# A Comparison of Demographic and Research Characteristics of Faculty in a Philippine Private University: Assessing Self-Efficacy, Attitude, and Interest

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**ABSTRACT.** As the country shifts toward institutionalizing research-related activities for both basic and higher education, research productivity (RP) still exhibited low ratings, with most of the universities still developing their own research cultures. To keep up with this shift, the current paper aimed to provide an assessment of the current research characteristics (i.e., research self-efficacy, research attitudes, and research interests) of faculty members in a private university in Bacoor, Cavite. Focusing on a relatively small scale of faculty members (*n*= 49), the investigation tried to compare the faculty's demographic profile and research characteristics to further understand the overall university faculty research productivity. The findings revealed that they have an above-average confidence level with their research skills, have a somewhat positive view of research, and are likely to be interested in doing research. The study found no significant differences among the participants' research characteristics when grouped according to their gender and educational attainment using Mann-Whitney U tests and Kruskal-Wallis tests. However, there is a significant difference in the research attitudes among different age groups. Results have provided an objective assessment of the current research characteristics of university faculty members that may inform potential research training programs.

## 1.0. Introduction

For decades, there has been critical attention to research as a major contributing body for producing knowledge and formulating developments to the quality of human life. Research has been a vital capital in this knowledge-driven economy that has provided institutional and policy changes in the academe worldwide (Gomba & Pacolor, 2014). In the academe, much research has contributed to the improvement of significant aspects of teaching (Hyland, 2011; Richards & Rodgers, 2014) and learning (Badger & White, 2000; Oxford, 1990; 1994), where scholarly outputs have become essential components in knowledge-building and understanding of the world (Leedy & Ormrod, 2005). Because of this, many universities have looked into implementing policies and mandates that strengthen and foster efficient research productivity among faculty members (Altbach, 2011; Bland et al., 2005). Creating efficient faculty research productivity (RP) reflects the university's ability for knowledge contribution (Alghanim & Alhamali, 2011) and academic performance (Jung, 2012); thereby proving their capability for developing cultural, educational, and social components of society (De Villiers & Steyn, 2009). In definition, RP is the "assessment of the extent to which lecturers… engage in their research and publish researched articles" (Kusure et al., 2006, p. 118). RP is usually associated with the number of the faculty's scholarly outputs published in books and academic journals (Alhija & Majdob, 2017). With these changes, RP has been an important aspect of a faculty's academic success (Bloedel, 2001; Kotrlik et al., 2002). Scholars have regarded the importance of research and its production in different facets of the academe, such as faculty appraisal, accreditation, teaching, and promotion (White et al., 2012).

In developed nations, institutions and universities have constructed a comprehensive understanding of research production that echoes their rich research culture. In these developed countries, one significant contributing factor in the development of different fields of specialization is the number of published scholarly works of academics. Consequently, an increasing area of interest

among various scholars has been on university faculty member's research vitality and efforts for research production (Barner et al., 2015; Brocato & Mavis, 2005; Holosko & Barner, 2016; Meho & Spurgin, 2005; Smyth & Mishra, 2014). Furthermore, studies about different predictors and determinants of faculty research productivity have also been progressively recognized (Fetalver, 2013; Wichian et al., 2009). Faculty members of HEIs have recognized the importance of research as part of their responsibilities; hence, they consistently showcased research productivity (Salazar-Clemeña & Almonte-Acosta, 2007). In the Philippines, major shifts in activities and initiatives have been done by the Department of Education (DepEd) to institutionalize action research on the many functions of a Filipino teacher (Alcazaren, 2021; Tindowen et al., 2019). Moreover, the Philippine Commission on Higher Education (CHED) has mandated the Republic Act (RA) 7722, known as the "Higher Education Act of 1994", where faculty members are essentially obligated to become teachers, researchers, and service-oriented professionals. As a result, many HEIs in the Philippines have been strengthening the research components of their programs, presumably to address the pressures to stay competitive and to improve the reputation of the quality of education in the country, similar to other developing countries, such as Ethiopia (Monroe et al., 2012) and Pakistan (Lodhi, 2012).

