QUALITY MANAGEMENT SYSTEM AND INSTITUTIONAL PERFORMANCE AMONG STATE UNIVERSITIES AND COLLEGES (SUCS) IN REGION XII, PHILIPPINES

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Abstract

As State Universities and Colleges (SUCs) compete for budget allocation from the national government, considering pressure from their stakeholders, they have been challenged to continue improving their quality of output and support services. This study assessed the level of the quality management practices of SUCs in Region XII, Philippines, using the Baldridge Education Criteria for Performance Framework and an evaluative and correlational descriptive research design. Descriptive and inferential statistics were used to analyze the data. The respondents were faculty members, deans, and graduating students of four (4) SUCs in the said region. Data were gathered using a questionnaire and the SUCs' leveling assessment results. Analysis of the level of quality excellence revealed a very effective condition indicating they were extensive and functioning effectively. There is a significant difference in the quality management practices as perceived by the three (3) groups of respondents, with the deans obtaining the lowest mean. However, the SUCs performed differently in SUC leveling. SUC-Y performed excellently, while SUC-X followed with a very satisfactory rating in all four key results areas. Institutional performance is influenced by their management practices following the Baldridge Criteria. It is concluded that SUCs in Region XII are nearing their quality excellence target. The assessment of quality management was influenced by the groupings of respondents. The SUCs were in different stages of development and institutional performance, which was significantly influenced by management practices following the Baldridge Criteria on leadership and faculty and staff. The rest of the five dimensions showed a weak influence on the said performance.

Keywords: *quality management system, institutional performance, state universities and colleges*

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1.0 Introduction

Education plays a crucial role in capacitating citizens and in contributing to its development. It is a key toward the attainment of a sustainable, peaceful, and progressive economy. Higher education institutions are mandated to produce manpower who will act as catalysts of development. According to World Bank (2013), higher education contributes "to building a strong society, ending extreme poverty, and boosting shared prosperity." In line with the liberalization of education, quality assurance becomes a priority by the government in any country.

UNESCO (2011) defined quality assurance as the systematic review of educational programs to ensure that acceptable standards of education, scholarship, and infrastructure are maintained. There are several models in services and industries in the USA, Europe, Japan, and in other ASEAN countries. Ruiz and Sabio (2012) mentioned that the institution-based mechanism used in the Philippines was the Institutional Quality Assurance through Monitoring and Evaluation (IQUAME), Assessment for SUC Leveling, Government Quality Management System, and the Philippine Quality Award (PQA). PQA is the highest award that the government can bestow on any organization which follows the Malcolm Baldridge Criteria. To date, there are only a few studies that address Baldridge in the area of education. Badri *et al.* (2005) tested empirically the causal relationship in the Baldridge Quality Criteria. All the Baldridge Components were significantly linked with organization outcomes as represented by its two categories and students, stakeholders and market focus. The results run parallel with the findings of Kunagaratnam (2018) that a higher learning institution's success is defined by the performance of its leaders, employees, and quality of services rendered. Moreover, Dick and Tari (2013) studied the state of research in quality management in higher education institutions through an extensive review of academic literature. Findings showed that research is limited in volume and scope. Results further revealed that the three most researched topics were on quality management implementation issues, quality management models, techniques and tools, and quality management dimensions.

The preceding reviews paved the way for the identification of some research gaps. Since organizational performance has many components, there was difficulty in categorizing the general items into two outcome components of the Baldridge Framework. More research on specific outcomes to capture all the components of organizational performance is needed. Similarly, while the importance of leadership in Baldridge Criteria adoptions is widely recognized, more research is required to understand the specific leadership behaviors that are most effective in driving said criteria for implementation. Moreover, Dick and Tari (2013) mentioned that HEIs research followed the standards observed in industry-based research on quality, so there exists an opportunity to take a closer look at the opinions of school managers and academicians to understand more about their needs as their views may vary with the industry; thus this study was conducted.

