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Research Productivity among Faculty Members of the University of Cebu, Philippines

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ABSTRACT

Research is the heart of every higher education institution (HEI). Universities are coming under enormous strength to boost the productivity of faculty research to meet the ASEAN integration. The accrediting agency assures that instructions and community extensions are research-based. This study assessed the research productivity of teachers at the University of Cebu, Philippines. Based on the gathered data, a University Research Portfolio was proposed to serve as a guide for the administrators to increase production of teachers in the context of a research project, presentation, and publications. The study used a descriptive correlational method with the aid of a researcher-made questionnaire. There were 171 college teachers who were used as respondents of the study. The accumulated data were analyzed, and interpreted using simple percentage, weighted mean, Chi-square test of independence and ANOVA. Results showed that most of the teachers have low research productivity and that they need training in research methods and statistics. It was concluded that college teachers had limited financial assistance and cash incentives that the University offers to them. The researchers strongly recommend that the proposed University Research Portfolio be used. However, further research on its effectiveness should be carried out to confirm the preliminary findings.

***Keywords* —** Research, faculty productivity, descriptive method, Philippines

INTRODUCTION

In the academic world, rapid change stimulated by globalization and Asian integration promoting the knowledge economy to contribute to the fund of knowledge. It is important to understand the orientations and actions of researchers who occupy a central position in the knowledge production process in the University (Koo & Pang, 2011). Academics hold central positions in the knowledge society through their traditional roles as producers of knowledge and educators of knowledge workers (Bentley, Coates, Dobson, Goedegebuure & Meek, 2015). Education is a primary criterion for measuring the development of a country. It is a key determinant of the wealth and prosperity of the nation (Salazar, Fabio, Bastida Jr, Gallardo & Bonghanoy, 2015).

In the Philippines, the University of Cebu is also emerging as a vital origin of modernization through research and development. One of the University of Cebu's mandates is to participate in the creation of knowledge, provide facilities for teaching and research, and extend assistance to the community.

The University voluntarily submitted to Philippine Association of Colleges and Universities - Commission on Higher Education (PACUCOA) for quality management and procedures. One of the areas of the accreditation processes is Research where the accrediting body meticulously evaluated the research productivity of the university. Also, the faculty research outputs provide a real justification to become successful facilitators of learning. The research activity develops academic knowledge and as well reinforces the skills for effective knowledge transfer (Okonedo & Popoola, 2012; Geuna & Muscio, 2009). The quality of research output among faculty members in any university setting depends primarily on research utilization (Okonedo & Popoola, 2012).

The study aimed to develop a University Research Portfolio for the University of Cebu. The researchers would like to investigate and optimize most if not all differing parameters used in the process of developing the University Research Portfolio. These parameters are essential elements that are deemed necessary in the formulation of the Portfolio.

FRAMEWORK

This study is anchored on Edward Deci and Richard Ryan's Self-Determination Theory (SDT) that recommend that man need to grow and gain fulfillment (Patrick, Knee, Canevello, & Lonsbary, 2007; Ryan & Deci, 2000).

This argument interests man on his motivation and personality (Vansteenkiste & Sheldon, 2006; Gagne & Deci, 2005).