However, these initiatives had not yet strived to improve the current state of research in the Philippines regarding quantity, quality, thrusts, and contribution to national development (Salazar-Clemeña, 2006). Sanyal and Verghese (2006) noted that universities in developing nations have strong teaching competency but weak research productivity. The Philippines, for instance, has only 15 graduate-capable HEIs out of a sample of 223, and only two of these are capable of offering strong doctorate programs (Bernardo, 2003). The numbers show that less than 10% of Philippine HEIs were equipped to teach and engage in research. The Philippines still ranked the lowest in RP compared to its other ASEAN counterparts (Vinluan, 2012). The low research productivity of Filipino researchers might have something to do with different factors such as economic indicators, faculty orientation on research, and the culture of knowledge dissemination in the country. Moreover, the low research productivity of Philippine institutions was partly due to the teaching-focused orientation of the HEIs and the weak research culture of the country (Reyes & Reyes, 2015). Furthermore, public resources and research funding have been found as a major issue in the country's different state universities and colleges (SUCs), that had limited the optimization of the research and development (R&D) capacity of these sectors (Etcuban et al., 2016; Regadio & Tullao, 2015). It is also noteworthy to consider that the funding issue is not always about having little money to be allocated but the capacity of the universities to empower their staff to undertake research and to train students in research (Calma, 2010). Additionally, there is a need for Philippine HEIs to reconsider their notion of postgraduate supervision because of some observed issues, such as lack of expertise of supervisors, weak supervision, and mismatch between supervisors and graduate candidates, to truly maximize Filipino graduate students' research capacity (Calma, 2011). Nevertheless, Philippine HEIs had showcased varied research capabilities, "a diversity that can be explained by differences in university type, faculty profile, as well university locale" (Salazar-Clemeña & Almonte-Acosta, 2007, p. 2). If utilized effectively, this diversity of human capital can lead to well-responsive, research-oriented institutions that are willing to collaborate and produce ideas for societal development.

With the issues mentioned above on faculty research, the current paper aimed to address these problems through an objective assessment of the research training needs of university faculty members to be used in planning for research activities. Another important purpose of the study was to identify various factors influencing faculty RP and engagements that may inform the university's research policies and processes. Specifically, the study determined the extent of research self-efficacy, research interests, and research attitudes of the participants. Moreover, the study compared the participants' self-efficacy, interests, and attitudes when grouped demographically (i.e., by age, gender, and educational attainment). The study needs to consider these demographic factors as they are significant predictors of faculty research productivity (Jung, 2012). With the study serving as a training needs assessment, results can become empirical grounding for potential university-led research training and activities for faculty members. Since assessment (i.e., of research self-efficacy) objectively evaluates the effectiveness of training programs (Tiyuri et al., 2018), the findings of the study can help in devising evidence-based strategic research programs that meet the current needs of the faculty. The results of this study could serve as additional discussion points and critical analysis for the school administration in improving RP among teachers and in coming up with plans to further encourage these teachers to engage in research.

**2.0. Framework of the Study**

To explain the association of different constructs to RP, social cognitive theory (SCT) (Bieschke et al., 1996; Lent et al., 1994) provides a useful theoretical framework for explaining possible systematic links among variables like individual traits, research self-efficacy, research interests, and aspirations, and research attitudes. Anchored in the works of Bandura (1977) and Bandura et al. (1999), this theory determines how the triadic reciprocal causation framework (i.e., person, cognitive, environment, experience, and behavior factors) relates and influences one's social behavior like interests, choices, and performance. In the context of this study, two elements of the theory are particularly relevant: the assumptions on self-efficacy, and its impact on aspirations and interests. Firstly, the theory posits that the personal accomplishment and mastery of skills and expertise (i.e., research-related skills like reviewing the literature and analyzing data) greatly influence the level of research self-efficacy of an individual. Secondly, research self-efficacy is considered a strong determinant of research interests. It argues that the more an individual perceives themselves as research competent, the more likely they will pursue research undertakings and aspirations. To understand the context of RP, Lent et al. (1994) argued that a faculty with a high level of belief in accomplishing research-related activities (i.e., having high research self-efficacy) and who perceives research works as a worthy outcome (i.e., positive research attitude) are more likely to have consistent research interests and aspirations.

