University Research Assessment, Performance and Its Impact

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Abstract
The present study goes back to the notion of what measures the research productivity of an Institution, whether the Institution is producing sufficient number of quality research papers as mandated by CHED-NHERA. Drawing out also on the research outputs of the University for the past years, this study was conducted. This paper aimed to assess the status of research in the Institution in terms of trending: year, college and academic ranks; specific criteria-discipline worked for, nature of study, subject, statistical tools; research performance and impact. A conceptual framework based on what entails a good research paper, what determines a high research performance, and its impact to decision-making and production of knowledge was adapted. Seventy one faculty researchers, out of 86, from the six colleges responded to the survey questionnaire. Sixty research papers were documented and content analyzed. Results of the study show that the University has only 86 faculty researchers, 29 are instructor 1 and 16 Instructor 3. Majority of researches worked for the disciplines social science (19), education (17), and natural science (8). Descriptive survey research was the most used method, with 34 researches using the students as respondents of the study. Inferential statistics outnumbered those who used descriptive statistics. Research performance rankings show organization as the strength of the researchers (82%), trailing behind are content (77%) and methodology (76%). These ratings were rated good. Of the 60 completed researches, 15 were published in international refereed journals. These completed papers were done in accordance with the mandate of CHED-NHERA. Results of the study also found out that the faculty members agreed, with $\bar{x} = 3.95$, on the impact of research assessment of performance on the academic decision-making of the University and on the production of knowledge.

Key Words: University, Research Assessment, Research Performance, and Research Impact

INTRODUCTION

Higher education and research are dominantly significant for human and society’s development. They expand people’s productivity and capability, as well as national capacity and competitiveness. Awareness of the Higher Education Institutions’ research productivity may advocate collaborative and overpowering contribution towards advancement that includes institutional development approaches. It is a common realization that Higher Education Institutions in developed countries have firm and embedded tradition of research. They have responded in varied ways to the call for a stronger research orientation among the universities. In 2003, Shanghai Jiao Tong University in China published the first global Academic Ranking of the World, wherein Universities were rank according to indicators of academic or research performance, frequently cited researches and articles published in leading scientific journals (Hazelkorn, 2009). Recognizing research as an important function, aside from teaching and community works, university faculty members have evidently and consistently
demonstrated research productivity jointly with other factors that contribute towards its growth and evolution. Accordingly, Dundar and Lewis cited by Salazar & Almonte (2007) found that individual attributes, institutional and departmental attributes, as well as departmental culture and working conditions play significant roles in research productivity.

In many countries, concerns have been expressed about the status of educational research. The findings in the study of Tareef (2009) that was conducted in UK point to low research capacity, tension between theory and practice, discontinuity, and low impact. Further, he stated that lack of motivation for research, lack of a strategic plan, poor economic condition of research, and a decrease of funding are factors in the decline of Higher Educations’ research capacity. Meanwhile the study of Sanyal & Varghese (2006) showed that universities in the developing world have retained strong teaching function but their research functions have been found to be weak. Correspondingly, inadequacy of qualified research assistants, preoccupation of faculty members in administrative duties and teaching assignments contribute to the low quality of research outputs produced by researchers as mentioned by Al-Furaih and Al-Shayji (2005). Likewise, in the Philippines, despite the CHED initiatives, the current state of higher education research leaves much to be desired also in terms of quantity, quality, thrust, and contribution to national development (Salazar-Clemeña, 2006). She cited as observed in the study of Bernardo (2003) regarding the typology of HEIs in the Philippines that only 2 out of 223 HEIs met the criteria for doctoral/research university categories. This implies that majority of the HEIs are teaching institutions with less focus on research.

Because of this visible reality, the researchers decided to conduct the study through a review and assessment of the completed researches in their locale, Rizal Technological University (RTU), in terms of performance and its impact. This study adapted the principle utilized by Meho and Sonnenwald (2000) in evaluating research performance. They said that there are two fundamental purposes for evaluating faculty research performance: First is to identify the areas for improvement in the quality of their research and, second, to help the administration in funding, hiring, making promotion and tenure decision. Essentially, all research performance evaluation systems done in this study center on the idea of quality that may include, according to Silverman cited by Will (2011), conceptualization and theoretical basis of the work; analytical framework and hypotheses; research design; results and discussions and conclusions. Other factors that were considered critical in appraisal evaluation include the suitability of the statistical methods used, their subsequent interpretation, and the relevance of the research to one’s own practice (Young & Solomon, 2009). Moreover, Barker & Pistrang (2005) distinguished the identifying characteristics of the two types of research according to the methods being used: the quantitative and qualitative research methods that were also considered in this paper.

