

Research Management and Operation of State Universities and Colleges: A Key to Competitive Advantage

Marianne B Calayag¹, Ivy Mar J Ramos¹, Alfredo L Taluban Jr.¹

¹*Bulacan State University and Bulacan Agricultural State College, Bulacan, Philippines.*

Corresponding Author: marianne.calayag@bulsu.edu.ph

Abstract: - Research is conducted to evaluate the validity of a hypothesis or an interpretive framework; to assemble a body of substantive knowledge and findings for sharing them in appropriate manners, and to generate questions for further inquiries. Research plays a major part in state universities and colleges or for any other university for that matter. It is one of the mandated outputs not just for the students but even for the faculty in a university. Students and faculty are expected to produce one or two research papers every year. It also plays an integral role in discoveries and development. Every state universities and colleges have different strategies and policies in doing research. Each also has its own Research Management Office and its functions. This study will compare the research management and operation in state universities and colleges. Knowing the different methods each university implements, we will know the best practices and help improve the processes in managing research.

Key Words: —*Research, State Universities, Research Papers.*

I. INTRODUCTION

The State Universities and Colleges (SUC) in the Philippines are mandated by their respective charters to execute and perform the following functions, Instructions, Research, Extension and Production, with are considered interrelated and mutually reinforcing. Among the mandated functions, research is essential aspect of assessment for academic positions. It is the responsibility of the institution to encourage faculty members to conduct research activities. Research publication is not enough; research output must have an impact on the communities that the SUC are serving.

According to Akhilesh (2014), research activities contribute significantly to the overall organizational performance and growth. In this era of achieving competitive advantage, efficient management of research activity is not only critical but also a part of a survival strategy. Research management and operation includes, project planning, implementation, monitoring and evaluation. In addition, it includes sourcing, managing and liaising funds. All this comes on top of research activities such as dissemination, publications, patenting and in many cases commercialization.

In this research study, the main objective is to evaluate the research management and operation of selected state universities in Region III. Furthermore, the researchers formulated the following specific problems.

How May the Research Management and Operation Be Described In Terms Of

- Research Agenda
- Organizational Structure
- Faculty Commitment
- Budget Utilization

What Is the Level of Accomplishment In Terms of

- Quantity of Research
- Published Researches
- Patented Researches
- Commercialized Researches

Is there a significant relationship between research management and operation to the level of accomplishment.

II. SIGNIFICANCE OF THE STUDY

According to Hampshire College, research is a process of systematic inquiry that entails collection of data; documentation of critical information; and analysis and interpretation of that data/information, following suitable

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methodologies set by specific professional fields and academic disciplines.

The study will be beneficial to the following:

- The Research Management Office of State Universities and Colleges – this study can be a basis for best practices and can help improve the existing operation each SUCs implement.
- The researchers, both faculty and students – this study will help the researchers in managing the process of doing research, concentrating on the study rather than the process of doing research.
- The State Universities and Colleges- this study will help SUCs develop the strategies that apply to them and improve on their existing research management and operation.

III. SCOPE AND LIMITATION

The study will focus on the research management and operation of state universities and colleges in Region III. The study is conducted from February to May of 2021. The study is limited to the management and operation of research including sources and allocation of the research budget. Other aspects like researchers' credentials and capabilities are not included in this study.

IV. METHODOLOGY

This part presents the methods and techniques of study, population and sample of the study, the research instruments, data gathering procedures and data processing, and statistical measures and treatments applied in the analysis and interpretation of data.

To come up with the result of the study, the researchers will use different methods and techniques. Through the help of these methods and techniques, the researchers will create good output. It will also serve as guide to recommend better solutions in the existing problems that will be encountered.

The researchers will utilize a descriptive and evaluative research design. First, a descriptive research design will be used to illustrate and determine the research management and operation variables that the state universities and colleges uses. These four groups of variables are research agenda, organizational structure, faculty commitment and budget utilization. In the evaluative are to be analyzed. In the evaluative research design, the researchers used a written

questionnaire. This written questionnaire is composed of multiple-choice questions that will evaluate the status of research management and operations of state universities and colleges and the level of accomplishment in terms of quantity of research, published researches, patented researches and commercialized researches.

