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CHARTING LA CONSOLACION PHILIPPINS' PATHWAY TO RESEARCH: CAPABILITY AND ATTITUDES OF COLLEGE FACULTY AND STAFF

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Abstract

A University's competitive advantage is primarily determined by its capabilities, which constitute tacit knowledge it utilizes to the optimum. The trinity of functions of any higher education institution - instruction, research and community extension - is driven by its specific vision, mission, and goals. The study aimed at determining whether College faculty members' research capability and their attitude towards research are significant determinants of their research productivity - completion, presentation, publication, and citation. Respondents comprised of faculty and staff from the six different College departments of LCUP. A descriptive correlational research design was utilized, with data gathered using standardized survey instruments tested for validity, internal consistency and reliability. Findings revealed that collectively, research capability skills significantly impact faculty research productivity, with technical skills as the best predictor. Conversely, constructs of the attitude towards research variable do not account for statistically significant impact on faculty research productivity, whether collectively or individually. Training and support for departments or faculty with minimal scholarly production, the regularity of imposition of research policies to gain acceptability, faculty-to-faculty mentoring and adjustment of faculty compensation considering teaching and administrative works, are recommended to reflect the importance of research production, particularly in compliance with CHED and accreditation requirements.

Keywords: Research Capability, Research Productivity, Research Skills, Attitude Towards Research, Research Policies, Accreditation, Competitive Advantage.

Introduction

The global market of higher education considers research writing and publication in international, peer-reviewed refereed journals as valuable assets of an individual and the most common way to get affiliated (Mayernik, 2015).

According to Shauman (2003 in Fawzi and Al-Hattami, 2017), "In all academic disciplines, scholarly productivity is a primary marker of career success." Moreover, research productivity is known as one of the measures of: (1) the quality of the institution, (2) career success among faculty members, (3) institutional rankings, and (4) prestige (Volkwein and Sweitzer, 2006; Kim and Kim, 2015; Vemon, Balas, and Momani, 2017).

The annual research output of 11 East and Southeast Asian countries varies from 607 Peer-reviewed international publications (PRIPs) for the Philippines to 94,766 PRIPs for China. Japan, the second-most populous country in the region, occupied the second place producing 64,039 PRIPs (Hien, 2010).

Indonesia, Philippines, and Vietnam form the group with the lowest research intensity and have a long way to go to be at par with Thailand, China, and Malaysia, which in turn lag far behind the more advanced group of Singapore, Taiwan, Hong Kong, South Korea, and Japan.

The Philippine education system aims, among others, to develop the high-level professions that will provide leadership for the country, advance knowledge through research, and apply new knowledge. The pertinent provisions of Republic Act 7722, otherwise known as the Higher Education Act of 1994, created the Commission on Higher Education and as such, mandated it to ensure, among others, the advancement of learning and research in institutions of higher learning throughout the nation.

Research, as among the major functions of higher educational institutions (Lodhi, 2011; Nuqui and Cruz, 2012; Dacles, Valtoribio, del Rosario. Matias, and Saludarez, 2016; Clemeña and Acosta, 2016) has always been used as a method to assess the performance of faculty members especially in terms of promotion, salary increase and contract renewal. The phrase Publish or Perish initially coined by Coolidge in 1932 (cited in Rawat and Meena, 2014; McGrail, Richard & Jones, 2006), is now becoming a harsh reality; and pressure to publish has long been considered a fact of life within all academic disciplines (Lucas, 2006; Smith, as cited in Miller, Taylor and Bedeian, 2011), including management (Baruch and Hall, 2004).

The ultimatum is well-known to the academe: publish original research, or risk damaging your reputation - or even losing a professorship. The

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publish or perish credo is a prevailing pragmatism forced upon the academic group (Korte and Mercurio, 2017; Rond and Miller, 2005), and it still feels this way too many of today's academicians and researchers. It can be a stressful lifestyle for those who work within the publish-or-perish system.