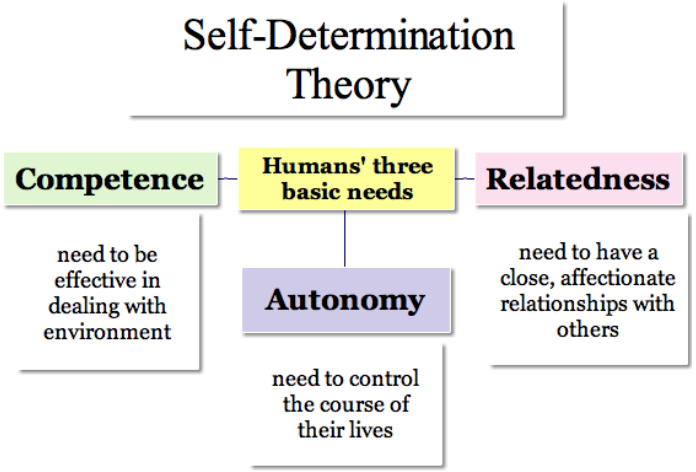

Figure 1. Self-Determination Theory

People's actions and daily activities involve other people and through this people explore the feeling of belongingness. SDT preserves support that man needs to be competent, autonomous, and related to others (Deci & Ryan, 2012; Standage, ., Gillison, Ntoumanis, & Treasure, 2012; Patterson & Joseph, 2007). Satisfaction of these basic needs facilitates people's autonomous motivation, whereas thwarting the needs promotes controlled motivation or being motivated (Deci & Ryan, 2012; Vansteenkiste, 2006; Reeve, Deci & Ryan, 2004; Baard, 2002). Satisfying these basic needs have been consistently shown to be associated with psychological health and proficient performance (Deci & Ryan, 2012; Broeck, Vansteenkiste, Witte, Soenens, & Lens, 2010; Parker & Ohly, 2008; Moller, Ryan & Deci, 2006).

The SDT supports the Albert Bandura's Self-Efficacy Theory which said that self-efficacy is a determinant of choice behavior because it influences the selection of behavioral settings. He contended that training programs could impact sources of information that resulted in self-efficacy (Etcuban, 2013). Furthermore, SDT has detailed the processes through which extrinsic motivation can become autonomous, and research suggests that intrinsic motivation (based on interest) and autonomous extrinsic motivation (Gagné & Deci, 2005).

The career ladder plans must be implemented to increase teacher competence (Parkay, Stanford & Gougeon, 2010). The motivational factors can be intrinsic which present tasks that are more enjoyable, exciting and psychologically rewarding (Grant, 2008; Suslu, 2006).

A system of faculty ranks serves as a hierarchical structure for faculty members to pass through during their careers (Adler & Harzing, 2009; Link et al., 2007; Baruch & Hall, 2004; Johnson & Birkeland, 2003). Each step represents a promotion that typically results in an upgrade of status and salary (Di Tella, Haisken-De New & MacCulloch, 2010; Pema & Mehay, 2010). In general, faculty performances on institutional criteria determine a faculty member's rank (Lackritz, 2004; Fairweather, 2002; Sun, 2002). Scholastic attainment, seniority, teaching, and service are some of the criteria. However, studies show that faculty research productivity is the primary criterion for promotion in universities (Bland, Center, Finstad, Risbey & Staples, 1996). Some faculty members conduct research in collaboration with their students who actively participate in the whole research process (Cabahug, Etcuban, Jala & Gimena, 2015).

Teachers show higher motivation for promotion display better research performance than their colleagues who show lower motivation for development (Dörnyei & Ushioda, 2013; Tien, 2000). The study of Mamiseishvili and Rosser (2011) find out that the increase in undergraduate teaching and service productivity was significantly and negatively related to faculty job satisfaction. Kezar (2005) mentioned that higher education institutions need to rethink their reward structures, value systems, and expectations placed on faculty work to keep productive faculty satisfied with their jobs and provide them with the workplace that is more appealing and attractive. Also, merit pay is known as a compensation system where employees are paid based on their performance (Podgursky & Springer, 2007; Suslu, 2006).

The teachers' pedagogical content knowledge, professional beliefs, work-related motivation, and self-regulation as aspects of their professional competence. The study revealed that teachers' general academic ability did not affect their instruction. Valued evidence, methods, and level of productivity expectations tend to define within disciplines.