V. POPULATION AND SAMPLE OF THE STUDY

In this study, there are three groups of respondents namely: the top management, the faculty members and non-academic personnel of state universities and colleges in Region III. A non-probability sample was used, specifically a purposive sampling. A non-probability sampling is any sampling method where some elements of the population have no chance of selection, or where the probability of selection cannot be accurately determined. It is incumbent on the researchers to clearly define the target population. There are no strict rules to follow, and the researchers must rely on the logic and judgment. The population is defined in keeping with the objectives of the study.

Usually, the population is too large for the researcher to attempt to survey all its members. A small, but carefully chosen sample reflects the characteristics of the population from which it is drawn.

VI. RESEARCH INSTRUMENT OF THE STUDY

Questionnaires are very cost effective when compared to face-to-face interviews. This is especially true for studies involving large sample sizes and large geographic areas. Written questionnaires become even more cost effective as the number of research questions increases. Questionnaires are easy to analyze. Data entry and tabulation for nearly all surveys can be easily done with many computer packages.

Questionnaires are familiar to most people. Nearly everyone has had some experience completing questionnaires and they generally do not make people apprehensive. Questionnaires reduce bias. There is uniform question presentation and no intermediary bias. The researcher owns opinion will not influence the respondents to answer questions in a certain manner. There are no verbal or visual clues to influence the respondents.

Questionnaires are less intrusive than telephone or face-to-face surveys. When a respondent receives a questionnaire in the mail, he is free to complete the questionnaire on his timetable.

Unlike other research methods, the respondent is not interrupted by research instrument.

This study used a two-set of questionnaires to assess the level of accomplishment of state universities and colleges in terms of quantity of research, published research, patented research, and commercialized research and the status of research management and operations in terms of research agenda, organizational structure, faculty commitment and budget utilization.

VII. DATA GATHERING PROCEDURE

A locally made survey instrument patterned to research containing statements about the included variables was used. This survey instrument was submitted to experts for face validation. This faced validated instrument was administered by the researchers to the target respondents using google form.

VIII. DATA PROCESSING AND STATISTICAL TREATMENT

Descriptive statistical tools like frequency, standard deviation and mean are used to answer specific question numbers one and two. Correlation analysis was used to answer specific question number three. For accuracy reason, computer software known as Statistical Package for Social Sciences (SPSS) was used.

The following Likert scale was used in the responses.

Table.1. for Research Agenda and Organizational Structure

Rating Scale	Verbal Description
4.21-5.00	Well-defined (WD)
3.41-4.20	Defined (D)
2.61-3.40	Moderately Defined (MD)
1.81-2.60	Less Defined (LD)
1.00-1.80	Not Defined (ND)

Table.2. for Faculty Commitment

Rating Scale	Verbal Description
4.21-5.00	Always (A)
3.41-4.20	Very Often (VO)
2.61-3.40	Sometimes (S)
1.81-2.60	Rarely (R)
1.00-1.80	Never (N)

Table.3. for Budget Utilization

Rating Scale	Verbal Description
4.21-5.00	Very Effective (VE)
3.41-4.20	Effective (E)
2.61-3.40	Moderately Effective (ME)
1.81-2.60	Less Effective (LE)
1.00-1.80	Not Effective (NE)

IX. RESULTS AND DISCUSSION

This part presents analyses and interprets the data gathered from the respondents. These data were gathered for the purpose of evaluating the effectiveness of research management and operations of state universities and colleges in region III.

For better understanding the interpretation of the data, the presentation is done part by part according to the specific problems presented in the introduction. The first part of the presentation is about the research management and operations of SUC in region III. The second part of the presentation discuss the level of accomplishment in terms of quantity of research, published research, patented research, and commercialized research.

