

EXPLORING RESEARCH PRODUCTIVITY OF FACULTY IN A STATE UNIVERSITY: IMPLICATIONS FOR INSTITUTIONAL POLICY AND DECISION-MAKING

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Abstract

Research productivity of faculty is the topmost concern of most state universities. Based on the survey conducted, only few of the faculty at Palawan State University had published research in the last six years. This study aimed to identify the predictors of research productivity to provide administrators with research-based information that will serve as the basis in the formulation of institutional research policies that will help increase research productivity. The researcher used descriptive research design and involved the 277 faculty and 12 administrative officials of Palawan State University, PCAT as respondents. Triangulated data gathering techniques which include questionnaire, interview and focus group discussion validated by a panel of experts were used. A parametric test such as multiple regression was used in the statistical analysis of data. This study revealed that gender, rank, and number of teaching hours predicted research productivity. Interviews and focus group discussions disclosed that some of the faculties were self-motivated to do research while others were motivated by points for promotion and load reduction. The university must organize research training and mentoring on the research process; give remuneration; reduce the workload of faculty who conducts research; enhance faculty's self-motivation to do research and set guidelines for promotion of outstanding researchers.

Keywords: Research Productivity, Institutional Policy, Decision making, Faculty, State University

INTRODUCTION

Globalization in education challenges universities to focus on the promotion of the intellect, the quest for truth and wisdom, and the creation and generation of knowledge through research. One of the increasingly pressing priorities of countries around the world is to ensure that their top universities are operating at the cutting edge of intellectual and scientific development. The positive contribution of tertiary education is increasingly recognized as not limited to middle-income and advanced countries. Universities are recognized as modern entrepreneurial engines and generators of new knowledge through research. Hence, the role of academics is not limited to teaching (Altbach & Salmi, 2011, Okiki, 2013). According to Marsh and Hattie (2002), the major responsibilities of academic staff in the modern university are teaching (transmission of knowledge), research (advancement of knowledge) and community service (application of knowledge). However, it should be acknowledged that a value hierarchy exists in the academe in which research and scholarship are at the top of the pyramid, followed by teaching and then community service (Brand, 2000). Beyond the transmission of knowledge, the role of the faculty is extended to a more challenging task of creating and generating knowledge and publishing scientific articles in refereed journals to achieve national and international visibility. The faculty in any higher education institutions are provided the opportunity to focus on an area of inquiry, develop a research program and later share the knowledge with students and

others in the drive to develop professional skills and impact on a field and society as a whole.

Research provides a good platform for teaching faculty members to become successful academics and reinforces the skills needed for effective knowledge transfer. The recognition and advancement of individual academic staff members depend largely on the quantity and quality of their research productions, which are communicated in the form of journal articles, books, technical reports, and other types of publications (Okiki, 2013). In higher education, research productivity often served as a major role in attaining success in academics circles as it is related to promotion, tenure, and salary (Kotrlik, Bartlett, Higgins, & Williams, 2002). Palawan State University has gone so far being a teaching university as evidenced by the remarkable accomplishments of its graduates in licensure examinations given by the Professional Regulation Commission and their work ethics in the workplace. However, after it's more than 50 years of existence as an institution of higher learning, it recently started to blaze a trail towards a research university. The university officials are intrinsically driven to benchmark the transformation of Palawan State University to well-known research-oriented universities in the world. Observations about the prevailing research culture in the university led to an initial survey about the number of faculty who had presented and published research. The survey revealed that only a few among the faculty had presented and published research in the last six years. The low turnout in research productivity among faculty motivated the researcher to conduct a study which aimed to provide research-based information that will serve as the basis of administrators in the design, development and formulation of institutional research policies. Several research have attributed the research productivity among faculty in higher education institutions to a number of factors. Studies conducted by Salom (2013), Bengo, Herrera and Santos (2012) and Jung (2012) collectively pointed out the several factors influencing research productivity among faculty members. However, the predictors of research productivity revealed in their research vary from one institution to another. Thus, specific predictors that exist in a particular institutional context need to be explored. To fill such gap, this study aimed to find out the predictors of research productivity among faculty in higher education. The findings will guide administrators in the development of research policies and guidelines.

Objectives of the Study

This study aimed to provide administrators with research-based information that will serve as the basis in the development of institutional research policies. Specifically, it determined the research productivity of the faculty of Palawan State University based on published research in refereed journals from 2005-2011 and identified the individual and educational characteristics that predict faculty research productivity as well as the perceptions of the administrators about individual, leadership and institutional characteristics that influence faculty research productivity.