Not only must academicians publish research to remain relevant, but doing so is a requirement - a key performance indicator - at many universities.

Publishing rates can be used to determine either an academician's value or faculty to be granted tenure. Besides, in ranking universities, one of the most important measures is the aggregate number of publications and citations of their faculty (Gonzalez-Brambila and Veloso, 2007).

Frequent publication is among the few powerful methods at a scholar's disposal to demonstrate academic talent to peers (Rawat and Meena, 2014). Successful research publication brings recognition to both scholars and their institutions. This, in turn, is an excellent opportunity to seek more funding or grants for the institution and ensure the researchers' progress in their respective fields. Universities and other academic institutions frequently use the number of publications as a measure of an individual's proficiency and competency. Administrators are increasingly using this as among their recruitment and selection criteria. Scholars, who do not frequently publish or who focus on activities that do not result in publications "may find themselves out of contentions for many teaching positions. It is due to these reasons that there is an immense pressure to publish" (Rawat and Meena, 2014).

Universities in the Philippines, La Consolacion University Philippines (LCUP) included, have been gearing their efforts and resources towards the attainment of their trifocal functions - instruction, extension, and research, so much so that the work of the faculty in higher education institutions (HEIs) has traditionally been likewise trifocal; consisting of teaching, research and community service, and extension. Therefore, university faculty members are required to become not only teachers but researchers and service-oriented professionals as well (Bergen, 2003; Salmingo, 2011). This traditional trinity of functions is expected to be driven by the specific vision, mission, and goals of the college or university. The strategic directions of HEIs influence the level of concentration on each task to be given by faculty members.

Statement of The Problem

Presently, there is a great demand to improve the research landscape within the four corners of LCUP as it is imperative for accreditation and for the retention of its autonomous status as a University. The objective therefore of the research survey is to provide an inventory of research capability - referring to a "process of individual and institutional development which leads to higher level of skills and greater ability to perform useful research" (Pickstone, Nancarrow, Cooke, Vernon, Mountain, Boyce, and Campbell, 2008) - among LCUP's college faculty members and staff, their attitudes towards research, and how these impact their research productivity.

Thereon, the data can be used to assist the University in the formulation of strategies to strengthen its research function.

Specifically, the study sought to find answers to the following:

1. What is the faculty members' research capability in terms of:
   a. Conceptual skills
   b. Computational skills, and
   c. Technical skills?
2. How may the faculty members' attitudes towards research be described in terms of:
   a. Usefulness to profession
   b. Research anxiety, and
   c. Positive research disposition.
3. What is the faculty members' research productivity in terms of average number of researches for the last three years?
4. Which of the research capability skills and attitudes singly or in combination impact research productivity?

Hypothesis of The Study

The following null hypothesis was tested in the study:

$H_0 1$: Faculty and staff research capability skills and attitudes towards research do not significantly impact their research productivity.

Respondents, Scope and Delimitation

The study, which was conducted from October 2018 to January 2019, comprised of respondents from the six different Colleges of LCUP namely: Business, Entrepreneurship and Accountancy (CBEA), Arts, Sciences and Education (CASE), Allied Medical Sciences (CAMS), International Tourism and Hospitality Management (CITHM), Information Technology and Engineering (CITE), and Medicine (COM). The study delimited itself to soliciting data from 51 full-time faculty and staff comprising of six college deans, six office staff, and 39 professors from the six different colleges. Only full-time faculty and staff were made to participate since the research requirement for full-

time faculty is more stringent than that of part-timers, and they have less formal contact with other faculty. Further, part-timers are disconnected from the "mission and spirit of the institution." (Gappa and Leslie, in Weiss and Pankin, 2011). The university likewise does not commit part-timers and part-timers are "less apt to have a long-term commitment to the university." (Wilson, in Weiss and Pankin, 2011).