**3.0. Methodology**

With the majority of the literature on RP drawing from the positivist paradigm, the study employed a quantitative approach. This approach allowed the investigation of patterns of the relationships of various variables that may influence RP. In order to obtain the quantitative data, a survey questionnaire on faculty research training needs was used. Because of the limited face-to-face protocol of the university, the questionnaire was given online through the department heads and college deans.

The respondents of the study were faculty members from the university ($n$=49). The study was conducted in a private institution in Bacoor, Cavite. The growing research culture prompted the selection of this university with its extensive research programs spearheaded by their Research and Development Center (R&DC). Furthermore, faculty members come from different departments and colleges of the university. These teachers have different socioeconomic status, educational backgrounds, and educational attainments that allowed the utilization of demographic profiling variables in the data analysis. The choice to make this particular inquiry among faculty members was impelled by the exposure of these teachers to research-related content and courses that enable them to assist and mentor students in undertaking research works. These teachers should be assisted in implementing effective research mentorship to develop research self-efficacy and interest, not just with other faculty members but also with their students.

The main research instrument was the university-mandated research training needs assessment form. This two-part survey questionnaire assessed the training needs of the faculty members at the university as the basis for all the programs of the R&DC. The first part of the survey profiled the respondents' demographics and basic information, while the second part of the survey determined the level of research interest, self-efficacy, and attitudes.

The survey responses were analyzed using SPSS PC software. Nonparametric statistical methods were used, including Mann-Whitney U tests and Kruskal-Wallis tests, to compare the difference in the participants' research self-efficacy, attitudes, and interests among gender, age, and educational attainment. All statistical tests were two-sided. A $p$-value $<0.05$ was considered statistically significant.

**4.0. Results and Discussion**

**Respondents' demographic profile**

Among the respondents of the survey questionnaire ($n$= 49), the majority of the university faculty were above 41 years old (55%), with 41-50 years old (33%) and over 50 years old (22%). In terms of gender, there were more female college faculty (66%) than male faculty members (35%). On the other hand, the majority of the faculty were Master's degree holders (59%). Table 1 presents more detailed data on the demographic profile of the participants.

***Table 1.*** Profile of the Respondents

| Demographics | f | % |
|---|---|---|
| Age (in years) | | |
| 20 – 30 | 11 | 22 |
| 31 – 40 | 11 | 22 |
| 41 – 50 | 16 | 33 |
| Over 50 | 11 | 22 |
| Gender | | |
| Male | 17 | 35 |
| Female | 32 | 65 |
| Educational Attainment | | |
| Bachelor's Degree | 13 | 27 |
| Master's Degree Holder | 29 | 59 |
| Doctorate Degree Holder | 7 | 14 |

**Research interests, self-efficacy, and attitudes of university faculty**

Based on the data in Table 2, it can be inferred that university faculty members have an above-average level of confidence in their research skills (M=3.55, SD=0.88), possess somewhat positive attitudes towards research (M=3.80, SD=0.82), and were likely to be interested in doing research (M=3.87, SD=0.92). Findings showed that the faculty's confidence in their research skill-sets is attributed to their in-depth skills in manipulating technological resources, reviewing relevant literature, creating theoretical and conceptual paradigms, and writing research abstracts. Moreover, these faculty members perceived research as a valuable, meaningful, and interesting academic activity. On the other hand, their interests in terms of research-related activities included reading research articles, developing research instruments, analyzing and collecting data, and conceptualizing a research topic.