The decision to conduct the study can be traced back on holdings of research fora and conferences, where faculty research performance was measured. The Panel of evaluators did comparable judging/rankings procedures. The Steering Group for the Pilot Study Research Rating (German Council of Science and Humanities, 2008), characterized by the “informed peer review” principle in its research rating procedure, was made as foundation of this research work. Most noteworthy in this study is the assessment of research performance in terms of the academic decision-making of the University. Hazelkorn (2009) cited that performance rankings influence priorities such as curriculum, rebalancing teaching/research, resource allocations, undergraduate and postgraduate activity, and better performers among others. In addition, Clemeña and Acosta (2006) identified the criteria or indicators of a supportive research environment that affect research outcome or productivity. These comprise institutional research policies and agenda; departmental culture and working conditions; budget for research Infrastructure; collaboration and access to research professionals and other institutions; policies and guidelines on research benefits and incentives; and publications. With this background, the researchers came up with the main purpose of the study.
Objectives
This study aimed to assess the research status of the completed papers in terms of yearly production, college, and academic rank; characteristics according to discipline worked for, nature of study, subject of the study, and statistical tools. It attempted also to measure the performance of the faculty members based from their ratings in the peer review during the fora, publications, and compliance to CHED-NHERA. The study also made an evaluation on the impact of the research assessment.

Significance of the Study
Research is an important resource for the development of educational system that can be an effective tool only if it makes an impact on the decision-makers and practitioners of the institutions. The results of the study may be useful to the decision-makers, especially for the administrators who are responsible for efficient and effective implementers of academic programs. In addition, this research may provide a ready reference for research directions to the: institution, faculty, researchers, research units and non-governmental research agencies. As an initial study, this may bring together research information needed by the faculty researches of the institution in identifying certain areas of concern, both content and methodological, that they may be guided in the conduct future researches.

Overall, the study on the review of the researches is expected to emphasize research efforts thereby facilitating the exchange of research information and in the long run bring about rationalization of research activities particularly in the research units where much of the research activities take place. To the CHED, this research works serve as a guide for them to help raise the levels of research efforts to in order sustain development programs throughout the country and to translate the policies, strategies, procedures, guidelines and priorities into concrete research, and encourage the formulation of research agenda at the institutional level. Finally, to the future researchers, the findings of the study can help enhance instruction through original contributions in specialized disciplines thereby encouraging themselves to become creative, innovative and productive individuals particularly in doing research.

Scope and Delimitation of the Study
The study aims to assess Rizal Technological University faculty researches that were presented in the fora covering the period 2010 to 2013. The assessment was based on some specific characteristics utilized for evaluating the quality of the research paper. Specifically, the study focused on the determination of the research performance ratings/rankings, based on three specific criteria: content, methodology, and organization, by the panel of evaluators. The criterion “Oral presentation” was excluded in the rating in order to eliminate subjectivity in the assessment. Moreover, the degree of compliance to University Agenda and CHED-NHERA, publication, and impact assessment on academic decision-making and behavior of the University were also determined.

METHODOLOGY

Research Method
To gain insights into how best to assess the completed researches of Rizal Technological University, the researchers employed both qualitative and quantitative research methods. First, documentary survey and content analysis were applied to determine the specific characteristics and research performance of the faculty researchers. Then, descriptive survey method was utilized to assess the impact of research assessment and performance rankings.

Participants of the Study
The samples of the study, 71 (83%) out of 86 faculty researchers that was computed using Sloven’s formula, from the five colleges: CAS, CED, CED-LHS, CEIT, CBET, GS, AND IPE, were used as respondents of the study. All respondents came from both Boni and Pasig Campus of Rizal
Technological University. In addition, the subject of the study also includes copies of completed researches borrowed from the Research & Development Center.

**Instruments**

There were two types of data collection instruments used in the study: a modified database from the Commission on Higher Education for the research assessment of the characteristics of the completed researches and the existing institutional data or documents from the Research and Development office concerning research performance of the University. The rating system used in the assessment research performance is composed of the following criteria: Contents (35%), Methodology (40%), and Organization (10%).

**Data Analysis**

In the analysis of the data gathered, the following statistical tools were used (McClave, J. and Sinsich, T., 2006): Frequency and percentage were the statistical tools used to determine the status of research by trend, assessment by criteria, and performance rating; Weighted mean was used to answer the impact of the research assessment; and the study made use of Two-Way Anova to determine the significant difference on the research performance of the researchers by criteria and year.