Frameworks of The Study

The study anchored on the Knowledge-based view theory which advocates that the "knowledge possessed and practiced by firm members constitutes a firm's primary resource" (Shalem, Shawtari, Shamsudin, Hussain, and Hizam, 2016).

Its capabilities largely determine a university's competitive advantage (Boşcor, 2015; Mainardes, Ferreira and Tontini, 2011; Haan, 2015; Noruzi & Vargas- Hernández, 2010; Yang, Lin, & Li, 2010). In the context of universities, such capabilities constitute tacit knowledge (Audretsch, Hülsbeck, & Lehmann, 2012; Liu & Shi, 2008; Sveiby, 2001). Thus, this explains the importance for universities to evaluate their capabilities for optimal use (Liu & Shi, 2008).

Universities focus on developing their research capabilities, and abilities, albeit these are often not included in determining and evaluating their competitive capabilities and knowledge creation concerns (Noruzi and Vargas-Hernández, 2010). Noruzi and Vargas-Hernández (2010) added that there is a need to consider the extent to which scientific research capability in universities contributes sufficiently to its competitive capacity.

Knowledge resources are particularly relevant to ensure the sustainability of an institution's competitive advantages, as these resources are inimitable so that they serve as a foundation for sustainable differentiation (Wiklund and Shepherd, 2003).

Figure 1 presents the conceptual paradigm of the study:

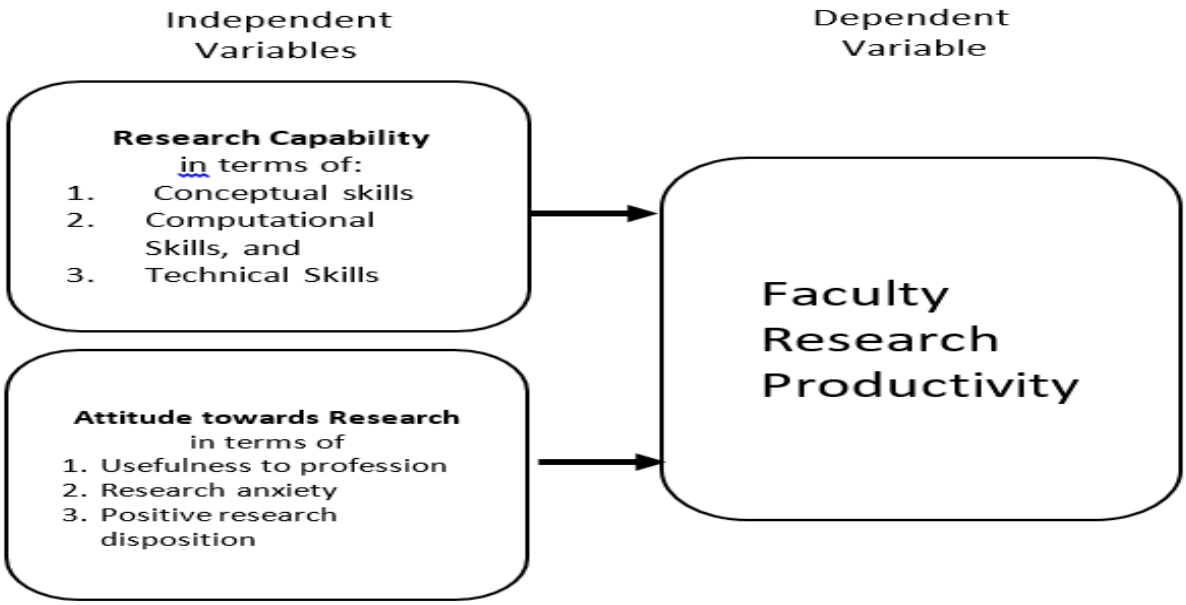

Figure 1: Conceptual Paradigm of The Study

Methodology of The Study

For this study, the descriptive correlational research design was used to investigate and to establish the impact of faculty research capability and attitudes towards research on their research productivity. Through the survey method, the researcher was able to interpret the technical meaning of the findings and hypothesis development for further studies.