***Table 2.*** Level of Research Self-Efficacy, Attitudes, and Interests

| Variables | Mean | SD | Description |
|---|---|---|---|
| Research Self-Efficacy | 3.55 | 0.88 | Above Average Confidence Level |
| Research Attitudes | 3.80 | 0.82 | Somewhat Positive Attitude towards Research |
| Research Interest | 3.87 | 0.92 | Likely to be Interested in Research |

The results showed that the respondents generally have high self-efficacy toward research writing. Research self-efficacy usually pertains to one's confidence to successfully perform research tasks such as reviewing literature and analyzing data (Forester et al., 2004). As defined by Bandura (1977), self-efficacy is the belief that one can perform tasks successfully with a sense of efficiency and competence. Regardless of one's abilities, Bandura et al. (1999) posited that self-efficacy represents one's confidence that they have the skills to perform and engage in any given task, particularly when challenges are present. Because self-efficacy can be attributed to persistence and grit while facing problems, individuals with higher self-efficacy show more effort in performing tasks (Tiyuri et al., 2018) and exhibit improved academic achievement (Overall et al., 2011).

Many studies showed how mentorship and research training of faculty members could greatly increase research self-efficacy and aspirations. For example, the study of Lev et al. (2010) analyzed the perception of research self-efficacy in a nursing mentorship program of students ($n$=29) and faculty members ($n$=43). The study suggested how effective mentorship can increase students' choice of research careers and develop the professional knowledge of both mentors and students. Similarly, the study of Adedokun et al. (2013) investigated students ($n$=156) who participated in the faculty-mentored interdisciplinary STEM research program. Their findings posited how research self-efficacy had become a mediator between students' research skills and their career aspirations. The results also indicated how students' research self-efficacy could predict one's research career. On the other hand, the study of Overall et al. (2011) looked into supervisor support and research self-

efficacy among Ph.D. students (*n*=359). The results of the study revealed how supervisors' support for students' autonomy creates greater students' self-efficacy in completing research tasks. In summary, one's research self-efficacy has been found to predict one's interest in pursuing research.

Based on the findings of the study, respondents showed a relatively high interest in research. It is assumed that having a higher level of research self-efficacy can lead to increased research interest. As one of the key constructs linked to greater research performance, much of the literature has investigated how research interest can influence faculty RP (Bieschke et al., 1996; Lent et al., 1994). Conceptually, research interest pertains to behaviors that indicate one's favorable or unfavorable disposition toward research-related activities (Eam, 2015). As observed by Kahn and Scott (1997), research interest was a significant intermediary that related different types of personality and their research training environment to an improved RP and research-related career aspirations. To better frame the importance of this construct, Bishop and Bieschke (1998) posited how "[u]nderstanding the development of research interest is [an] important precursor to building a testable, parsimonious model of research productivity" (p. 183).

Lastly, results showed that the respondents expressed positive attitudes towards research. In definition, attitudes are a predisposed response, whether favorable or unfavorable, to a given object or event (Fishbein & Ajzen, 1977). In the articles of Papanastasiou (2005, 2014), she has identified five factors that influence research attitudes: 1) usefulness of research, 2) anxiety, 3) affect indicating positive feelings about research, 4) life relevance of research to daily lives, and 5) difficulty of research. The respondents' positive attitudes toward research can be inferred that they find research useful and relevant to their personal and professional growth. The study of Repedro and Diego (2021) showed that the most important component of faculty's attitude towards research is how they view the value of research in their lives.