This study assessed the level of quality management practices of the three groups of respondents of SUCs in Region 12 and related them to institutional performance. Data were gathered using a survey questionnaire following the Baldridge Criteria and the FY 2016 SUC Level Criteria to measure institutional performance. The study determined: a) the level of Quality Management System dimension of SUCs in terms of: Faculty and Staff Focus, Leadership, Measurement, Analysis and Knowledge Management, Organization Performance Results, Process Management, Strategic Planning, and Students, Stakeholders and Market Focus; b) the significant difference on the quality management practices as perceived by the three groups of respondents; c) the level of performance of each SUC in Region XII per criterion: relevance and quality of instruction, research capability and output, community engagement, and resources management; and d) the significant relationship between the different Quality Management dimensions and the institutional performance of SUCs in Region XII.

2.0 Methodology

The study utilized the evaluative and correlational

descriptive survey, which is quantitative in nature. This design is a type of research that provides an accurate and detailed account of a particular group, phenomenon, or event with the purpose of evaluating the effectiveness and impact of a specific intervention or policy to target beneficiaries and determine the degree of association between the two variables (Naanep & Cerado, 2023). It is evaluative as it assessed the level of quality management practices involving the seven (7) dimensions of the Baldridge Criteria for Performance Excellence and the performance of each SUC in Region XII in the Philippines. Moreover, it is correlational as it sought to determine whether there are significant relationships between the different quality dimensions and institutional performance using multiple regression analysis. The respondents of the study were the faculty members, deans and graduating students of the four (4) state higher education institutions in Region XII. To maintain the anonymity of the institutions, a code in terms of W, X, Y and Z was used to represent the SUCs concerned. 19.30 % of the respondents were from SUC-W, 14.56% from SUC-Z, 41.46% from SUC-Y , and 24.68% from SUC-X. The distribution of the respondents by SUCs was based on proportional allocation formula (Hechanova & Hechanova, 2002) is presented in Table 1.

Table 1. Number of samples of the study by SUCs and group

Group	Target Population	Number of Sample				Percentage (%)
		SUC-W	SUC-Z	SUC-Y	SUC-X	
Faculty	1,130	58	43	94	76	42.88
Deans	30	6	4	10	10	4.75
Students	4,702	58	45	158	70	52.37
Total	5,862	122	92	262	156	100

The setting of the study was in Region XII in the Philippines. It included the four (4) Higher Educational Institutions, namely Cotabato City State Polytechnic College (CCSPC) in Cotabato City; Cotabato Foundation College of Science and Technology (CFCST) in Arakan, Cotabato; University of Southern Mindanao (USM) in Kabacan, Cotabato; and Sultan Kudarat State University (SKSU) in Tacurong City, Sultan Kudarat. These SUCs were chosen since the researchers are advocates of the SUC pursuing performance excellence following the Baldridge Education Criteria.

The study utilized the Stratified Sampling Technique. The respondents were clustered into three strata, namely faculty, deans, and graduating students, wherein each stratum has data of interest that are homogeneous within the given stratum (Basilio *et al.*, 2003). A random sample was drawn independently from each group. On the other hand, total enumeration of respondents was applied for sampling the Deans of colleges since their number was just very small. The sample size was then computed using Slovin's formula, which in turn was distributed further to every four (4) SUCs in Region XII according to the number of faculty and students using the proportional allocation formula.

However, in line with the Data Privacy Act of 2012, the participation of the subjects was voluntary (Kumar, 2018); thus, the participants have the right to refuse participation in the study (Cozby, 2003). As an exercise and due observation of this Act, six (6) of the deans did not participate: 99.05% response rate from 626 out of 632 participants gave their informed consent to collect and process the information needed in the study. The sample size by SUCs and group is shown in Table 1.

The Malcolm Baldrige Award Application Guidelines were used as the basis in the formulation of the questionnaire, which assessed the level of practice for quality management standards. This was used since it captured the criteria in performance excellence for higher education. It involved seven (7) dimensions among four (4) state Higher Education Institutions in Region XII, capturing key components in the guidelines (NIST, 2004). The questionnaire was developed after a thorough understanding and review of the criteria. This was patterned after the empirical test and validation of the said criteria from 15 United Arab Emirates Universities and Colleges (Badri *et al.,* 2006).