The study made use of two standardized questionnaires on research capability and attitudes towards research from the studies of dela Cruz (2017) and Papanastasiou (2005) proven to be valid, internally consistent, and reliable, with reliability indices measured at Cronbach's alpha = 0.787 for research skills and 0.947 for research attitudes.

The study applied a five-point Likert scales in describing the respondents' research capability skills and their attitudes towards research as follows: For the research productivity data, reports were taken from the Office of the Vice President

for Academic Affairs as supplied to them by the Research, Extension and Linkages Office. The present study considered data for the last three years, from 2015 to 2018 and computed average productivity as well.

Mean results were extracted, and data were submitted to correlation and multiple regression analyses using SPSS (Statistical Package for Social Sciences).

Five-point Likert scales were applied in describing the respondents' research capability skills and their attitudes towards research as follows:

Scale	Range	Descriptive Rating	Verbal interpretation	
			Research Skills	Research Attitudes
5	4.50 – 5.00	Strongly Agree	The respondent possesses very superior skills necessary to conduct research. Highly Capable/Very competent	Overall, the respondent has a very positive attitude towards research. No research anxiety
4	3.50 – 4.49	Agree	The respondent possesses superior skills necessary to conduct research. Very Capable/Competent	Overall, the respondent has a positive attitude towards research. Very little research anxiety.
3	2.50 – 3.49	Neutral	The respondent possesses average skills necessary to conduct research. Capable/Competent extent only	Overall, the respondent has an ambivalent attitude towards research. Moderate research anxiety.
2	1.50 – 2.49	Disagree	The respondent possesses somewhat inferior skills necessary to conduct research. Quite incapable/incompetent	Overall, the respondent has a negative attitude towards research. High research anxiety.
1	1.00 – 1.49	Strongly Disagree	The respondent possesses inferior skills necessary to conduct research. Incapable; Incompetent	The respondent has a very negative attitude towards research. Very high research anxiety.

For the research productivity data, reports were taken from the Office of the Vice President for Academic Affairs as supplied to them by the Research, Extension and Linkages Office. Data for the last three years from 2015 to 2018 were considered and average productivity was computed.

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Results and Discussions

Research Capability

Research capability is described as the research skills that an individual possesses such as conceptual skills, computational skills, and technical skills. It refers to the skills of being able to provide in-depth information, detailed analysis, and useful advice on a given topic after extensively researching on that topic. It includes formulating the problem statement, referring to good sources, and explaining findings observations in the form of a report (Ulla et al., 2017; Alhija and Majdob, 2017; Hampton et al., 2017).

Hence, individuals are not only equipped with these skills to be able to write better research papers but also taught all about the problem-solving skills required to tackle issues in the workplace.

Table 1 shows the research capabilities of the six different college departments of LCUP.

Overall, the college department faculty is very capable/competent, as evidenced by a grand weighted mean score of 3.82, which suggests that the respondents possess superior skills necessary to conduct research. Of the six departments, CITE was found to be the most capable/competent ($\bar{x}$=4.19) followed by CBEA ($\bar{x}$=4.09), then by CAMS ($\bar{x}$=4.02). COM followed suit with a mean equal to 3.75 and succeeded by CASE ($\bar{x}$=3.62) and whose faculty members likewise possess superior research skills, and lastly, by CITHM which obtained a mean of 3.24 which conveys that in general, their faculty possess average skills necessary to conduct research.

When it comes to individual research skills, CAMS top-notched on conceptual skills, obtaining a mean score of 4.37, while CITE and CBEA placed second, each with mean ratings of 4.28. Accordingly, CASE and COM earned mean scores of 3.90 and 3.82, while CITHM got a mean result of 3.30. It could be further inferred that five out of six college departments have faculty members who possess superior conceptual research skills and are

likewise believed to be very capable or competent.