Framework

According to Jung (2012), no single theory yet exists that can adequately define the relationship between research productivity and a set of reliable predictors. There are many obstacles to

developing a unified model that could be used to explain the varying levels of research productivity. His research about faculty research productivity in Hong Kong in 2012 revealed that research productivity is highly variable and influenced by a number of factors, including personal and institutional characteristics. The conceptual framework of this study integrates factors that influence faculty research productivity with motivation theories such as expectancy and efficacy theories. The factors associated with faculty research productivity derived from Bland (2005) are classified into individual, institutional and leadership characteristics. Expectancy theory relates to motivation and contributes to an understanding of how individuals make decisions regarding various behavioral alternatives.

In this study, the expectancy theory provides an understanding of the influence of work environmental factors and institutional factors to faculty research productivity. Faculty members interact with their colleagues and their supervisors and work under the institutional regulations and other organizational support systems. Efficacy theory relates to the confidence that a person has capabilities to organize and execute a course of action required to produce given attainments. These abilities are related to self-knowledge or the degree to which faculty understand themselves. The literature review indicated that numerous studies investigating academic research productivity used a range of different theories. From reports of previous studies, it appeared that several factors were found to be associated with research productivity. These factors can be classified into four main groupings such as demographic factors, environment factors, institutional factors and personal career development factors. In this research, the researcher used the characteristics (individual, institutional, and leadership) in the Bland (2002) model that predict faculty research productivity. The researcher conceptualized that individual characteristics such as personal and educational profile (age, gender, civil status, highest degree earned, length of service, appointment, rank, number of teaching hours, number of preparations, number of students, number of hours in an administrative function); motivation; content knowledge; orientation; autonomy and commitment and work habits are the fundamental drivers that encourage faculty members to do and publish research. The leadership and institutional characteristics are supportive factors. If there are no fundamental drivers when the university provides other supportive factors, the university's efforts will be fruitless. On the other hand, if the University can provide supportive factors and the faculty members are motivated to conduct research, significant research outcomes will be produced. Fetalver (2010) conducted a study about predictors of research dissemination and utilization in state higher education institutions in Region IV, Philippines. His study revealed the significant relationship between research dissemination and research rewards, position, age, leadership skills, library facilities, agenda and priorities, goals and objectives in research and foreign funds. Attitudes and interest in research, research networks and linkages, age, research training and library facilities, holdings and materials were known to predict research utilization. Some of the variables that predicted research dissemination and utilization in the study of Fetalver were conceptualized as individual and leadership characteristics that predicted faculty research productivity in the current study. A qualitative thematic analysis of faculty engagement and non-engagement in research published by Bengo et al. (2012) disclosed the faculty's perceptions about conditions facilitating research engagement. Administrative support, time

element, money matter, recognition, individual attributes, career advancement, team collaboration, topic, scope and teacher responsibility were the conditions perceived by the faculty members to have facilitated research engagement. The respondents' perceptions revealed in the research of Bengo et al. imply that faculty members need administrative support, time, money and recognition to engage fully in research. In 2012, Jung also examined the research productivity of Hong Kong academics with particular interest to individual and institutional factors that contribute to productivity. He found out that research productivity is influenced by personal characteristics, workload, differences in research styles and institutional characteristics. Similarly, this research also explored the perceptions of the administrative officials about individual, leadership and institutional characteristics that influenced faculty research productivity at Palawan State University

METHODOLOGY

In this study, the researcher used descriptive design to study the factors that predict faculty research productivity. Quantitative method, a procedure involving the assignment of numerical values to the factors that predict faculty research productivity was used to find out the relationship of the faculty members' personal and educational variables to their research productivity. Qualitative descriptive method was also used in the analysis of the perceptions of the administrative officials about faculty research productivity. Perceptions of administrators about factors that influence research productivity were thematically categorized into individual, leadership and institutional characteristics. Triangulated data gathering techniques which include questionnaires, key informant interview and focus group discussion were used. The questionnaire was used to collect data about the personal and educational characteristics of the faculty. Key informant interview and focus group discussion were conducted among the administrative officials to gather their perceptions about faculty research productivity. The questionnaire and interview guide were validated among the faculty of the external campus who are not respondents of the study. The result of the validation guided the panel of experts in critiquing the research instrument. Documentary analysis was used to determine the research productivity of the faculty which was measured based on the number of research published by the faculty. Mechanical devices such video and camera were used for documentation purposes. The researcher used incidental sampling in selecting the respondents of the study composed of the 277 or 82% of the regular (permanent & temporary) faculty and 12 administrative officials of Palawan State University-PCAT. To comply with research ethics, informed consent to participate in the study was secured by the researcher from the respondents and their decision to refuse was respected. Moreover, the respondents were given full knowledge about the purpose of the study and assured that the confidentiality of data and the anonymity of the respondents were adhered. Parametric statistical test such as multiple regression analysis was used in the statistical analysis and interpretation of the data. Frequency distribution presented the arrangement of data showing the number of research published by the faculty members of Palawan State University from 2015-2021. Multiple regression analysis is used to determine the statistical relationship between the research productivity and the faculty members' personal and educational characteristics.