The modified questionnaire was presented to the adviser, panel, and five (5) experts on test construction who were also familiar with the topics under consideration to judge the appropriateness of the items. The experts' agreement on the validity of the item was computed using the formula $AR = X/N \times 100\%$, where AR is the Agreement Ratio, X is the sum of the number of jurors who considered the items valid, N is the number of validators, and 100% is the constant percentage used to remove the effect of the decimal points. All the seven dimensions in the Baldridge Criteria received an agreement ratio of 100% from the validators. This helped establish the validity of the test. Corrections and suggestions were integrated in the survey questionnaire. The questionnaire consisted of 10 questions for each dimension.

To test the internal consistency of the questionnaire, it was pilot tested to deans, selected faculty members, and students from Central Mindanao University in Bukidnon to determine its reliability. Cronbach's coefficient alpha was used to evaluate the instrument's reliability. The computed Cronbach's coefficient alpha was 0.98 described as excellent. In general, the instrument is reliable if the reliability coefficient is 0.70 or higher (Wells & Wollack, 2003).

Each item was assessed using a 5-point Likert Scale, as shown below to describe the respondents' rating on the seven (7) Baldrige Education Criteria for Performance Excellence of the four (4) SUCs in Region XII.

Numerical Rating	Verbal Description
5	Strongly Agree
4	Agree
3	Undecided
2	Disagree
1	Strongly Disagree

The Weighted Mean was used to determine the level of QM dimensions by SUCs in Region XII. The summarized description of the modified data interpretation from the Accrediting Agency of Chartered Colleges and Universities of the Philippines (AACCUP, 2010) is shown below, which was used in interpreting the results.

Numerical Rating	Range of Mean	Decriptive Rating	Interpretation
5.0	4.51-5.00	Excellent	The conditions or provisions are very much extensive and are functioning excellently.
4.0	3.51-4.50	Very Effective	The conditions or provisions are highly extensive and are functioning very effectively.
3.0	2.51-3.50	Effective	The conditions or provisions are extensive and are functioning effectively.
2.0	1.51-2.50	Not Effective	The conditions or provisions are extensive and are not functioning effectively.
1.0	1.00-1.50	Needs Improvement	The conditions or provisions are poor or limited and are functioning but needs improvement.

Moreover, the One way Analysis of Variance (ANOVA) was used to test whether there is a significant difference in the quality management practices as perceived by the three (3) groups of respondents. The Least Significant Difference (LSD) Test was used to test significant differences among treatment means.

Criteria for assessing SUC leveling covering FY 2013 – FY 2015 prepared by CHED and DBM (2016) was adopted to determine the institutional performance of the four (4) SUCs in Region XII. In interpreting the results, the categorization of different SUCs from Level I to Level V, with the latter as the highest in terms of institutional performance were modified .

Level	Descriptive Rating
V	Excellent
IV	Very Satisfactory
III	Satisfactory
II	Average
I	Fair

The Baldridge Criteria, the independent variable, is composed of seven (7) dimensions, namely faculty and staff focus; leadership; measurement, analysis and knowledge management; organization of performance results; process management; strategic planning; and students, stakeholders and market focus, while institutional performance was assigned as the dependent variable. The relationship of the variables was tested and established using multiple regression to predict the latter from seven independent variables combined. The formula for the multiple regression is given by:

$$\hat{y} = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7$$

Where:

$\hat{y}$ = variable to be predicted which is the institutional performance

a = constant

b_1 = slope of the first predictor, leadership

b_2 = slope of the second predictor, strategic planning

b_3 = slope of the third predictor, student, stakeholders, and market focus

b_4 = slope of the fourth predictor, measurement, analysis, and knowledge management

b_5 = slope of the fifth predictor, faculty, and staff

b_6 = slope of the sixth predictor, process management

b_7 = slope of the seventh predictor, organization performance results

x_1 = rating for the first predictor

x_2 = rating for the second predictor

x_3 = rating for the third predictor

x_4 = rating for the fourth predictor

x_5 = rating for the fifth predictor

x_6 = rating for the sixth predictor

x_7 = rating for the seventh predictor

3.0 Results and Discussion

Table 2 summarizes the assessment of quality management practices by the respondents of the 4 SUCs in Region XII. As shown, leadership obtained the highest mean of 4.24, followed by strategic planning with a mean of 4.21, faculty and staff and student, stakeholders, and market focus with a mean of 4.16. Measurement, analysis, and knowledge management obtained the lowest mean of 4.11. The results can be attributed to the vital role of senior leaders in the academe. They are expected to set the strategic direction in line with the vision, mission, and goals of the institution and make sure that these are communicated down to the personnel, practice continuous and open communication with personnel, and show appreciation for their exemplary performance. As the destiny of the institution rests heavily on the hands of its leaders, excellent leaders are vital forces that will stir up the institution toward the attainment of its vision, mission, goals, and objectives (NIST, 2004). According to the Baldridge criteria for performance excellence, leaders should motivate and inspire their personnel to contribute towards the attainment of the goals, vision, and mission of the institution.