In terms of computational skills, CBEA faculty have superior skills and therefore, very capable/competent ($\bar{x}$=3.91). Other departments obtained mean results in order of rank as follows: CAMS ($\bar{x}$=3.77, superior, very capable), CITE ($\bar{x}$=3.73, superior, very capable), CASE ($\bar{x}$=3.57, superior, very capable), COM ($\bar{x}$=3.50, superior, very capable), and CITHM ($\bar{x}$=2.94, average, capable).

When it comes to technical skills, it was CITE faculty members who were found to have very superior skills with $\bar{x}$=4.57, which indicates that said department has highly capable faculty members in terms of technical research skills.

Following closely are CBEA faculty members who were found to be very technically capable and possessing superior skills at $\bar{x}$=4.31. CAMS and COM both obtained identical technical skills mean results of 3.91, interpreted as very capable with superior technical skills while CASE and CITHM were found to be both possessing average technical research skills, which is inferred as capable or competent with mean scores of 3.38 and 3.49, respectively.

Table 1: Research Capability of College Faculty Members and Staff

Department	Conceptual Skills		Computational Skills		Technical Skills		Weighted Mean	
CBEA	4.28	Very capable	3.91	Very capable	4.31	Very capable	4.17	Very capable
CASE	3.90	Very capable	3.57	Very capable	3.38	Capable	3.62	Very capable
CITE	4.28	Very capable	3.73	Very capable	4.57	Highly capable	4.19	Very capable
CAMS	4.37	Very capable	3.77	Very capable	3.91	Very capable	4.02	Very capable
CITHM	3.30	Capable	2.94	Capable	3.49	Capable	3.24	Capable
COM	3.82	Very capable	3.50	Very capable	3.91	Very capable	3.75	Very capable
Grand Mean	**3.95**	**Very capable**	**3.57**	**Very capable**	**3.93**	**Very capable**	**3.82**	**Very capable**

Research Attitudes

It could be gleaned from the results presented in table 2 that overall, professors from the six different college departments have positive attitudes towards research. CBEA faculty members have the most positive attitude and the least anxiety towards research. This is evidenced by a resulting mean score of 4.17, while COM was found to have the least positive attitude towards research as revealed by a mean score of 3.44. All other departments generally have positive research attitudes.

CITE, and CAMS are very positive that research is useful to their profession and its advancement. Conversely, CBEA has the most positive research disposition ($\bar{x}$=4.31) from among the six departments while CITHM and COM both obtained the lowest research disposition scores at $\bar{x}$=3.20. It is noteworthy to mention that of the six college departments, CITE faculty members have the highest research anxiety ($\bar{x}$=2.43), while CASE ($\bar{x}$=2.88) and CAMS ($\bar{x}$=3.17) are moderately anxious about doing research. CBEA, CITHM, and COM, on the other hand, have very little research anxiety with mean scores of 3.91, 3.68, and 3.32, respectively.

Table 2: Research Attitudes of College Faculty Members and Staff

Department	Usefulness to profession		Research anxiety		Positive research disposition		Weighted Mean	
CBEA	4.28	Positive	3.91	Very little research anxiety	4.31	Positive	4.17	Positive
CASE	3.98	Positive	2.88	Moderate research anxiety	3.63	Positive	3.59	Positive
CITE	4.53	Very Positive	2.43	High research anxiety	3.97	Positive	3.64	Positive
CAMS	4.61	Very Positive	3.17	Moderate research anxiety	3.96	Positive	3.91	Positive
CITHM	4.05	Positive	3.68	Very little research anxiety	3.20	Positive	3.64	Positive
COM	3.80	Positive	3.32	Very little research anxiety	3.20	Positive	3.44	Positive
Grand Mean	**4.34**	**Positive**	**3.21**	**Ambivalent, Moderate Research Anxiety**	**3.81**	**Positive**	**3.79**	**Positive**

Research Productivity

Research productivity and involvement include research completion, research presentations, research publications, and research citations. For the last three years, from 2016 to 2018, it could be said from the data presented in Table 3, that CASE has the most significant number of faculty who are research productive. This is proven by a total of 81 faculty researches representing 51.9% of the total, with an average of 27 faculties involved in research per year. CBEA has the second biggest faculty research productivity and involvement with a total of 50 faculty researches or an average of 17 per year or 32.1% of the total research productivity for the last three years.

