Predictors of Research Productivity Among Administrators, Faculty, and Students

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ABSTRACT

Determining the influence of research culture, competency, accountability on research productivity among the administrators, faculty and students in a private non-sectarian university was the primary aim of the study. A purposive sampling was employed to obtain the 174 participants of the study. A valid and reliable survey questionnaire was used to gather the data. A developing research culture is evident. Likewise, the research competency is moderately developed. Accountability is rarely practiced in the conduct of research specifically in publishing results; and, applying and utilization of funds are never practiced. A poor research productivity is evident; hence, there is a need to improve in all areas such as the number of trainings relative to research attended, research proposed, approved, implemented, and the number of publications done by the administrators, faculty, and students. Research culture, competency, and accountability have a positive and highly significant relationship with research productivity. Meanwhile, publishing results, research skills, research capability, and research infrastructure are the best predictors of research productivity.

Keywords: research culture, competence, skills, accountability, productivity

INTRODUCTION

There is a widespread recognition of the importance of conducting research as basis for continuous improvement in school management and how the research culture and research productivity exert an important influence in school and the people who work for them. In wider scale, the importance of quality academic connections and the role of research in the global knowledge economy are understood as central to sustainable economic growth and stability. However, many countries such as developing and third world do not recognize the complexity and the resources needed for building and sustaining the culture in research. Thus, the academicians need to be well-educated to perform their teaching and research responsibilities at the highest levels. In a university, research is one of the trifocal responsibilities. It is so critical that it determines the quality of any higher education institution. The university produces the bulk of original research—both basic and applied, and receive the most funding for research. The call for building a stronger sense of research community has also been felt in the university. The university research culture needs to be assessed. This gap can be attributed to the fact that least emphasis were given in nurturing and reinforcing research activities. Most of the teachers and school administrators lack the time to conduct research, they lack theoretical guidance or knowledge of research methodology, and they feel pressured or frustrated during the process of research. Cognizant of such challenge, the University has been pushing zealously for a stronger research orientation as it strives for evidence-based policy making. Hence, the advent of program and institutional accreditation and other assessment activities in the university such as Institutional Sustainability Assessment and Accreditation, International Standards Organization, etc. requires research as one of the key areas to be assessed.

Academic research represents the backbone of human activity in the way that it improves the quality of life through expanding frontiers of academic knowledge and making further research possible throughout the world (Alzahrani, 2011). Presently, research universities produce much of the new information and analysis that not only leads to important advances in technology but also contributes, just as significantly, to better understanding of the human condition through the social sciences and humanities. They are both national institutions that contribute to culture, technology, and society and international institutions that link to global intellectual and scientific trends.

Furthermore, the importance of research and publication to the effectiveness of the university system as well as its achievement is strongly recognized by

most universities throughout the world. It is a well-known fact that educational institutions have as their main functions, teaching, research and community service (Anijaobi-Idem, Berezi, & Akuegwu, 2012). This notion holds that gathered data through researches should be used not only for the purpose of accountability, but also for the explicit purpose of improving student outcomes and institutional performance. However, according to Iqbal and Azhar (2011), the extra teaching load, performance of administrative duties along with academic duties, lack of funds, nonexistence of research leave, negative attitude of the faculty towards research, lack of research skills, non-availability of latest books, absence of professional journals, less number of university owned journals, are the major causes of low productivity which reduced the research productivity of university faculty members. Hence, there is a need to conduct a study.

FRAMEWORK

This study on research productivity is anchored on the theory of Bandura (1977, 1986) whose thoughts comprise one of the intellectual foundations of education. His theory on self-efficacy serves as the springboard of the study which was derived from Social Cognitive Theory. He proposed that an individual's belief that he or she has the capability of performing a specific task. Furthermore, Bandura's self-efficacy is the belief of an individual to perform tasks or behaviors that result in goals. When presented with a specific task, individuals with moderate to high self-efficacy are more likely to engage in task-related activities and persist longer when faced with adversity. This task frequency and persistence lead to more mastery experiences and further enhance self-efficacy. In contrast, individuals with low self-efficacy engage in fewer coping behaviors and give up more easily when faced with problems. As a result, they have less mastery and an increase in their low self-efficacy (Bandura, 1977, 1986).