RESULTS AND DISCUSSION

Table 1: Faculty Research Productivity from 2015-2021

Nature of Publication	2015	2016	2017	2018	2019	2020	2021	Total	%
Local/National	11	0	4	20	21	27	25	108	66%
Other International	0	2	1	18	2	1	14	38	23%
International Scientific Publication	2	0	1	2	2	9	1	17	10%

The table shows a low research turn out in international scientific publications with only 10 percent of the published faculty research. Most of the research are published in local and national journals. The year 2016 recorded the lowest research output although there is an impressive increase in the succeeding years where the faculty have produced 97 research that are disseminated and published locally or nationally. However, publications in international scientific journal need to be given more attention as shown by the recorded decrease in 2017. These findings imply that a faculty must produce more research to be submitted to international scientific publications to promote the university's reputation and to establish international visibility.

Table 2: Regression Model showing the Statistical Relationship between Faculty Research Productivity and Individual Characteristics

Multiple R	0.3923
R Square	0.1539
Adjusted R Score	0.1122
Standard Error	1.3776
Observations	277

The model shows that among the two hundred seventy-eight observations in the study, 11.2% is accounted for by the independent variables (age, gender, civil status; length of service, rank, appointment, the highest degree earned, number of preparations, number of students, number of teaching hours and number of hours in an administrative functions). The result revealed the other factors that correspond to the variance that are not yet covered in this research. Moreover, there is a weak correlation between the faculty research productivity and their personal and educational characteristics as shown by the regression statistics of 0.39.

Table 3: Analysis of Variance on Faculty Research Productivity and Individual Characteristics

	Df	SS	MS	F	Significance F
Regression	13	91.169	7.013	3.695	2.06405E-05
Residual	264	501.046	1.897		
Total	277	592.215			

Table 3 shows that the number of degrees of freedom of 13 at 0.05 level of probability requires the F value of 2.064 to be significant. The computed F value obtained for the individual characteristics is 3.695 which is higher than the required f-value to be significant. Age, gender, civil status, the highest degree earned, length of service, rank, status of appointment, number

of students, number of teaching hours, number of preparations and number of hours in an administrative functions determine the faculty research productivity. Among these selected personal variables, gender, rank and number of teaching hours are significantly related to research productivity. Rank and number of teaching hours were also revealed in the study of Salom, (2013) and Jung, (2012) to have affected the level of research productivity of faculty.

Table 4: Regression Analysis of Faculty Research Productivity and Individual Characteristics

	Coefficients	Standard Error	t-Stat	P-value
Intercept	1.8996	1.1483	1.6541	0.0992
Age	-0.0122	0.0141	-0.8644	0.3881
Gender	0.4418	0.1796	2.4598	0.0145
Single	-0.1759	0.3676	-0.4784	0.6327
Married	-0.0080	0.2696	-0.0297	0.9763
Widow/widower/separated	0.3037	0.4505	0.6742	0.5007
Length of service	-0.0065	0.0128	-0.5099	0.6105
Rank	-0.0838	0.0381	2.1964	0.0289
Status of appointment	0.0770	0.2895	0.2660	0.7904
Highest degree earned	0.0945	0.0881	1.0727	0.2843
No. of preparations	0.0327	0.0895	0.366	0.7146
No. of students	-1.8E-05	0.0015	-0.0114	0.9909
No. of teaching hours	-0.0516	0.0260	-1.9830	0.0483
No. of administrative hours	-0.0285	0.0237	-1.1996	0.2313