Eleven faculty researches were produced by CITE representing 7.0% of the total, averaging four faculty researches per year for three years. CAMS. CITHM and COM have 4 to 5 faculty members actively involved in research, with an average of one to two researches produced per year in three years, and representing 2.6%, 3.2%, and 3.2% of the total.

Table 3: Research Productivity of College Faculty Members and Staff

Department	2016	2017	2018	Average/year	Total	%
CBEA	16	15	19	17	50	32.1%
CASE	16	36	29	27	81	51.9%
CITE	2	8	1	4	11	7.0%
CAMS	0	0	4	1	4	2.6%
CITHM	3	1	1	2	5	3.2%
COM	0	4	1	2	5	3.2%
Total	**37**	**64**	**55**	**53**	**156**	**100%**

Impact of Research Capability on Research Productivity

To determine the effect of the independent variables, namely research capability and attitude towards research on the dependent variable, which is research productivity, correlation, and regression analyses, were conducted. Table 4 summarizes the statistics and analyses results.

The B coefficients of each of the research capability indicators - conceptual skills, computational skills, and technical skills - which are non-zero, are positively correlated with the criterion, research productivity, in varying degrees which indicates that the higher the predictor scores are, the higher the criterion scores. On the contrary, the lower the predictor scores are the lower the criterion score.

The B coefficients present the amount of change in research productivity that is associated with a change in one unit of the aforementioned variables under Research capability. The magnitude of their values (B coefficients) is relative to the means and standard deviations of the independent and dependent variables in the equation.

Results of the regression run revealed that Technical Skills registered the highest B coefficient of 6.478. This was seconded by Computational Skills with a recorded B coefficient of 3.712, then by Conceptual Skills with a resulting B coefficient of 2.405.

Table 4: Regression Results on The Impact of Research Skills on Research Productivity

Variables	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	14.427	10.903		1.323	.193
Conceptual Skills	2.405	3.517	.125	.684	.498
Computational Skills	3.712	2.908	.216	1.277	.208
Technical Skills	6.478	2.014	.518	3.217	.002
R-squared = .203 F-value = 3.730 p-value = .018 alpha = 0.05					

The r-squared value implies that 20.3% of the variation in Research Productivity is explained or accounted for by changes in Research Capability. The beta value, measured in units of standard deviation, gauges how strongly each predictor variable under Research Capability influences the

criterion (dependent) variable, which is Research Productivity. Therefore, since the beta value of the Technical Skills construct at .518 is the highest of the three (3) variables under Research Capability, it could be culled that Technical Skills has the greatest impact on Research Productivity. This is followed by Computational Skills with a Beta value of .216, then by Conceptual Skills with a Beta value equivalent to .125.

The overall ANOVA result is significant at α = 0.05 (df1 = 3; df2 =44; Fcrit= 3.730), which means that the predictor variables (conceptual skills, computational skills, and technical skills) collectively account for a statistically significant proportion of the variance in the criterion variable, Research Productivity. Furthermore, a closer look at the coefficients reveals that Technical Skills recorded a B coefficient with an associated probability of .002. It could be culled from these results that the associated probability value is less than the significance level set at alpha .05. It is for this reason that one could infer that the hypothesis that Faculty and staff research capability skills do not significantly impact their research productivity is rejected. It could be further gleaned that the statistically significant results are not attributed to mere chance alone. On the other hand, p values likewise convey whether a variable has statistically significant predictive capability in the presence of the other variables Individually, the regression run shows that only Technical Skills have statistically significant predictive capability on Research Productivity as demonstrated by its associated probability value recorded at .002 which is less than the significance level set at α = 0.05. The result could not be attributed to mere chance alone. Other research capability skills such as Computational and Conceptual skills likewise affect Research Productivity of College Faculty, but not to a significant extent.