Table 2. Summary of Assessment on Quality Management Practices by the respondents of SUCs in Region XII

	Dimension	Mean SUC-W n-122	SUC-Z n-92	SUC-X n-154	SUC-Y n-258	Over all Mean
1	Leadership	3.96	3.84	4.33	4.46	4.24
2	Strategic Planning	4.00	3.88	4.26	4.41	4.21
3	Student, Stakeholders, and Market Focus	3.98	3.85	4.18	4.34	4.16
4	Measurement, Analysis, and Knowledge Management	3.95	3.75	4.13	4.31	4.11
5	Faculty and Staff	3.94	3.71	4.22	4.39	4.16
6	Process Management	3.94	3.80	4.19	4.34	4.15
7	Organization Performance Results	3.97	3.78	4.23	4.32	4.15
	Overall Mean	3.96	3.80	4.22	4.37	4.17
	Descriptive Rating	Very Effective	Very Effective	Very Effective	Very Effective	Very Effective

Moreover, the findings connote that the institution prioritized its main function of providing quality instruction to its main clientele-the students. According to the Baldridge Theory of Performance Excellence (NIST, 2004), strategic planning stresses that operational performance and learning-centered education are major issues to be integrated into the overall planning of the organization. Badri *et al.* (2006) cited that the key driving factors in institutional success are centered on market shares, new markets, student and stakeholders' satisfaction, student learning, and student persistence. Learning-centered education tackles the real needs of the learners, including those derived from market requirements.

Likewise, the results on Students, Stakeholders and Market Focus were due to the SUCs strategy of continuously building and sustaining active relationships with students and stakeholders, while Faculty and Staff Focus results were associated to personnel well-being and satisfaction, and work system that ensures ongoing education and training for their personnel were addressed since the quality of education depends largely in the qualification of the faculty. According to CHED (2010), the Faculty Development Program (FDP) is a key component toward building a solid foundation of a learning system to ensure quality.

The overall mean of 4.17 showed very effective leadership and long-term planning, initiating sustainable quality control procedures, addressing the satisfaction and welfare of the personnel, and, above all striving for student satisfaction, stakeholder and market focus based on Baldridge criteria.

The difference in the quality management practices as perceived by the three (3) groups of respondents is shown in Table 3. Results

Table 3. Differences in the quality management practices as perceived by the three (3) groups of respondents.

Group of Respondents	Mean*
Faculty	4.16[ab]
Dean	4.12[b]
Students	4.19[a]
CV-1.05%	LSDD value @ 5% = 0.049

**mean having similar superscript is not significantly different using LSD T test*

revealed that the students obtained the highest mean of 4.19, followed by the faculty (4.16). On the other hand, the deans got the lowest mean of 4.12. The One-Way Analysis of Variance revealed that there is a significant difference in the quality management practices as perceived by the three (3) groups of respondents. Tested at 5% level of significance, the computation revealed that the F value of 3.72 is greater than the F tabular value of 3.55 @ df error of 18. Thus, there is significant difference in the quality management practices as perceived by the three (3) groups of respondents.

Further analysis using the Least Significant Difference (LSD) Test showed that the students significantly obtained the highest mean of 4.19, which was comparable to that of the faculty with a mean of 4.16. Moreover, the deans received the lowest mean of 4.12, which is significantly lower than the rest. Generally, the difference in the quality management practices as perceived by the three (3) groups of respondents indicates different perceptions, cultures, standards, and expectations of the respondents.

The summary of the final rating by the Regional Evaluation Committee on SUC leveling covering FY 2013-2015 is shown in Table 4.

Table 4. Summary of Final Rating by the Regional Evaluation Committee on SUC Leveling covering the period from FY 2013-2015.