**Comparison by age groups**

Table 3 compares the university faculty's responses to the research survey questionnaire when grouped according to age brackets. The statistical analysis revealed a significant difference in the research attitudes of these faculty members in terms of their age groups ($p < 0.05$, Kruskal-Wallis' test). Faculty members who were over 50 might not have a similar positive attitude toward research compared to their younger counterparts. Aside from the attitudinal differences, research self-efficacy and research interests showed no significant difference among the age groups. Interestingly, there is no significant difference in the self-efficacy of tenured and seasoned faculty members compared to their novice and relatively young colleagues.

***Table 3.*** Difference in research self-efficacy, attitude, and interests according to age

| Variables | 20-30 (Mean Rank) | 31-40 (Mean rank) | 41-50 (Mean rank) | Over 50 (Mean Rank) | *p* |
|---|---|---|---|---|---|
| Research Self-efficacy | 17.82 | 26.55 | 29.34 | 24.32 | .205 |
| Research Attitude | 18.05 | 26.27 | 32.50 | 19.77 | .033 |
| Research Interests | 18.41 | 29.82 | 28.09 | 22.27 | .185 |

The study's findings show significant differences in the groups' research attitudes, which contradict some of the results in the literature. Shaukat et al.'s (2014) study of postgraduate students (*n*=201) in teacher education programs found no significant results on age associated with research attitudes. Moreover, the study of Kotrlik et al. (2002) found that the variable of age has no explanation for a significant proportion among full-time, professorial rank faculty in agricultural education (*n*=228). The results of the current study, however, were in parallel with Lertputtarak's (2008) findings that the age of university lecturers in a Thai university can be a significant determinant of research productivity. In Hedjazi and Behravan's (2011) study of RP among Iranian agriculture faculty, their regression analysis revealed that age was a significant predictor.

It should be understood that numerous studies have already proven how research productivity can differ by the age of faculty members (Sabharwal, 2013). Based on the literature, it can be assumed that RP tends to decrease with age (Bland & Berquist, 1997; Dakik et al., 2006; Lissoni et al., 2011). Even though that age was found to be a fairly weak predictor of academic and research performance, particularly in the hard sciences, it was found that older scientists publish less than their younger

counterparts (Levin & Stephan, 1989). This is supported by Dakik et al. (2006), who found a higher publication rate among younger and newly recruited medical faculty. The study of Kyvik (1990), for example, showed how faculty members tend to be more productive in their early career stages if they work in a discipline where knowledge and information are constantly evolving and changing. Recent studies also showed the negative influence of age on faculty RP (Costas et al., 2010; Lissoni et al., 2011; Shin & Cummings, 2010).

**Comparison by gender**

Table 4 shows the differences in the participants' research characteristics when grouped according to their genders (male/female). The statistical analysis showed no significant differences between the two genders in terms of their research self-efficacy, attitudes, and interest. The findings of the study provided contradictory data to other studies (Oguan et al., 2014; Shaukat et al., 2014) that found that males held more positive attitudes towards research.

***Table 4.*** Difference in research self-efficacy, attitude, and interests by gender

| Variables | Female (Mean Rank) | Male (Mean Rank) | *p* |
|---|---|---|---|
| Research Self-efficacy | 25.73 | 23.50 | .602 |
| Research Attitude | 25.71 | 23.53 | .613 |
| Research Interests | 25.42 | 24.13 | .763 |

The findings of the study showing no significant differences were in support of the assumption that the relationship between gender and researcher productivity has been seemingly unpredictable, sometimes showing correlation and contradictory findings (Blackburn et al., 1991). The results were in parallel with other studies, such as the results of Kotrlik et al. (2002) and Hedjazi and Behravan (2011), which also found no significant differences among genders and RP.