The research productivity and individual characteristics when categorized by age is 0.388. The obtained p-value is higher than the probability value of 0.05 that means that there is no significant relationship between the research productivity and age of the faculty members. It supports the findings of Kotrlik, Higgins and Williams (2002). Their study among the 228 colleges and universities in the United States revealed that age does not significantly affect research productivity. However, the study of Teodorescu (2000) about the faculty publication across ten countries disclosed that age significantly influences research productivity in the United States. The research productivity and individual characteristics when categorized by gender and rank are 0.014 and 0.028 respectively which are lower than the probability value of 0.05. It means that there is a significant relationship between faculty research productivity, gender, and rank. The data have shown that male faculty at Palawan State University have more publications compared to female faculty. There exists a gender gap in publication with females publishing less, but it is disappearing over time. The significant differences in research productivity between men and women was also confirmed by Abramo, D'Angelo and Caprasecca (2009) in their study among the entire population of research personnel working in the scientific-technological disciplines of Italian University system. Jung (2012) also found out that male professors in Hong Kong tend to publish more books or articles than female professors and receive more research funding and present their research at more scholarly conferences. This can be attributed to the fact that there are many more men than women in the higher academic ranks and hard disciplines such as engineering or natural science. In contrast,

Teodorescu (2000) concluded that women scholars do not necessarily publish less than their gender counterpart. Moreover, faculty members occupying higher ranks have more publications than those with lower ranks. It can be inferred that most probably research publications have caused the promotion of faculty members to a higher rank. The study of Tien and Blackburn (2000) within a Taiwanese context, demonstrated that academics holding a doctoral qualification, compared with those holding lesser qualifications, were more inclined to publish articles in refereed journals. In his cross-national analysis of the correlates of faculty publication productivity in 2000, Teodorescu found out that an academic's rank correlates positively with research productivity. Since higher ranked positions result in more opportunities to be productive due to better working conditions, invitations to write articles and book chapters and greater overall confidence, senior academics are more productive than junior academics. The number of teaching hours disclosed a relationship to faculty research productivity as shown by 0.048 which is lower than the p-value of 0.05. The beta coefficient shows a negative correlation between faculty research productivity and their number of teaching hours that means the higher the teaching hours of the faculty, the lesser the research productivity. This finding is consistent with the result of the study conducted by Jung in 2012 about faculty research productivity in Hong Kong. It showed that time devoted to teaching had a significant negative effect to research productivity. The result implies that the faculty needs sufficient time to conduct research. Aside from their teaching load, some faculty members have an administrative function. Hence, the faculty must learn to balance their time for teaching and research. The amount of time that a faculty member chooses to spend on research activities affects research productivity. It is observed that faculty with high teaching workload has low productivity in research. It appears that in this circumstance, the faculty members have no time to work on their projects or to publish results of work carried out.

Perceptions of Administrative Officials about Faculty Research Productivity Individual Characteristics

Aside from the personal and educational characteristics that predict faculty research productivity, this study also included other individual characteristics that impact research productivity such as motivation, content knowledge and commitment. The administrators believed that self-motivation drove some of the faculties to do research. They confirmed that some of the faculty members were intrinsically motivated by their passion and interests to explore new ideas, generate new knowledge and conduct research. According to Katz and Coleman (2001), intrinsic rewards can be associated with an individual's personal satisfaction arising from the completion of complex projects, for instance the achievement of a personal goal such as publishing a research paper, or developing feelings of increased autonomy and personal growth through successful completion of research work. Chen, Gupta and Hoshower (2006) studied the factors that motivated business faculty to conduct research. In their study, the researchers used expectancy theory to examine key factors that motivate business faculty to conduct research. The survey results showed that faculty members who assigned a higher importance rating to both the extrinsic and the intrinsic rewards of research exhibit higher research productivity. Study findings suggested that untenured faculty members were motivated by extrinsic rewards while tenured faculty members were motivated by intrinsic