Key Result Area (KRA)	SUC-W	SUC-Z	SUC-X	SUC-Y
KRA 1: Relevance and Quality of Instruction	8.00	6.95	11.00	14.25
KRA: 2 Research Capability and Output	5.500	5.25	10.125	13.375
KRA: 3 Community Engagement	7.00	7.75	10.50	14.00
KRA: 4 Resources Management	3.625	2.00	3.625	4.50
Total	24.125	21.95	35.25	46.125
Performance Level	Satisfactory	Average	Very Satisfactory	Excellent

As shown, SUC-Y obtained the highest points of 46.125, described as excellent based on the modified SUC performance interpretation in Table 4 with the breakdown as follows: 14.25 points for KRA 1 on quality and relevance of instruction, 13.325 for KRA 2 on researchcapability and output, 14 for KRA 3 regarding services to the community and another 4.5 for KRA 4 dealing on the management of its resources. Specifically, the quality and relevance of instruction earned a maximum point for the average number of weighted full-time equivalent students per semester, scholarship, financial assistance, employment of graduates, faculty profile and COE/COD/NUCAF at 2, 1, 0.5, 0.5, 2 and 3 points, respectively. Moreover, its accreditation and board examination performance were credited 3 and 2 points, respectively, while its student's involvement in inter-country mobility settled for the lowest point of 0.25. With regards to research capability and output, the institution's 13.375 points were drawn from a perfect score of 3, 2, 3.5, and 3 in research center, the percentage of the researchers to the total plantilla faculty, externally funded research, and paper publication indexed by Elsevier, Scopus, Thomson Reuters and CHED and paper presentation at international, national, and local conferences, respectively. It was also credited with 0.375 and 1.5 points in the total number of citations and innovations, respectively.

Its extension services posted a maximum score of 14 for its active linkages/partnerships with other organizations, training, adopters, and viable demonstration projects. Its management of resources was given a score of 4.50. Despite its excellent performance, the finding implies the need for the university to increase students' involvement in inter-country mobility, pursue institutional accreditation, increase the number of citations in articles published by other researchers, increase the number of inventions, and improve management of its resources.

SUC-X ranked second with a total point of 35.25, categorized as very satisfactory, using the same basis drawing 11 points for KRA 1, 10.125 for KRA 2, 10.5 for KRA 3, and another 3.625 for KRA 4. In detail, KRA 1 points were accumulated from the maximum points of 0.5 each for student financial assistance and employment of student-graduates. Moreover, it also earned 1.5 points for the average number of weighted full-time equivalent students per semester; 0.75 for scholarship; 0.25 for student involvement in inter-country mobility; 1.5 for faculty profile; 3 for accreditation; 1 for PIAF; and 2 for its performance in the board examination. The 2 points earned for board examination for 2 SUCs corresponds to 60% to 79% performance in the said examination for the last three (3) years for FY 2013-2015. This figure was relatively higher by at least 29% compared to the average percentage passing from 2008 to 2010 of all SUCs other than UP and MSU System, as reported by Villanueva *et al.* (2013).

For KRA 2, it is broken down as follows: a maximum points of 2 pts. were credited for each externally funded research and patented invention. It also garnered 2 points for research center including percentage of researchers to total plantilla faculty, 2.375 points for research-based paper presentation, 1.5 points for publication, and 0.25 points for citation in articles.

Concerning KRA 3, 10.5 points were obtained by the contribution of 2 maximum points of 4.5 and 3.5 each for adopters and community served in the last 3 years, respectively, while the remaining ones were attributed by 1.5 points and 1 point from viable demonstration projects and linkages with other organizations, respectively. Furthermore, KRA 4 obtained 3.625 points for the management of its resources.

The findings imply the need for SUC-X to increase students' involvement in inter-country mobility, pursue COD, increase the percentage of faculty involved in research and publication, increase the number of active linkages and viable demonstration farms, and improve the management of its resources.

SUC-W ranked third with a total of 24.125 points interpreted as satisfactory, drawing its points of 8 from KRA 1, 5.5 points from KRA 2, 7 points from KRA 3, and another 3.625 points from KRA 4. Finally, SUC-Z settled for 4th place with a total point of 21.95, described as average with the following breakdown: 6.95 points for KRA 1, 5.25 for KRA 2, 7.75 points for KRA 3, and 2 points for KRA 4.