The results of the study of Overall, Deane and Peterson (2011) indicate that adequate supervision involves helping researchers to voice and act on their ideas while simultaneously providing guidance on how to complete research tasks. The results of the study of Parker, Jimmieson and

The study of Porter and Toutkoushian (2006) showed that faculty research

productivity is positively related to status but negatively related to student quality at research universities, but that reputation and student quality have little impact on research productivity. The issues of faculty satisfaction, retention, and persistence will become increasingly important for university administrators and education policymakers (Sabharwal & Corley, 2009).

The study of Shaw and Vaughan (2008) investigates the work and influence the researchers' academic lives. The analysis shows that the number of publications increases steadily as rank faculty advances. The study of Glover, Prawitt, Summers and Wood (2012) explored possible explanations for the increase in publication productivity. The study revealed that the rise in the time to promotion, the entire published journal articles, and some co-authors could explain some, but not all of the observed increase in publication productivity. Dinauanao (2015) says that a library provides materials that contain information necessary in today's knowledge-based society.

The researchers gained more insights from these theorists and scholars from seven continents across disciplines in 15 years. These ideas included the factors associated with the faculty research productivity from methods, qualifications, publications, and motivations. For these reasons, the researchers motivated to conduct the study and propose a University Research Portfolio to help the university share its research culture.

OBJECTIVES OF THE STUDY

The study explored the research productivity among faculty members at the University of Cebu, Cebu City. The findings of the survey served as the basis for the proposed University Research Portfolio. It sought to answer the: 1) significant relationship between selected profiles of the respondents and obstacles to research productivity, difficulties encountered in research writing and publication, and factors of research productivity; and 2) significant degree of variance on the factors of research productivity when respondents are grouped according to college assignment, teaching status, academic rank, specialization, and years of teaching.

METHODOLOGY

The study used a descriptive correlational method of research. It involves the collection of data through the use of questionnaires, and interviews, which

were used as inputs in the development of the University Research Portfolio. The accumulated data were tested for their relationships and differences to determine whether variables affect each other.

The research respondents were the college faculty members assigned to each of the different colleges teaching the professional and general education subjects both full time and part time. The locale of this study was the main campus of the University of Cebu. The University of Cebu was founded on August 28, 1964.

Table 1. Distribution of Research Respondents

College	Population		Sample	
	f	%	*f*	%
Arts and Sciences	99	35.36	62	36.26
Business and Accountancy	35	12.50	20	11.70
Computer Studies	29	10.36	18	10.53
Criminal Justice	19	6.79	14	8.19
Customs Administration	7	2.50	4	2.34
Engineering	54	19.29	25	14.62
Hotel and Restaurant Management	17	6.07	16	9.36
Teacher Education	20	7.14	12	7.02
Total	280	100.00	171	100.00

This study utilized the researcher-made questionnaire. They administered the survey to the college faculty members of the different colleges of the University. The study consisted of five parts. The first part of the study was administered to gather data related to faculty profile includes their age, gender, civil status, teaching status, the academic rank, the specialization, and the number of years in teaching. The second part of the questionnaire was administered to collect data regarding the faculty member's obstacles to the research productivity that hinders them not to publish research articles. In this part, the faculty responded to the items by checking the items listed in the list of obstacles. It used the four-Likert scales: 4 points for Strongly Agree, 3 points for Agree, 2 points for Disagree, and 1 point for Strongly Disagree. The third part of the questionnaire was administered to gather data on the faculty related to their difficulties they encounter in research writing. The indicators were grouped according to Conceptual, Design and Planning, Empirical, Analytical, and Dissemination. In this part, the faculty responded to the items by checking using the four-Likert scales: 4 points for

Very Difficult, 3 points for Difficult, 2 points for Somehow Difficult, and 1 point for Not Difficult. The fourth part of the questionnaire was administered to gather data on the training needs of the faculty members that are essentials in preparing them for the conduct of research. In this part, the faculty responded to the training by checking the items desired to attend in the future to equip them with sufficient knowledge and skills in research. In this part, the faculty responded to the items by checking using the four-Likert scales: 4 points for Highly Needed, 3 points for Needed, 2 points for Somehow Needed, and 1 point for Not Needed. The fifth part of the questionnaire was administered to gather data that are useful in the conduct of research of faculty. This is categorized into four areas such as Instructional Formats, Teaching Methods, Ethics Materials, and Resources in Research.