The concept on research culture is grounded on the framework Social Constructivism or Sociocultural Theory. An early expression of this viewpoint came from the American psychologist Jerome Bruner (1960, 1966, 1996). He was, from the early stages of his career, influenced most notably by Vygotsky, and was interested in the way culture shapes the human mind. Bruner became convinced that an individual could usually learn more than had been traditionally expected as long as they were given appropriate guidance and resources. He called such support Instructional Scaffolding— literally meaning a temporary framework like the ones used to construct buildings and that allow a much stronger structure

to be built within it. His belief in the importance of providing guidance in the right way and at the right time. When scaffolding is provided, an individual seems more competent and "intelligent," and they learn more. Thus, his theory stresses the interaction between developing people and the culture in which they live. Cheetham (2007) contended that the research culture is the structure that gives a research behavior significance and that allows one to understand and evaluate the research activity. So, an institution's culture of research is not simply a group of scholars who see the importance of research. A culture of research provides an instructional scaffolding in dealing with research, so that a supportive context in research is uniformly expected, discussed, produced, and value.

The competence on research is anchored on Self-Determination Theory (SDT) by Deci and Ryan(2002). The theory is about motivation (extrinsic and intrinsic) and personality that addresses three universal, innate and psychological needs: competence, autonomy, and psychological relatedness. Competence is seeking to control the outcome and experience mastery. The need concerns on achievements, knowledge, and skills, and people have a need to build their competence and develop mastery over tasks that are important to them. On the other hand, psychological relatedness is the universal want to interact, be connected to, and experience caring for others. Considering the application of self-efficacy in research, this can be applied to such tasks as "conducting research and developing scholarly works" (Lambie & Vacarro, 2011) and having the "confidence in being able to successfully complete various aspects of the research process" (Kahn & Scott 1997, as cited by Petko (2012). Hence, teachers with higher research self- efficacy have greater competence and interests in conducting resulting to higher productivity in research.

The Cognitive Moral Development Theory serves as the springboard of the study with respect to accountability in research. It was espoused by Kohlberg (1958) where he expanded the earlier work of Piaget, a cognitive theorist. Kohlberg postulated that cognitive moral development asserts that ethics education is possible. Just as people develop mentally, physically, and emotionally, they develop a moral cognizance/reasoning. Using critical thinking and decision-making tactics such as the Socratic method, people can solve their ethical dilemmas. Kohlberg taught the six stages of ethical thinking, each stage being of greater maturity than the previous one. By delineating these levels, one is allowed to know and test his/her own thinking and decision making. This helps individuals know themselves better and challenges them to move on to a higher level of thinking. However, not everyone achieves all the stages. The theory also

assumed that moral development occurs through social interaction.

Accountability is a social relationship in which a researcher feels an obligation to explain and to justify his or her conduct to some significant other (Bovens, 2005). Relative to the premise of cognitive moral development, it influenced a teacher-researcher on how they should act in the face of accountability requirements. When constantly practiced, it will lead to the development of moral reasoning skills among teacher-researchers especially when faced with decision-making. Furthermore, there is a distinction on the practice of accountability when a researcher collaborates and seeks mentoring from colleague/expert in the field who stressed that responsible ethical conduct is expected in all aspects of research, including applying for funding, experimental design, generating and analyzing data, using equipment and facilities, publishing results and acknowledging the direct and indirect contribution of colleagues, collaborators and others.

In general, accountability is often linked to fiscal responsibilities. These perceptions and understandings are most closely aligned with a regulatory model of accountability (Arens, 2003). Consequently, accountability requires the expectation of being held to account. Its provisions are necessary to ensure that educators perform their job. A common example of accountability is the Hawthorne effect that measuring a behavior changes the behavior (McCambridge, Witton, Elbourne, & Epidemiol, 2014). There are accountability partners that help people keep a commitment, without the requirement of physical contact. In general, accountability is often seen as "transparency" of information.

A study has been conducted investigating teacher's research productivity. Roy, Roberts, and Stewart (2006) examined research productivity with 1,737 current professors of clinical psychology who graduated from APA accredited schools. The publications were reviewed for type of publication over a period from 2000 to 2004. Results indicated that the average graduate from an APA clinical psychology program had 9.59 publications over a five-year period, or less than two per year. There were 220 professors who had not produced a single publication over this period. The results found that there was a strong correlation with program ranking and number of publications.