The poor performance was caused by several factors. Cerado and Naanep (2023) identified the issues and concerns affecting

institutional performance as faculty work overload, inadequate laboratory facility, limitations in online modalities such as network coverage and mode of instruction, negative impression from stakeholders due to its location, strict adherence to procurement law, technological incompetence of the faculty, limited funds, and dole out mindset of the beneficiaries for extension projects. In addition, the research culture is not yet fully embraced by the faculty resulting in limited involvement and publication. Panduyos *et al.* (2016) defined research culture index as the presence of a uniform belief system, practices, and ways of conducting a study in the academe. Relative to this, the Philippine National Higher Education Research Agenda-2 was formulated to support the goals of higher education to develop top calibre workforce who are globally competitive by improving their research capability (CHED, 2010).

Looking at the weakness of the two (2) mentioned colleges suggests the need to increase student involvement in inter-country mobility, pursue institutional accreditation and COD for its program offering, and improve performance in the board examination. In terms of research, findings also imply the need to establish a research center, enhance research culture to increase faculty involvement in research, paper presentation and publication and inventions: as more papers are published, citations will also increase. Furthermore, the results suggest the need to increase the number of partnerships with other organizations to increase faculty involvement in research, paper presentation and publication and inventions and more papers are being published, citations will also increase. Likewise,there is also a need to increase the number of partnerships with other organizations to increase the number of adopters engaged in viable demonstration farms, enhance faculty and staff development, including institutional performance to be recognized by reputable organizations.

The fourth problem analyzed the relationship between the seven (7) different quality management dimensions as the independent variables and the institutional performance of four (4) SUCs in Region XII as the dependent variable, which were tested using the multiple linear regression.

Before proceeding to estimate and predict $\hat{y}$ using the linear regression model, the validity of regression assumptions was verified. The computer-generated Normal P-P Plot of Regression Standardized Residual shows the linear relationship between the dependent and the independent variables based on trend/ regression type. Moreover, using a significant (Sig value = 0.000 < 0.05) Kolmogorov-Smirnov and Shapiro-Wilk test for normality, the dependent variable *Y* (Institutional Performance) is not normally distributed. This is because the values of Y (institutional performance) are the same for all students and faculty within the same institution. This can be remedied by increasing the sample size to at least 20 samples per predictor times seven (7) predictors, which is less than the actual sample size of 626. Similarly, there exists multicollinearity, which implies that two or more predictor variables are highly correlated with one another.

Using ANOVA, the hypothesis stating that there is no significant linear correlation between the level of quality management practices and institutional performance among SUCs in Region XII is rejected since Fc > P = .001. Thus, at least one of the predictor-variables is significantly contributing to institutional performance.

After finding out the significant relationship among several variables, finding an equation to express the relationship followed using multiple linear regression analysis. Table 5 exhbits the estimates of parameters for the multiple linear regression analysis for institutional performance among SUCs in Region XII. Results of the regression revealed that two (2) out of seven (7) predictors contributed significantly to the institutional performance ($\hat{y}$) of the SUCs in Region XII, namely leadership and faculty and staff focus. Higher leadership scores correlated positively with institutional performance (b = 5.988) followed by faculty and staff focus (b = 4.603) as significant predictors of institutional performance.

Table 5. Estimates of parameters for multiple linear regression analysis for institutional performance among SUCs in Region XII

Predictors	Coefficient	Standard Error	Sig
Constant	7.389	2.824	.009
x1	5.988	1.318	.000*
x2	-1.023	1.575	.516^{ns}
x3	-1.403	1.413	.321^{ns}
x4	-.406	1.289	.753^{ns}
x5	4.603	1.471	.002*
x6	-.611	1.687	.717^{ns}
x7	-.470	1.437	.744^{ns}
R^2=17.9%			

**significant @ 5% level*
^{ns} not significant

The slope or beta is interpreted as a percent change in the dependent variable (Institutional Performance) for every 1% change in the predictor, say from 3 to 4 or 4 to 5 rating, holding other predictors constant. This means that institutional performance is increased by 5.988% for every 1% change in the rating for leadership, holding other variables constant. In like manner, SUCs performance is also increased by 4.603% for every 1% change in the rating for faculty and staff focus holding other variables constant.