To answer the items in the Instructional Formats, Teaching Methods, Ethics Materials, and Resources in Research, the faculty responded to the items by checking using the four-Likert scales: 4 points for Highly Needed, 3 points for Needed, 2 points for Somehow Needed, and 1 point for Not Needed.

The questionnaire underwent pilot testing by the faculty members of the University of Cebu Banilad Campus. This is to ensure that the surveys are valid before the administration of the study. The returned questionnaires were used for reliability testing using Cronbach alpha (0.92, highly reliable). The study was edited based on the results of the reliability test.

In conformity with research ethics protocol, the researchers obtained Informed Consent from the respondents stipulating their awareness to the purposes of the study. Also, their agreement to participate as those surveyed, their freedom not to continue if they felt uncomfortable with the questions, the welfare they will receive from the output of the study, and their right to information confidentiality.

After the problems had been identified, surveys of related researches had been conducted to determine the faculty profiles, obstacles in the conduct of investigation, difficulty in the research writing by the college faculty. Also, the researchers carefully collate ideas from the different researchers related to Research Capability. Finally, the data were collected, tabulated, analyzed, and statistically interpreted using Chi-square test of independence, and ANOVA in Tukey Method.

RESULTS AND DISCUSSION

The result showed that the ages of the faculty members have important relationships with obstacles to research productivity, difficulties in research writing, training needs for research, and conduct of research. This implies that whether the faculty is young or old, their research productivity is determined by their ages. It has been observed by the researchers that the older the faculty, the more they do not engage themselves in research. These findings are supported by Boyer (2014) who found that changes in the work of higher education institutions through the years, its movement from teaching to service and then research, are noted, as are conflicts resulting from schools attempting to achieve competing goals. The concern is raised regarding the emphasis on research and publication for scholarly advancement.

The gender of the faculty has significant relationships with difficulties in research writing, training needs for research, teaching methods, and resources in research. The data imply that the gender of the faculty correlates the problems they encounter in writing research. It means that the sexuality of the university matter especially in the teaching methods and resources they use for research. Mastropieri, Scruggs and Graetz (2003) say that peer tutoring incorporates comprehension strategy instruction and elaborative strategies that facilitate comprehension of content-area instruction.

Also, the civil statuses of the faculty significantly correlate with their difficulties in research writing, training needs for research, institutional formats, and teaching methods. The data imply that the marital status of the faculty hinders them to conduct research. Some of them cannot finish their research due to family obligations, or even financial issues.

The teaching status whether full-time or part-time faculty members significantly correlates with obstacles to research productivity, difficulties in research writing, institutional formats, and resources in research. It implies that teaching status of the faculty affects the research productivity due to assistance that the University can extend to them. It means that there is financial aid that part-time faculty members cannot avail. The allocation of research budget is only made available for full-time faculty members. Reeves, Herrington and Oliver (2005) say that researchers investigate primarily to seek the effectiveness of the medium, rather than the instructional strategies and tasks.

They explored the various incentives for doing research in higher education and examined the social relevance of the investigation. Widespread adoption of

this method to enhance the quality and usefulness of research in computers and other technologies in education.

Also, the Table shows that the academic rank and the number of years in the teaching of the faculty significantly correlate with all the variables in research productivity under investigation. The data mean that the school status affects the obstacles to research productivity, difficulties in research writing, training needs for research, and conduct of research of the faculty. It goes for the University of Cebu wherein two of the criteria for ranking are the research productivity and longevity of the faculty. The research outputs of the faculty comprise 25% of the entire classification procedures. Universities have acknowledged the trifocal functions – instructions, research, and community extension.