rewards. Extrinsic factors that motivate faculty to do research are credits earned for evaluation and subject load reduction. Some faculty members are not motivated to conduct research because of lack of support and incentives, maximum teaching load and other curricular and extra-curricular activities. The respondents also declared that some faculty members need collaboration with mentors to hone their research skills, writing skills, computer skills and grant getting skills. According to Shin and Cummings, (2010) commitment to research is a common key variable in explaining research productivity. Academics whose interests are in research instead of teaching are more likely to be motivated in devoting themselves to research. In terms of content knowledge, the administrators stated that some faculty members have adequate basic and content knowledge in research but many of them are not confident to do research because they lack research skills and not updated with the research literature. The university needs to retool its faculty to upgrade their research skills through sending them in seminars, conferences, and paper presentation. Leadership characteristics. The administrators declared that department heads motivate the faculty members to do research, but they do not conduct research. The department heads are very supportive but sometimes they do not give constructive feedback. Some of the administrators agreed that faculty members' opinions are routinely solicited for important decisions about research while others disagree. Institutional characteristics. Almost all of the administrators emphasized their views on the research culture, communication, resources, time, rewards, and incentives when interviewed about institutional characteristics. Jung (2012) stated that demographics does not exist in isolation. Research productivity is affected by the social and organizational context in which they occur. Institutional policies and incentives directly and indirectly influence productivity. The administrators revealed that there must be an effective recruitment strategy in attracting the best talent in priority areas of the university specifically based on the needs of each college. Because recruitment is centered on teaching, research skill is not considered in hiring new faculty. There is a high expectation for faculty to be productive in research especially those holding professorial rank. The faculty members do not have adequate space conducive for writing research, and the internet connection is poor. Research infrastructure needs improvement. Faculty members do not have full access to adequate resources such as secretarial support, research assistants, computers, library materials, data analyses, and technical support to conduct their research projects. Only a few among the faculty were provided and given adequate support to attend research conferences. Some interested and self-motivated faculty members shoulder their expenses. In the study of Okiki (2013), low internet connectivity and financial constraint are also major inhibitors of research activities in Nigerian universities. Teodorescu (2000) emphasized that research productivity can be improved when institutions allocate funds for research facilities and financial support to faculty conducting research, employ appropriate reward system and provide effective communication and accessible resources. Most of the administrators believed that not all of the faculty members have confidence in the current direction the university is heading. Very few among them are productive in research. Neophyte faculty needs mentors to produce competitive research outputs. There were very few innovations that can be patented or copyrighted. Only a small number of the faculty can help accomplish the university's goals in research. The faculty focused on instruction and did not have time to undertake research projects because they are fully loaded in teaching. Some lack interest and expertise. A few of

the faculty have skills, expertise and experience to accomplish the research goals of the university. Although there are some faculty members in the academe who can mentor, mentoring in the department is not sustainable. Some administrators stressed that research critics need to be careful in giving feedback to the faculty to boost their confidence in conducting research. Gappa (2010) pointed out that faculty members must continue to work together to assess the institutional policies and identify specific ways to improve the institution's working environment as well as the each faculty member's maximum participation in research activities. Research productivity can be improved if the institution has positive group climate, assertive participative governance, flexibility and clear organizational goals that do not conflict with individual interests. The administrators declared that the university has communications system that makes faculty members well-informed in a timely fashion about major issues, important events, and upcoming concern about instruction and research. However, it is not sustainable. Research agenda should be kept visible in each college. The administrators also pointed out that research is a common language in the university. However, a well-developed network of colleagues who discuss research projects within their academic department or even outside university is not achieved because they have no time. Faculty members have minimal time for substantive, uninterrupted conversations with colleagues about research and education in their department, in the university and their discipline. In 2005, Smeby & Try asserted that collegiality is important in the scientific community as collegial dialog and exchange may be an impetus to research activity and involvement. Effective research units are characterized by openness and good collegial communication. While some disagreed for being unsystematic in giving rewards, most of the administrators agreed that the university has systematic mechanisms for nonmonetary rewards in research such as featuring in the department newsletter, "toasting" at faculty meetings, and giving certificates of recognition. Moreover, all of them asserted that the university has no clear policies about giving of incentives to outstanding research outputs. Despite the consistency of the findings of this research with that of Jung, (2012) and Salom, (2013) in terms of gender, rank and teaching load, this study has some limitations. Its findings involving the perceptions of administrative officials are time and locale specific. Furthermore, this study did not include the psychological characteristics such as aptitude and intelligence that are also important in studying research productivity. Thus, the generalizability of the specific predictors revealed in this research may be limited. Further studies to validate the predictors in a large group of population with the inclusion of other factors may be done.

CONCLUSIONS

The faculty members of Palawan State University-PCAT have low research publications in international scientific journals. Only a few of the faculty members have published research in local and national journals. Of the personal and educational characteristics, gender, rank and number of teaching hours predict faculty research productivity. Motivation, commitment, research culture, communication system, resources, time and incentives are perceived by the administrative officials as factors that affect faculty research productivity.

RECOMMENDATIONS

The faculty must increase their publications in international scientific refereed journals. The faculty must be required to publish research in national or international referred journals to ensure their maximum participation in research publication. Faculty load must include a time for research to give time to the faculty to conduct research. Research productivity should be one of the criteria to evaluate faculty members' performance for a rank promotion. The working climate should be more encouraging toward the development of self-motivated faculty members. The university must set up databases and a homepage on the internet that make it easy to access and find information. The university should organize research training, send faculty to research presentations; give remuneration to faculty who published research; reduce faculty load; strengthen mentoring on the research process; enhance faculty's self-motivation to conduct research and implement guidelines on promotion and incentives to quality research. Research skills must be one of the criteria in the selection and recruitment of new faculty. A follow-up research including the other variables which were not included in this research may be conducted.

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