The significant contribution of leadership to institutional performance was due to the following evidence: long-term planning by creating strategic direction and communicating clear vision, mission, and goals; continuous and open communication with staff and faculty; addressing the welfare and satisfaction of the personnel; and continuous review of organizational performance. Similarly, the significant contribution of faculty and staff focus was attributed to the following evidence: providing a workflow that ensures ongoing education and training for the employees; implementing compensation and recognition approaches that include rewarding exemplary performance; and reinforcing the use of new knowledge and skills obtained by employees on the job.

On the other hand, the other five (5) predictors showed weak and marginal influence on institutional performance (Padua & Santos, 1998). Interpreting the coefficient as the slope of the predictors and substituting these values in the model, the regression equation expressing institutional performance ($\hat{y}$) in terms of Baldridge Criteria is:

$$\hat{y} = 7.389 + 5.988x_1 - 1.023x_2 - 1.403x_3 - 0.406x_4 + 4.603x_5 - 0.611x_6 - 0.470x_7$$

Furthermore, a negative coefficient or slope implies that SUC performance is decreased by its slope in percent for every 1% increase in the rating for the predictor, holding other predictors constant. This means that holding other predictors constant, the SUCs' performance decreases by 1.023% for every 1% change in the rating for strategic planning or by 1.403% for every 1% change in the rating for student, stakeholders, and market focus. The negative coefficient is a strong indication of multicollinearity since this negative sign of the regression coefficient is contrary to what the researchers would intuitively expect the contributions of those

variables to be (Mendelhall *et al.*, 1999). This implies that two or more of the predictor variables are highly correlated with each other.

Similarly, the coefficient of determination (R2) = 17.9% indicates that 17.9% of the variation of institutional performance is due to or attributed to the combined predictors in the Baldridge Criteria. Conversely, 82.1% of the variation of the dependent variable is due to factors other than the predictor variables. This finding runs parallel with that of Evangelista and Hechanova (2015) who argued that business excellence in terms of the 7 dimensions used in this present study was significantly related with competitiveness among electric cooperatives in Region XII. Similarly, Yasin and Hechanova (2019) indicated that there is significant relationship between human resource roles consisting of administrative expert, employee champion and change agent, organizational performance and strategic partner through the Performance-Based Bonuses parameters involving the same SUCs in this present study. This is supported by the findings of Kunagaratnam (2018) who argued that a higher learning institution's success is defined by the performance of its leaders, employees, and the quality of services rendered. Moreover, leadership is seen as a driver for all components in the Baldridge System (Badri *et al.,* 2006).

4.0 Conclusion

The processes and practices towards performance excellence of State Higher Education Institutions in Region XII are highly extensive and functioning very effectively in all dimensions in the Baldridge Criteria. It is concluded that SUCs in Region 12 are nearing their quality excellence target. This implies that the SUCs are focused on the long-term aspects of their respective institutions, characterized by the kind of leadership that creates direction and strategic plans that address student learning and development, sustains active relationship between students & stakeholders, data-based management, ensures education and training for faculty and staff focus, designs work processes in line with organizational goals and competence, which, in turn, creates high trust in the institution among and between stakeholders. The assessments on quality management practices were influenced by the groupings of the respondents.

The SUCs in Region XII performed differently in institutional leveling. SUC-Y performed excellently, while SUC-X followed with a very satisfactory rating in all the four key areas. SUC-Z obtained the lowest points implying the need to increase student involvement in inter-country mobility, pursue institutional accreditation and COD for the program offerings, and improve institutional performance in the board examination. In terms of research, there is a need to establish more research centers, enhance the research culture of the faculty to increase their involvement in research, paper presentation, publication, and invention. Findings also suggest that the SUCs were in different stages of development and institutional performance.

Institutional performance is affected by the management practices following the Baldridge Criteria for Performance Excellence. Leadership and faculty and staff focus were significant predictors of institutional performance, while the five other predictors showed weak and marginal influence on the said performance. This implies that any improvement in the quality management practices and processes, particularly on leadership and faculty and staff focus can enhance the performance of the SUCs in Region 12.

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