**RESULTS AND DISCUSSION**

Universities all over the world have begun to recognize research as an essential part of their responsibilities, which is evidently observed on their efforts of fervently pushing for a stronger research consciousness among their faculty members. Showing a continuous progressive trend of research productivity, Rizal Technological University adheres to the said standard. Evidences confirm the University’s continuous and untiring support to the various research projects/activities such as: holding of fora, conferences, and capability buildings among others. These are contributing factors towards the realization of the University’s goal of becoming a research University. Results of the study imply that RTU responds now to the call of developing research consciousness among higher learning institutions. Clemeña and Acosta (2007) emphasized in their study the role of the faculty members as primary producers of research that would contribute towards national development. It must be noted, however, that each faculty member manifests varied research capabilities, a variety that can be rationalized by differences in faculty profile and University profile as well. Hence, the reason for the diversity of the research outputs produced by the institution.

Research, obviously, is considered as one of the main functions of Higher Education aside from teaching. Thus, Higher Education Research must be anchored on some guiding principles to sustain teaching and research empowerment. Consistent with the CHED-NHERA requirements, researches done by the RTU faculty members were based on the Higher Education Cluster of Disciplines: Science and Mathematics; Education and Teacher Training; Information and Communication Technology; Health and Health Profession; Engineering; Agriculture; Humanities, Social Science, and Communication; and Natural Disaster Mitigation (NHERA-2 2018). This indicates that RTU pursues CHED’s aspirations of producing research-learned institutions. Equally important in the conduct of research is the use of suitable methods. A fundamental criterion adapted in this research work is the appropriate selection of the research method for the research questions under investigation. Results of the study point to the idea that faculty members are familiar with the characteristics of the research methods most appropriate for their study. As mentioned by Barker & Pistrang (2005), the methodology parts include the research design, how the strategy is put into practice, the nature and the number of participants, the way the data are collected, and how the data are analyzed.

These identified characteristics of research serve as guide in the research assessment of the study. Results manifest the excessive use of quantitative descriptive research methods, which could be attributed to the great exposure of the faculty members to this methodology. Another reason could be the need to strengthen the research capability of researchers in conducting study using experimental
designs. Part of the main feature of the research methods is the choice of the participants; where in this present study findings show that majority of the researches have students as the subjects of their study. This connotes that RTU is largely focusing in education whose main recipients of its services are the students. However, considering the linkages, engagements, and tie-ups of the University with its stakeholders, other subjects also include local government officials and community residents. In relation to the statistical tools used, it has been observed that RTU’s researches are mostly quantitative in nature, thus utilizing either inferential or descriptive statistics in the analysis of the data. A great number apply inferential statistics; the most frequently used being that of the t-test for independent sample means. Such outcome may be due to the practice and exposure of the researchers to the use of non-experimental quantitative research method.

All research performance evaluation systems revolve around the concept of quality. At present, the general practice for evaluating research performance of faculty members focus on evaluation, judgment or rankings and the individual’s list of publication (Meho & Sonnewald, 2000). The criteria “organization” was assigned rank 1 in terms of quality. This implies that faculty members are good in communication, a very important tool in research. As Will (2011) stated, the value or quality of a research paper embraces the use of clear English and coherence in constructing ideas. Note that the papers assessed in this study in terms of contents and methodologies were just rated good. Such result may be due to the diverse functions of the faculty members: trifocal function-teaching, research and community extensions (Clemeña & Acosta, 2007).

Report from the “Pilot Study Research Rating” of German Universities (2008) indicates that research quality rating is affected by substantial assessment of the research outcome that is publication. On this feature, RTU has its share of contribution-more quality research papers are being produced and published in international refereed journals for the last three years (2011-2013). Maybe, the financial incentives allocated for this activity prompt faculty researches to pursue the task. Seeing that adequate incentives become crucial in sustaining and enhancing research productivity, this should be supported and maintained by the administration. Clemeña and Acosta (2007) cited that Institutions should strengthen research benefits and incentives to serve as motivational factors for teachers to do research, taken into account also that such task is mandated by CHED-NHERA.

**Significant difference on performance ratings from 2010-2013**

**Table 1 Difference in Research Performance by Criteria and Year**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P-value</th>
<th>F crit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rows</td>
<td>106.1947</td>
<td>2</td>
<td>53.09734</td>
<td>7.132211</td>
<td>0.025957</td>
<td>5.143253</td>
</tr>
<tr>
<td>Columns</td>
<td>18.29378</td>
<td>3</td>
<td>6.097927</td>
<td>0.819094</td>
<td>0.528916</td>
<td>4.757063</td>
</tr>
<tr>
<td>Error</td>
<td>44.66834</td>
<td>6</td>
<td>7.444724</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>169.1568</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1 shows that the main effect associated with the rows (criteria) is significant, using α = 0.05, with the $F_{comp} = 7.13$ greater than $F_{critical} = 5.14$ (p=0.0259). Whereas, the main effect associated with the column (year) is not significant with the $F_{comp} = 0.819$ less than $F_{critical} = 4.76$ (p=0.529). It follows that the research performance varies by criteria: organization, content, and methodology from year 2010-2013 where most researches were published.