Fetalver (2010) found out that research capability show the manifestations of positive research management and competence of administrators and faculty in processing research. All research is required to undergo the appropriate research ethics review process. This process is managed by the relevant subject specialist ethical review committees reporting into the Research Ethics, Governance and Integrity Committee. This approach promotes best research practice, takes

account of subject specific issues, and secures the interests and welfare of research participants, researchers and other stakeholders.

Academic researchers publish to establish their claim to a specific result at a specific point in time. When researchers publish their academic studies, it is an opportunity for their peers to access their research and communicate with other academics interested in a similar subject area (Besimoglu, 2007). It may also result in invitations to attend conferences and to referee important papers and books. Alzahrani (2011) also contended that publication of research results is a significant link between the areas of communication and academic awards; thus, academic societies were founded to encourage communication among their members.

In this study, the indicators of an established research culture such as the research infrastructure, research capability, research funding, research collaboration and research interest are the reasons why this study was conceived to identify the presence of these indicators among the administrators, faculty, and students in a private university.

OBJECTIVES OF THE STUDY

The study, generally, aimed to determine the influence of research culture, competency, accountability, on research productivity among the administrators, faculty, and students in a private non-sectarian higher education institution. Specifically, it sought to correlate productivity and: research culture, competency, and accountability.

METHODS

The study used the descriptive-correlational and causal research design. A descriptive method was employed since it was designed to describe the research productivity of faculty and students. The correlation method was applied to determine the relationship of research productivity of administrators, faculty, and students considering their research culture, research competence, and research accountability. A correlational design helps to demonstrate the strength of the relationship between two variables and if the values of those variables vary in strength with reference to the variable it is being compared to (Greasley, 2008). Lambie, Smith, and Ieva (2009) also stated that "a descriptive-correlational design does not infer causal relationships and is, therefore, more conducive to

purposive sampling".   It is suitable to use a correlational design for the study since all the variables in the study are continuous making it possible to examine a relationship and look for causality. The study was conducted in a private non-sectarian university in Cagayan de Oro City involving the administrators, faculty of the different departments and the graduate students. In this study, one hundred seventy-four (174) administrators, faculty, and students in the university participated in the study. For ethical consideration, it was made clear that their participation is voluntary and their personal details were treated with utmost confidentiality.

Survey questionnaires used in research undertakings in the university were adopted from Pabualan (2019) with reliability coefficients of 0.857, 0.955, 0.865 and   0.88 respectively which imply that all the instruments are valid and reliable. Descriptive statistics such as the frequency, percentages, and mean were employed to establish the parameters of the study. Pearson- product moment correlation was used to determine relationship of the variables being studied. Multiple regression analysis was used to determine the extent of influence of the independent variables to research productivity

RESULTS AND DISCUSSION

The first objective of the study aimed at determining the established research culture among the administrators, faculty and students.

Table 1

Established Research Culture among Administrators, Faculty, and Students

Research Culture	Mean	Descriptive Rating	Qualitative Interpretation
Research Collaboration	3. 48	Agree	Developed
Research Capability	3.47	Agree	Developed
Research Infrastructure	3.21	Agree	Developed
Research Interest	3.43	Agree	Developed
Research Funding	3.21	Agree	Developed
Overall Mean	3.36	Agree	Developed

The overall mean of established research culture was 3.36 which means that their research culture is developed. Of these, research collaboration has the highest mean score (3.48) followed by research capability (3.47), research intrest (3.43), research funding (3.21) and research infrastructure (3.21) which have the least mean score. This finding illustrates that research culture among administrators, faculty and students is developed. However, not all teachers are involved in research activities. Problems on research culture is existing in higher education institution. Fostering a research culture means allocating and managing time for the activity. Therefore, culture occurs when research becomes core to the practice function, recognition for doing it, and provision of release time from the practice to engage in research (Hill, 2002).

Table 2

Competency in the Conduct of Research among Administrators, Faculty, and Students

Research Competence	Mean	Qualitative Interpretation
Research Method	2.81	Moderately Developed
Research Skills	2.71	Moderately Developed
Research Design	2.63	Moderately Developed
Overall Mean	2.72	Moderately Developed

The level of competency in Research Method (2.81), Research Skills (2.71) and Research Design (2.63) has an overall mean score of 2.72. This means the competency among administrators, faculty, and students is moderately developed. This confirms the study of Nor' Azah (2007) which revealed that teacher's knowledge and skills regarding research are not high, even when they have a positive attitude toward the implementation of research.