The study of Toutkoushian, Porter, Danielson and Hollis (2003) shows how schools evaluated according to faculty research productivity, the type of institution, and how they correlate with other measures of research resources and institutional quality.

Also, the Table shows that specialization (professional, general education), and the college assignments do not correlate all the variables in research productivity under investigation. It implies that whether you are a professional faculty member and is assigned to an individual college still, you have to have a research output. It means whether you are classified as professional or general education faculty members in the university, the faculty members must conduct research, present it in the forum, and publish the article in a peer-reviewed journal. Collier and Morgan (2008) examine the fit between university faculty members' expectations and students' understanding of those expectations. Parallel discussions among groups of teachers and groups of students highlight substantial differences regarding issues of time management and specific aspects of coursework.

Table 2. Test of variance on obstacles to research productivity

	Tukey's Pairwise Comparison				ANOVA		
Group	**Family Error Rate**	**Individual Error Rate**	**Critical Value**	**Pooled StDev**	**F**	**P**	**Result**
College Assignment	0.05	0.00252	4.34	0.3578	0.24	0.973	Not Significant
Teaching Status	0.05	0.05000	2.79	0.3072	54.53	0.000	Significant
Academic Rank	0.05	0.00252	4.34	0.2386	29.62	0.000	Significant
Specialization	0.05	0.05000	2.79	0.3529	0.32	0.570	Not Significant
Years of Teaching	0.05	0.00444	4.08	0.3290	5.96	0.000	Significant

The data imply that the obstacles to research productivity of the faculty significantly differ with the college they are assigned, their academic ranking, and the number of years in teaching. It means that the research productivity of the faculty matters. Based on factual data from the Research Office, there are Colleges in the University that have high research production as reflected in their presentation and journal publication.

Also, the data mean that the obstacles to research matter with the faculty ranking. Most of the faculty who have institutional research projects with the Research Office belonged to academic rank of Junior Instructors. This goes to the University of Cebu since faculty members can enjoy ranking if faculty are at least masters graduates as reflected in the policy for ranking.

Also, the data in Table 3 mean that the number of years in teaching has something to do with the research outputs of the faculty. The University of Cebu voluntarily submitted to PACU-COA for program accreditation to maintain its university status. Almost every year, the University undergoes accreditation where faculty members are involved. Most of the teachers that have productivity are those who stay longer in the university. The study of Tang and Chamberlain (2003) revealed that teachers of more than 20 years of service had the lowest research orientation. However, those with ranks lower than full professor showed the strongest belief that rewards influence teaching.

The difficulties in research writing of the faculty have a significant difference when it is compared to teaching status (p-value = 0.001), academic rank (p-value = 0.000), and years of teaching (p-value = 0.026) at the 0.05 level of significance. The data imply that the difficulties in research writing of the faculty significantly differ with the teaching status, their academic ranking, and the number of years in teaching. It means that teaching status (full-time or part-time) has something to do with their difficulties in research writing. Most of the full-time faculty members handle as much as 15 teaching loads. This resulted in non-research productivity due to overloads and teacher subjects' preparations. Etcuban (2013) says that the tasks of faculty members are not only limited to teaching. They are mandated to prepare daily or semestral examinations. Most of them feel that making test questions add burden to their work due to more teaching loads.

Also, the data imply that the higher academic rank the faculty achieves, the easier it is for them to do research. On the other hand, the unranked teachers encounter difficulties in research writing because some of them are not masters graduate. Earning master's degree correlates skills in research writing since the programs require graduate students to conduct research.

Also, the data imply that the longer the teaching experience of the faculty, the easier it is for them to write research. Research is a requirement for a faculty to handle college classes. Willinsky (2005) says that editing a journal and improving the record-keeping editorial processes to advance the researchers' scholarly work through innovations, from making journal policies more transparent to improving indexing.