Conversely, some studies showed how self-efficacy level significantly differs when grouped according to sex (Campos & Madrigal, 2020; Martinez & Maravilla, 2020). Also, many studies have found that male faculty members were more research productive than their female counterparts (Jung, 2012; Reyes & Reyes, 2015; Sabharwal, 2013). As explained by Fox (2005), this gender gap may not have resulted from women's marital status but was influenced by a woman's type of marriage, spouse's occupation, and children's ages. Particularly, female academics with children of school age have a stronger possibility of decreasing productivity. The lower research productivity of women can also be influenced by their allotment of devoted time for service-related activities (Link et al., 2008; Morrison et al., 2011). However, Teodorescu (2000) disagreed and asserted that women scholars do not necessarily publish less compared to their male counterparts.

**Comparison by educational attainment**

Table 5 presents the differences in the results if grouped according to the third demographic factor, educational attainment (i.e., Bachelor's degree, Master's degree, Doctorate degree). Based on the findings, the statistical analysis revealed no significant differences among the participants' research self-efficacy, attitude, and interests if grouped based on their educational attainments.

***Table 5.*** Difference in research self-efficacy, attitude, and interests by educational attainment

| | Bachelor's (Mean Rank) | Master's (Mean rank) | Doctorate (Mean rank) | *p* |
|---|---|---|---|---|
| Research Self-efficacy | 20.31 | 27.31 | 24.14 | .321 |
| Research Attitude | 21.50 | 26.07 | 27.07 | .573 |
| Research Interests | 24.65 | 25.78 | 22.43 | .850 |

Faculty's educational attainment can also be reflected by their academic ranks, which is their level of academic experience. The results of the analysis contradict other studies (Bland et al., 2005) that found significant differences in the educational attainment and research productivity of faculty. Regardless of one's academic ranking, it can be assumed that the participants have a generally

positive disposition and confidence in engaging with various research-related activities. Moreover, the findings may have resulted from the relatively small population of faculty members of the university.

The results of the study were in contrast to those obtained by Alhija and Majdob (2017), which showed how higher-ranking teachers were more productive with research compared to their low-ranking colleagues. Because RP is a major criterion for faculty appraisal, high RP among high-ranking faculty members is understandable. Wang and Huang (2008) revealed how research performance is greatly affected by the robust academic size of these faculty members. Moreover, tenured professors are more inclined to a higher level of RP than their non-tenured colleagues (Zhou & Volkwein, 2004). In terms of faculty research characteristics, high-ranking faculty members tend to have higher self-efficacy. The study by Eam (2015) of Cambodian academics' (*n*=453) found that high research self-efficacy is equivalent to higher research aspirations or interest. However, the results showed how research outcome expectations, while significant, have a weak association with research interests.

## 5.0. Conclusion

With the primary objective of assessing faculty research characteristics, the current paper identified faculty attributes that may or may not influence their research productivity. One noteworthy finding of the study is how university faculty members showed relatively promising results in terms of their research self-efficacy, research attitudes, and research interests. Specifically, findings revealed how the participants were confident and interested in doing research-related activities. Also, the participants showed a positive perception of research that can be a potential for effective and successful research training in the future.

On the other hand, findings revealed that one's research self-efficacy, attitudes, and interests might not be relative to one's age, gender, or educational attainment. This can lead to an understanding that future research training can have general topics and activities that include all types of ages, genders, and educational backgrounds. The findings of the study can help the R&DC in crafting the training without having to overanalyze or overcompensate the need to consider specific demographics of the university faculty members.

Overall, the findings of the study contributed to the expanding body of literature that looks into the many possible variables that may or may not impact faculty research productivity, particularly in the Philippine context. It should be noted that the current study is limited to one university in Cavite and should not be a basis for generalized assumptions regarding the research cultures of different universities and institutions around the vicinity. Moreover, only college faculty members were made to respond to the questionnaire, thus, leaving out faculty members who might be doing research in the basic education department.

For future research directions, analysis can be made using different categories where other constructs are considered variables such as research sources, motivation, or reward incentives that may predict RP. Also, a mixed method can help enrich the study's quantitative data by providing narratives and personal experiences of the faculty members.

## 6.0. Declaration of Conflicting Interest

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