**Impact of research to decision-making and behavior of University**
Table 2 Research impact of the study

<table>
<thead>
<tr>
<th>Impact of Research Assessment and Performance</th>
<th>Weighted Mean</th>
<th>Verbal Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influence budget allocations/research funding.</td>
<td>3.99</td>
<td>Agree</td>
</tr>
<tr>
<td>Shape academic career, hiring, and promotion.</td>
<td>4.07</td>
<td>Agree</td>
</tr>
<tr>
<td>Refine researchers' understanding of research/knowledge transfer.</td>
<td>4.01</td>
<td>Agree</td>
</tr>
<tr>
<td>Enhance the applicability of research results.</td>
<td>3.78</td>
<td>Agree</td>
</tr>
<tr>
<td>Improve research units services and facilities.</td>
<td>3.78</td>
<td>Agree</td>
</tr>
<tr>
<td>Promote public understanding of research.</td>
<td>3.70</td>
<td>Agree</td>
</tr>
<tr>
<td>Emphasize institutional performance.</td>
<td>4.17</td>
<td>Agree</td>
</tr>
<tr>
<td>Measure local, national, and international competitiveness.</td>
<td>4.11</td>
<td>Agree</td>
</tr>
<tr>
<td>Strengthen the sense of balance between teaching and research.</td>
<td>3.92</td>
<td>Agree</td>
</tr>
<tr>
<td>Redirect changes of curriculum priorities.</td>
<td>3.92</td>
<td>Agree</td>
</tr>
<tr>
<td>Grand Mean</td>
<td>3.95</td>
<td>Agree</td>
</tr>
</tbody>
</table>

The data presented in Table 2 clearly show that the respondents agreed, $\bar{x} = 3.95$, on the positive influence of research assessment and performance based on the following criteria: budget allocations/research funding, hiring and promotion, improvement of service units and facilities, applicability of results, institutional performance, measurement of competitiveness, teaching/research sense of balance, and curriculum direction. Most significant in the results of the study is that all respondents agreed that research assessment and performance have an impact on the academic decision-making and production of knowledge. This belief is founded on the idea that all research undertakings of the university take into consideration the following areas: budget allocation, promotion and hiring, improvement of research units and facilities, emphasize institutional performance, and redirect changes of curriculum priorities because they will serve as gauge or barometer in identifying RTU as world class University.

The findings are in accordance with the study conducted by Hazelkorn (2009) wherein she cited that international research conducted from 2006-2008 shows that higher education leaders around the world believed that research assessment performance through rankings influence their own decisions about funding, curriculum, rebalancing between teaching and research, undergraduate and post graduate, sponsorship and graduate recruitment. Diverging from these findings, specifically on budget allocation, is a report on the “Pilot Study Research Rating” of German Universities (2008) citing that allocation of public funds is not directly linked to any selective assessment but rather on replicating the research performance rating after a certain number of years. Accordingly, such reassessment would impart existing trends and deliver suitable basis even important decisions.

Research performance determination through rankings is an expected manifestation of globalization and promotion of Higher Education. From this practice, status of research in RTU in terms of accountability and national competitiveness can be measured. By valuing research rankings-and similar systems of assessment, one acquires knowledge, motivates behavior, makes decisions and opinions, and provides comparisons.

**CONCLUSIONS**

Research productivity in terms of yearly production increases with the College of Arts and Sciences having the highest research outputs. In terms of ranks, the greatest number of research produced is credited to Instructor 1 and most of them are in the field of education. A great number of researches adapt the descriptive survey research method, have the students as the most used subject or unit in the study, and use t-test for independent sample means for statistical tool.
In the three criteria for evaluating research performance, the faculty members perform well in “organization. Research performance of the faculty members significantly differ in terms of the specified criteria: content, methodology, and organization and by year. A considerable number of completed researches are published in international refereed journals and the rest in local publications. The faculty researchers agree that research performance influences the academic decision-making of the University and the production of knowledge.

RECOMMENDATIONS

Maintain the present research performance rankings with strengthened research consciousness to ensure that competent and excellent researchers will be available for more years to come. Multidimensionality ranking, meaning the assessment is differentiated in terms of various performance criteria, may be done. There should be more supports in terms of infrastructures, human and material resources among others from the college or institution to produce more publications in refereed journal, whether national or international. Additional indicators of high research productivity must be in accordance on other theme such as Bibliometrics, aside from the CHED-NHERA Agenda. Citation ranking may be considered for the Institution to be categorized as Research University.

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