institutions' students (Dorweiler and Yakhou, 2005; Kim et al., 2003). Furthermore, there must be means and ways of scrutinising if the program curricula are contemporary, applicable and innovative. Also, staff must be monitored to find out if they are covering the syllabi in full and that the type of exam being administered is ideal for the level of the year. It should be noted that while the study was based on the University of Malawi's Polytechnic, the recommendations that have been made could equally apply to other tertiary institutions in Malawi.

This study has focused on the Polytechnic. There are several tertiary institutions in Malawi. It would also be engrossing to utilise the Balanced Scorecard model to rate other tertiary institutions of education with different courses and set up from that of the Polytechnic and see if identical results would be achieved.

## CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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