A. Research Management and Operations of SUCs In Terms of:

Research Agenda:

Research agenda is very important component in managing the research activities of any higher education institution. A research agenda best described as a formal plan of action that summarizes specific issues and ideas in any field of study. Considering this concept, the researchers assess the construction and components of SUCs research agenda. Results of the evaluation were summarized in table.4.

Table.4. Research Management and Operation in terms of Research Agenda

Item Statement	Mean	VD
1. The research agenda defines research priorities of the college/university.	4.61	WD
2. The research agenda provides focus and guidance to the research efforts of the college/university.	4.59	WD

3. The research agenda describes the formal plan of action of the college/university.	4.48	WD
4. The research agenda defines how it will contribute to the attainment of vision, mission, and goals of the college/university.	4.46	WD
5. The research agenda reflects the national research priorities.	4.54	WD
Overall Mean	4.54	WD

Table.4. shows the research management and operation in terms of research agenda. A perusal of numerical data presented in table.4. Shows that all five indicators recorded a mean score ranging from 4.46 to 4.61. The numerical results that the research agenda is well-defined. The respondents agree that the research agenda defines research priorities and provides focus and guidance to the research efforts of their university/college. This finding is statistically supported by computed overall mean of 4.54.

Organizational Structure:

An organizational structure is an outline how certain activities are directed to achieve the goals and objectives of an organization. In addition, it determines how information flows between levels within the organization. Table.5. shows the research management and operations in terms of organizational structure.

A perusal of numerical data presented in table.5. Shows all five indicators recorded mean score of 4.17 to 4.46. These numerical results indicates that the research management and operation in terms of organizational structure is well defined. The finding is statistically supported by computed overall mean of 4.29.

Table.5. Research Management and Operation in terms of organizational Structure

Item Statement	Mean	VD
1. The powers, functions / duties and responsibilities / accountabilities of officials are defined and delineated.	4.26	WD
2. The organizational structure defines specific hierarchy within the organization.	4.46	WD

3. The organizational structure defined the functional relationship in decision-making.	4.30	WD
4. The organizational structure defined the lines of communication and coordination.	4.24	WD
5. The organizational structure defined how certain activities are directed to achieve the goals.	4.17	D
Overall Mean	4.29	WD

Faculty Commitment:

Commitment is very important in achieving the goals and objectives of any organization. Commitment is dedication to a particular organization, cause, or belief and ta willingness to get involved. Table.6. shows the research management and operation in terms of faculty commitment. A perusal of numerical data presented in table.6. shows that all five indicators recorded a mean score of raging from 3.98 to 4.15. These numerical results indicates that research management and operations in terms of faculty commitment is described as very often. This finding is statistically supported by computed overall mean of 4.08.

Table.6. Research Management and Operation in terms of Faculty Commitment

Item Statement	Mean	VD
1. The faculty and other stakeholders show willingness to share them knowledge for the development of your research activities.	4.15	VO
2. The faculty members participate in the different research activities.	4.15	VO
3. The faculty members show strong cooperation and coordination for the fulfillment of the research agenda.	4.07	VO
4. The faculty members are emotionally attached with and involve in the achievement of research goals.	3.98	VO
5. The faculty members show strong obligation to the institution in relation to research activities.	4.04	VO
Overall Mean	4.08	VO

Budget Utilization:

Table.7. shows the research management and operations in terms of budget utilization. A perusal of numerical data presented in table.10. shows that all five indicators recorded mean score of ranging from 4.15 to 4.37. These numerical results indicate that the research management and operations in terms of budget utilization is very effective. This finding is statistically supported by computed overall mean of 4.24.

Table.7. Research Management and Operation in terms of Budget Utilization

Item Statement	Mean	VD
1. The institution maintains linkages with other agencies for funding support and assistance.	4.28	VE
2. The institution avails financial resources in the form of research grants and commissioned research	4.37	VE
3. The institution adequately funds research activities/program.	4.15	E
4. The institutions effectively utilized research funds.	4.15	E
5. The institution outsources funds for research activities.	4.22	VE
OVERALL MEAN	4.24	VE

B. Level of Accomplishment In Terms Of:

Quantity of Research:

Table.8. shows the distribution of number of completed research in the past 3 years. Fifty-eight percent (58%) of the respondents said that their institution completed less than a hundred research

Table.8. Distribution of Level of Accomplishment in terms of Quantity of Research

Quantity of Research	Frequency	Percentage
500 and above	0	0.0%
250 to 499	1	2.2%
150 to 249	4	8.7%
100 to 149	14	30.4%
99 and below	27	58.7%
Total	46	100%

Published Research:

The table.9. Below shows the distribution of level of accomplishment in terms of published research. The range of published research is from 25 and below for both international and CHED accredited journals.

