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## Status of SUC's in Mindanao on PRC Exam: A Cluster Analysis

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### *Abstract*

*The assessment of performance of State Universities and Colleges in the region is important regarding the status of the current issues and concerns that beset in the region among Higher Education Institutions. The study aimed to determine which among the SUCs have similarities and commonalities in terms of average percentage on board examination results and identify variables that solely contribute the guarantee of higher chances in passing the board exam. The researcher used the data mining technique. Particularly, this study utilized the data sets from AIM Philippines with identified variables (number of faculty engaged in instruction, research, linkages, consultancy; number of faculty with MS, and Ph.D., number of degree programs and number of enrolment) and from internet source, total average percentage in PRC results of selected fourteen SUCs in Mindanao during the SY 2011. After the organization of data, it underwent to Cluster Analysis with the aid of the available statistical software. The result revealed that the performance of SUCs in Mindanao in terms of PRC result depends largely on the commitment of every faculty and the motivation of every administration. It is manifested that the more the institution aim on excellent performance of their graduates the more chances their graduates are highly motivated to pass the Board Exam. Therefore, it is necessary that SUC should submit their programs for accreditation on Center of Excellence and Center of Development towards quality higher education.*

**Keywords:** State Universities and Colleges (SUCs), Professional Regulation Commission Exam (PRC) Result, Cluster Analysis

## Introduction

The assessment of performance of State Universities and Colleges (SUCs) in Mindanao is important regarding on the status of the current issues and concerns that beset the region among Higher Education Institutions. Perhaps, the Commission on Higher Education (CHED) addresses the many issues and concerns surrounding the higher education system. Eventually, SUCs provides special scholarships particularly to faculty and even students in less fortunate or disadvantage areas to make higher education accessible to the poor but deserving students. However, State Universities and Colleges haunted several issues and which limited the access to higher education and deteriorate the quality of higher education due to inadequate faculty credentials as indicated by the declining performance of graduates in the Professional Regulations Commission results.

Several studies (*Predday and Nuqui, 2001, Tan, 2001 and Licuanan as cited by Cuenca, 2011*) stressed out the assessment of performance of the State Universities and Colleges along particular issues on the quality of Higher Education Institutions in the Philippines. Cave et.al., (1991) described a performance indicator such as degree results as a quality – adjusted measure of output of any institutions. The article by Breu and Raab (1994) reported findings that universities with high prestige and reputation did not necessarily produce higher student satisfaction. Thus, universities spend less on enhancing perceived quality and spend more effort on raising efficiency on certain aspects.

With this information, there is a need for analysis particularly in Professional Regulation (PRC) examination results among State Universities and Colleges in Mindanao relative to the identified variables. Accordingly, the quality of education in higher education may be measured by the passing percentage in the professional licensure examination that is given by the Professional Regulations Commission (PRC) for a variety of fields of study (Manasan, 2012).

In this regard, the paper aimed to determined which among the SUC's have similarities and commonalities in terms of average percentage on board examination results and identify variables that solely contribute the guarantee of higher chances in passing the board exam.

## Methods

The researcher used the data mining technique. Particularly, this study utilized the data sets from AIM Philippines with identified variables (number of faculty engaged in instruction, research, linkages, consultancy; number of faculty with MS, and Ph.D, number of degree programs and number of enrolment,) and from internet source ([www.ched.gov.ph](http://www.ched.gov.ph)), total average percentage in PRC results of selected fourteen (14) SUCs in Mindanao during the SY 2011.

After the organization of data, it underwent to Cluster Analysis with the aid of the MINITAB software. The Cluster Analysis is a multivariate exploratory data analysis method which aims to group individuals according to their similarities on certain measurable factors and variables. This method was specifically used in the study to group State Universities and Colleges in Mindanao according to the set of variables used in the study. Consequently, the

researchers was utilized a regression analysis to determine the variables that solely contribute the guarantee of higher chances in passing the board examination.

From the results of cluster analysis, statements were formed which were then used as bases for the findings, conclusions and recommendations.

## Results and Discussions

Figure 1 portrays the segmenting of State Universities and Colleges in Mindanao having commonalities in terms of their average percentage on Board Exam results with the aid of cluster analysis. It was clustered into three categories. Of these, 12 SUC's belong to cluster 1, while 1 SUC belongs to clusters 2 and 3 as seen in figure 1.

Cluster 2 and Cluster 3 are the group of university leading state university in the Philippines. Like, University of Southern Mindanao (USM) in cluster 2 is one of the four leading state universities in the country that achieved excellence in agriculture. It was one of nine (9) among 120 state – owned universities and colleges that earned level IV status. For the last five decades, USM has produced marketable graduates who have distinguished with their leadership, industry, and dedication to work. The university continues to instill the value of academic excellence and hardworking among its students. Enviably USM maintains of producing topnotchers and passers of various board examination given by Professional Regulation Commission.