Table 3

Level of Accountability in the Conduct of Research among Administrators, Faculty, and Students.

Research Accountability	Mean	Qualitative Interpretation
Acknowledging Collaborators	2.71	Moderately Practiced
Generating and Analyzing Data	2.63	Moderately Practiced
Using Equipment and Facilities	2.62	Moderately Practiced
Research Design	2.60	Moderately Practiced
Publishing Results	2.99	Moderately Practiced
Applying and Utilization of Funds	2.13	Seldom Practiced
GRAND MEAN	2.61	Moderately Practiced

As shown in Table 3, five dimensions on research accountability revealed that these are moderately practiced. Of these, acknowledging collaborators has the highest mean score (2.71) followed by Generating and Analyzing Data (2.63), Using Equipment and Facilities (2.62), Research Design (2.60). and Publishing Results (2.99) except for Applying and Utilization of Funds (2.13) was seldom practiced..

These results find support Greitens' claim (2012) that practice of accountability are still in their infancy. Ebrahim (2005) asserts that it is generally assumed that more accountability is better but, more accountability arrangements in place does not ensure better performance .

Table 4

Research Productivity among Administrators, Faculty and Students

Research Productivity	Mean	Qualitative Interpretation
Number of trainings relative to research attended	0.42	Improvement Required
Number of action research proposed	0.36	Improvement Required
Number of action research approved	0.18	Improvement Required
Number of publication of conducted action research	0.11	Improvement Required
		Improvement Required
Grand Mean	0.27	

Table 4 shows the research productivity among administrators, faculty, and students for the last five years in the service. A "poor" research productivity in all areas is shown indicating that improvement is required for all the indicators with an overall mean of 0.27. Of these, the "number of trainings relative to research attended" has a mean of 0.42. According to Sheikh, Sheikh, Kaleem, and Waqas (2013), the participation to research seminars, symposiums, and courses would have a positive impact to the researchers as they would be exposed to different methodologies, styles, and concepts of doing research. The "number of research proposed" has a mean of 0.36. Before a research is conducted, a lot of attention is paid to the quality of research proposals (Sandelowski & Barroso, 2003; Connelly & Yoder, 2000). The productivity in terms of the number of research approved and number of publication of conducted action research were also poor. These results show that only few teachers actually conducted a research work. Doing research is a significant tool for professional development which can promote lifelong learning, this did not have to change their teaching practice. The reason given has been that time constraints make it impossible for teachers to do research as they have so much teaching hours to do and they rarely have time to do research (Morales, 2016).

Thus, the extra teaching load, performance of administrative duties along with academic duties, lack of funds, nonexistence of research leave, negative attitude of the faculty towards research, lack of research skills, non-availability of latest books, absence of professional journals, less number of owned journals, are the major causes of low productivity which reduced the research productivity of faculty members (Iqbal & Azhar, 2011). To address this gap, Biruk (2013) stressed that the school management must allocate adequate budget and provide trainings, seminars and workshops to increase the number of teachers who would be involved in research.

Table 5

Relationship Between Research Productivity, Research Culture, Competency and Accountability of Administrators, Faculty, and Students

Dimension	Research Productivity	
	Pearson r	Probability
Research Culture	0.153	0.000**
Research Infrastructure	0.125	0.10^{ns}
Research Capability	0.188	0.01**
Research Funding	0.050	0. 514
Research Collaboration	0.027	0.725
Research Interest	0.163	0.03*.
Research Competency	0.315	0.000**
Research Skills	0.217	0.000**
Research Method	0.220	0.000**
Research Design	0.127	0.097
Research Accountability	0.402	0.000**
Applying and Utilization of Funds	0.059	0.443
Research Design	0.196	0.01**
Generating and Analyzing Data	0.214	0.000**
Using Equipment and Facilities	0.188	0.01**
Publishing Results	0.149	0.05*
Acknowledging Collaborators	0.147	0.05*

**Correlation is significant at the 0.01 level (2-tailed)
ns- not significant

The overall findings of the study showed the correlation coefficient of research productivity with components, research culture (r =0.153, p =0.000), research competency (r = 0.315, p= 0.000), research accountability (r = 0.4021, p= 0.000). as shown in Table 5. The data imply a statistically significant relationship between the research productivity and research culture, competence, and accountability indicating the more developed the research culture, the more competent and accountable the researchers, and the more productive they are. Therefore, a positive research culture, a competent and accountable researchers will also lead to an outstanding research productivity. This finding is supported by Pabualan (2019) that culture and resource allocation of the institution plays an important role in quality of research output. In general, there is a strong relationship that exists between research productivity and: research culture, competency, and accountability. Thus, the null hypothesis that there is no significant

relationship between research productivity and research culture, competency, and accountability is rejected.