The result also showed that training needs for research of the faculty have a significant difference when it is compared to academic rank (p-value = 0.016), and years of teaching (p-value = 0.000) at the 0.05 level of significance. The data imply that the training needs for research of the faculty significantly differ with the academic ranking and the number of years in teaching. It means that training requirements correlate their academic rank. Based on the data from the Research Office, the higher the educational level, the greater needs for training is required for the faculty. This is true since some teachers stay longer in the University.

Also, the data show that the number of years of teaching had a significant difference when compared to training needs for research of the faculty. It implies that there are seasoned teachers who do not like to conduct research and thus, require more training related to research and statistics. The techniques they learn in the conduct of investigation may be outdated. Therefore, there is a need for them to enhance their learning through relevant training, seminars, and fora.

The instructional formats have a significant difference when it is compared to academic rank (p-value = 0.000), and years of teaching (p-value = 0.007) at the 0.05 level of significance. The data imply that the learning technology related to the conduct of research significantly differ with the academic ranking of the faculty, and the number of years in teaching. Thus, the more seasoned the teachers are, the more they need to adapt the changing technologies that are essentials in the conduct of research. Surry and Land (2000) describe a framework that higher education administrators can use to increase the utilization of technology. The structure is designed to increase technology usage in higher education by increasing the motivation of individual faculty members to use technology. The administrators have come to view technology as a necessary tool for addressing many of the problems in higher education.

The teaching methods have a significant difference when it is compared to teaching status (p-value = 0.022), academic rank (p-value = 0.000), and years of teaching (p-value = 0.000) at the 0.05 level of significance.

The data imply that the methods preferred by the faculty in the conduct of seminars and training related to research significantly differ with their teaching

status, academic ranking, and the number of years in teaching. Feldman (1987) reveals that academic rank and age of faculty members, their ability and personality they spend on research activities.

Table 3. Test of Variance on Ethics Materials

	Tukey's Pairwise Comparison				ANOVA		
Group	**Family Error Rate**	**Individual Error Rate**	**Critical Value**	**Pooled StDev**	**F**	**P**	**Result**
Academic Rank	0.05	0.00252	4.34	0.5703	6.55	0.000	Significant

The data imply that the reading materials needed by the faculty to learn before the administration of the research significantly differ with their academic ranking. It means that the higher the faculty rank, the more knowledgeable the professors are in the use of ethics research materials.

The resources in research used by the faculty have a significant difference when it is compared to teaching status (p-value = 0.044), academic rank (p-value = 0.000), and some years in teaching (p-value = 0.004). The data imply that the learning materials needed by the faculty for the conduct of research significantly differ with their teaching status, academic ranking, and the number of years in teaching. The number of collections for research resources matters with how the teachers use these learning materials. Jacelon, Zucker, Staccarini and Henneman (2003) say that the investigation materials came together to help the faculty learn and provide discipline, critique, and collegiality for each other with the goal of building research and increase research productivity.

CONCLUSIONS

The study concluded that the faculty members have limited research productivity in spite of the financial assistance and cash incentives that the University offers to them. There is a minimal output in journal and book publications, presentations, and research projects.

The University through its Research Office has devised a study manual that serves as a guide for faculty in the conduct of the investigation. But, this is not an assurance that the research productivity of the faculty will increase. The University administrators have bigger roles in the implementation of investigation through reviews of proposals, budget allocation, evaluation and monitoring of the research endeavors of the faculty.

TRANSLATIONAL RESEARCH

The outcome of this study had been translated into a University Research Portfolio that focuses on the important criteria that support research across colleges and departments. This portfolio has the primary responsibility to establish priorities, identify initiatives, and allocate resources that support the University in the accreditation processes. Moreover, the collection will also provide an avenue for the faculty and staff researchers to improve their research skills through the planned research activities. The output of the study offers the solutions for the perennial problem that confronts every researcher not only at UC but also in the halls of various universities in the country.

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