Table.9. Distribution of Level of Accomplishment in terms of Published Research.

Published Research	International		Accredited by CHED	
	f	%	f	%
100 and above	0	0.0%	0	0.0%
76 to 99	0	0.0%	0	0.0%
51 to 75	3	6.5%	3	6.5%
26 to 50	7	15.2%	3	6.5%
25 and below	36	78.3%	40	87.0%
Total	46	100%	46	100%

Patented Research:

Table.10. presents the number of research patented for the last 3 years. In this table presented the number of patented research ranging from 1 to 20 research.

Table.10. Distribution of Level of Accomplishment in terms of Patented Research

Patented Research	Frequency	Percentage
41 and above	0	0.0%
31 to 40	0	0.0%
21 to 30	0	0.0%
11 to 20	6	13.0%
10 and below	40	87.0%
Total	46	100%

Commercialized Research:

The table below presents the number of commercialized research. In this table indicates the number of commercialized research ranging from 1 to 20 research.

Table.11. Distribution of Level of Accomplishment in terms of Commercialized Research

Commercialized Research	Frequency	Percentage
41 and above	0	0.0%
31 to 40	1	2.2%

21 to 30	0	0.0%
11 to 20	5	10.9%
10 and below	40	87.0%
Total	46	100%

C. Relationship Level between Research Management and Operations to the Level of Accomplishment

The main objective of this research paper is to evaluate the research management and operation of selected state universities in Region III in terms of research agenda, organizational structure, faculty commitment and budget utilization.

Table.12. shows the relationship of research management and operations to the level of accomplishment

Research Management and Operation	Level of Accomplishment			
	Quantity of Research	Publish Research	Patented Research	Commercialized Research
Research Agenda	-0.700 ns	-0.667 ns	-0.447 ns	-0.359 ns
	(0.188)	(0.219)	(0.450)	(0.553)
Organizational Structure	-0.700 ns	-0.821 ns	-.894*	-0.667 ns
	(0.188)	(0.089)	(0.041)	(0.219)
Faculty Commitment	-0.872 ns	-.895*	-0.803 ns	-0.658 ns
	(0.054)	(0.040)	(0.102)	(0.227)
Budget Utilization	-0.564 ns	-0.632 ns	-0.344 ns	-0.079 ns
	(0.322)	(0.253)	(0.571)	(0.900)

As shown in table.12. Organizational structure has relationship to the number of patented research. The group agreed that a well-defined organizational structure has something to do with the number of patented research. In addition, faculty commitment has relationship to the number of published research. The results are supported statistically by the commuted p-values of 0.041 and 0.040 respectively.

X. SUMMARY OF FINDINGS

- The research management and operation in terms of research agenda is well defined because of overall mean of 4.54.
- The research management and operation in terms of organizational structure is well-defined also as shown in the computed overall mean of 4.29.
- The research management and operation in terms of faculty commitment, the results shows that it is very often that the faculty are committed in doing research.
- In terms of budget utilization, the group agreed that their respective institutions very effective in utilizing the research funds.
- Faculty commitment and organizational structure has significant relationship in the level of accomplishment in terms of published and patented research.

XI. CONCLUSION

The researchers concluded that the research management and operations in terms of faculty commitment and well-defined organizational structure has significant relationship in the level of accomplishment in terms of published and patented research. Furthermore, in order to have a competitive advantage in managing research operation and activities, the SUC must have a unique organizational structure and has policies/guidelines to motivate the faculty members to engage in research activities.

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