Table 6

Regression analysis between research productivity and: research culture, competence and accountability among administrators, faculty, and students

INDEPENDENT VARIABLES	UNSTANDARDIZED COEFFICIENTS		STANDARDIZED COEFFICIENTS	t	Sig.
	B	Std. Error	Beta		
CONSTANT	-1.606	.797		-2.015	.046
Research Culture Research Capability	.375	.196	.184	1.911	.051
Research Infrastructure	.249	.143	.152	1.744	.052
Competency Research Skills	.341	.176	-.284	-1.691	.053
Accountability Publishing Result	.201	.196	.313	1.700	.050
R= 0.380	R²=.144	F-value = 1.901		P- value = 0.030	

*T*able 6 presents the variables that best predict the research productivity among administrators, faculty, and students in the university. The variable under the Research Culture (Research Capability and Research Infrastructure), Research Competency (Research Skills), and Research Accountability (Publishing Result) were the variables that best predict research productivity. Of these, Publishing Results has the highest beta weight of .313. Publishing results is a strong factor to improve research productivity coupled research capability and research infrastructure and research skills. The four (4) constructs accounted or explained 14.4% (R^2) of the variation on research productivity, by which 85.6% were attributed to other factors not included in the study. The F-value = 1.901 ($p<.05$) shows that the   regression model is a good fit model. Thus, the regression model is

$$Y1 = -1.606 + .375X1 + .249X2 + .341X3 - .298X4$$

Where: -1.606 is constant

$Y1$ = research productivity; $X1$ = publishing results; $X2$ = research skills;

$X3$ = research capability; and

$X4$ = research infrastructure

Therefore, the variables such as research competency, culture, and accountability significantly influence the research productivity of administrators, faculty, and students. The null hypothesis that there is no variable that best predicts the research productivity is rejected. This finds support on the study of (Pabualan, 2019) that productivity is anchored on research competency, culture, and accountability.

CONCLUSIONS

Based on the findings of the study, the following conclusions are drawn:

The research culture among administrators, faculty, and students in terms of research collaboration, research capability, research infrastructure, research interest, and research funding is developing. Research competency and accountability is moderately developed. Research productivity is poor in all dimensions. They rarely have time to do research since there is nonexistence of research leave, administrative and teaching duties performed in school, and lack of research skills. Research culture, competence, and accountability are significantly associated to research productivity. The best predictors of research productivity are: publishing results, research skills, capability, and infrastructure.

RECOMMENDATIONS

Based on the conclusions of the study, the following recommendations are drawn:

1. Research planning officers, as well as school administrators, may provide a collegial support for research and development, provide more trainings, research fora and paper conferences regardless of their background in the conduct of research, and strictly supervise the actual practice so that the attitude towards research on the basis of experience will be developed.

It is suggested that load unit/s shall be credited to faculty-researchers so that they will be more motivated to conduct research activities. Policy makers, researchers, and school administrators may consider the findings of research output as foundation for the evidence-based practice such as in formulating school programs, and address the needs of the teachers in order to create a community of teacher-researchers;

2. Faculty are encouraged to strengthen their personal will to learn and do the research undertakings to improve their skills in research and harness their interest. They are encouraged to willingly undergo capability trainings to enhance their

research competencies;

3. Guidelines and monitoring of research accountability are still unclear, and there are no studies published that focus on the accountability in the conduct of research. A research may be explored to create a culture for accountability in research that can foster positive research environment;

4. Research policy makers, administrators, faculty and students   are encouraged to take into account the importance of strong research culture, high level research competence, and accountability as they positively influence research productivity; and

5. Policy makers and school administrators are encouraged to invest on these area of research by commissioning a lecturer to focus on extending their expertise to other faculty on how to fund, manage, facilitate, and conduct collaborative research.

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