Cluster 1	Cluster 2	Cluster 3
SSCT		
CSU		
SDSSU		
SSC		
SKSU		
DNCS		
MOSCAT		
BUKSU		
ZCSPC		
ZCSCMT		
JHCSC		
JRMSU		
	USM	MUST

**Fig. 1 Clustering of SUCs in Mindanao**

On the other hand, Mindanao University of Science and Technology (MUST) in Cluster 3 is one of the country's leading providers of scientific and technological knowledge and skills. Furthermore, it provides advanced education, higher technological, professional and advanced instructions in mathematics, science, technology, engineering, and advanced research and extension work in human resource development in critical skills and competencies required for global competitiveness. In addition, MUST has developed a functional university research

program, build-up its human resources and research facilities. MUST Research and Development office is developing the critical mass of researchers in the university. Thus more faculty and graduate students are getting interested in research activities. This was evidently showed by the number of research outputs published in local, national and international journals. This university was once recognized by the Commission on Higher Education (CHED), Manila as the Zonal Research Center for Region 10 and CARAGA.

The result (Table 1) further explains that SUCs which were classified along cluster 1 are out-numbered of faculty involvement in instruction, training, consultancy, research and linkages compared to clusters 2 and 3. This is because of the fact that most of the SUCs under cluster 1 are newly converted to state colleges from vocational or perhaps from state colleges to universities. Further, it is because most, if not all, the faculty members were not properly motivated to meet the needs or requirements of every state colleges or universities like research. Comparably, the average percentage of PRC results was low compared to State University within clusters 2 and 3. This is because these are the leading institution having been producing topnotcher graduates on the various disciplines. In other words, to become highly competitive graduates, the faculty must continue their educational qualification in line with their field of specialization to produce better results in the board exam as far as their graduates are concerned. State Universities and Colleges (SUCs) with low performance in the PRC results is mainly characterized on the less faculty involvement in research, linkages, training and even on the educational qualification such as Master of Science (MS) and Doctor of Philosophy (Ph.D).

**Table 1** Cluster Analysis among SUCs in Mindanao

Variable	Cluster1	Cluster2	Cluster3
instruction	105.08	467.0	97.00
Training	34.83	117.0	32.00
consultancy	12.00	77.0	19.00
Research	20.58	128.0	41.00
Linkaging	22.08	83.0	32.00
Ph.d.	19.17	93.0	12.00
MS	68.42	225.0	52.00
Bacc.	58.58	170.0	33.00
No.Degree	19.75	44.0	37.00
Freq.en	3086.42	16736.0	7854.00
AVe.PRC	25.18	33.1	41.61

The present findings corroborated with the Commission on Higher Education (CHED) order. 30 series of 2012, stating that "criteria and implementing guidelines for the identification, support and development of centers of excellence and centers of development for the history program". Section 8 of the "Higher Education Act of 1994" provides that the Commission develop Centers that can spearhead the nation's thrust toward development. It is, therefore, the policy of the Commission to promote quality and excellence on higher education institutions (HEIs). Thus, the program seeks to accelerate the development of teaching, research, and service / extension programs in history in higher education institutions.

To determine a model on percentage of average board exam solely affected the predictor variables identified in the study using regression analysis. With the aid of available statistical software the generated output was presented on the equation below.

The regression equation is

$$\% \text{ board passers} = 39.5 + 0.00016 \text{ enrollment size} - 0.105 \text{ bacc.Deg} - 0.250 \text{ MS} + 0.779 \text{ Ph.D} + 0.405 \text{ linkaging} - 0.191 \text{ research} + 0.602 \text{ consultancy} - 0.524 \text{ training}$$

The equation simply states that when all the variables are held constant, for every faculty did not engaged on training, the percentage of graduates to pass the board exam will decrease of about 0.524. Similarly, for every faculty did not undertook research and do not pursue their broader educational outlook will tend to slightly affect the percentage of passers on board examination. This means that each faculty will continue to enhance their knowledge, skills on their discipline. So much to that, it would be a great pleasure to the administration to strengthen the call of everybody to conduct research, engage in linkage and pursue their masters and doctoral degree provided it was aligned with their field of specialization.

## Conclusions

The performance of SUCs in Mindanao in terms of PRC result depends largely on the commitment of every faculty and the motivation of every administration. It is manifested that the more the institution aim on excellent performance of their graduates the more chances their graduates are highly motivated to pass the Board Exam. Therefore, it is necessary that SUC should submit their programs for accreditation on Center of Excellence and Center of Development towards quality higher education.

## Recommendations

From the foregoing results and discussions, the following are hereby recommended. The encouragement of faculty to enhance their educational qualification must be imposed to all SUCs not only in Mindanao rather in the Philippines as a whole. Programs with board exams must be accredited to Center of Excellence to ensure quality of graduates.

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