Impact of Attitude towards Research on Research Productivity

Similarly, data in Table 5 present the results of the correlation and regression analyses employed to determine the impact of Research Attitude on Research Productivity.

Attitude towards research indicators show a correlation with the criterion, Research Productivity in varying degrees. The non-zero coefficients of Usefulness to Profession and Research Anxiety are negatively correlated with the criterion, Research Productivity, indicating that there is an inverse relationship between variables - that the higher the predictor scores are, the lower the criterion scores and vice-versa. Conversely, the lower the predictor scores are, the higher the criterion score. The Research Disposition construct of Attitude towards research was found to be positively correlated with Research Productivity.

Results of the regression run revealed that Usefulness to Profession registered the highest B coefficient of 4.392 and the highest Beta coefficient of -362, which indicates that the said variable has the greatest influence on Research Productivity. The r-squared value implies that only 1.4% of the variation in Research Productivity is explained or accounted for by changes in Attitude towards Research.

The overall ANOVA result was found to be non-significant at α = 0.05 (df1 = 3; df2 =44; Fcrit= .785), which could be inferred that collectively, predictor variables under the Attitude towards Research, do not account for a statistically significant proportion of the variance in the criterion variable, Research Productivity.

Moreover, a closer look at the associated probability values of individual predictors reveals that they are higher than the significance level set at alpha .05. It is for this reason that one could infer that the hypothesis that Faculty and staff attitude towards research do not significantly impact their research productivity is accepted.

Therefore, collectively and individually, constructs under the Attitude variable affect Research productivity but not to a significant extent.

Table 5: Regression Results on The Impact of Research Attitude on Research Productivity

Variables	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	16.915	8.217		2.058	.045
Usefulness to profession	-4.392	3.024	-.362	-1.453	.153
Research anxiety	-.122	1.570	-.012	-.078	.938
Positive research disposition	3.834	2.880	.324	1.331	.190
R-squared = -.014 F-value =.785 p-value = .509 alpha = 0.05					

Conclusion

Based on the previous results, it could be concluded that:

- Overall, the college department faculty are very capable/competent and possess superior skills necessary to conduct research, with CAMS as the most capable in terms of conceptual skills, CITE as the most capable in terms of technical skills and CBEA as the most capable in terms of computational skills.
- Generally, all departments have a positive attitude towards research, with CBEA having the most positive attitude and the least anxious towards conducting research. COM was found to have the least positive attitude towards research while CITE was found to have a higher level of research anxiety than the rest.
- On the whole, College departments have produced an average of 53 researches per year or a total of 156 researches from 2015-2018, with CASE producing the highest number of faculty researches.
- Collectively, Research Capability Skills significantly impact Research Productivity with Technical Skills as a significant predictor of Research Productivity. On the other hand, Attitude towards Research (and its constructs), collectively and individually, do not significantly impact Research productivity.

Recommendations

Based on the conclusions derived from the study, the following recommendations are hereby presented:

- Training and personal support may be extended to departments with minimal scholarly production experience to become proficient in all research skills – conceptual, computational, and technical.
- It may take years to establish a research culture so that policies on research must be imposed regularly over time to gain acceptability. Once policies are embraced or accepted, a gamut of dean-led research activities must be identified and carried out with possible faculty-to-faculty mentoring by more research-experienced faculty members.
- Faculty compensation may be adjusted together with teaching and administrative demands to reflect how vital research production is, in compliance with accreditation and CHED requirements.

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