THE DETERMINANTS AND CORRELATION OF GRADUATE STUDENTS RESEARCH CAPABILITY, INTEREST AND SATISFACTIONS

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Abstract: The paper aims to ascertain graduate students' perceived research capability skills at Ilocos Sur Polytechnic State College – Sta Maria, Ilocos Sur, Philippines. Based on the calculated sample size, respondents filled out a structured questionnaire distributed via messaging applications. To illustrate the findings, statistical descriptive were created, and constraints were identified where capability training would be required. The findings indicated that respondents perceived themselves to have a low level of research writing capability in terms of developing the study's framework, developing the methodology, collecting, cleaning, and encoding data, performing data analysis, preparing presentations for poster and oral discussion, and writing the research article for publication. Therefore, an improvement should be addressed through research capability seminars.

Keywords: Research, capability, training, graduate, students

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INTRODUCTION

Research is critical to a country's and an organization's success on a national and international level. Its significance cannot be overstated because it aims to preserve and improve the quality of life (Salazar-Clemeña and Almonte-Acosta 2007). The research objective may be a good life; consequently, the purpose is to aid man. As a result of its application, man advances. Research is conducted with the intent of benefiting humanity. Research is used to address societal challenges at all levels of society, from the local to the various government and non-government agencies. As a result, these organizations are establishing research agendas to address pressing social issues. We must advocate for research because it is a serious and persistent pursuit of knowledge.

The term "research capability" refers to an individual's, organization's, or system's capacity for effectively and efficiently conducting and disseminating high-quality research. It considers "institutional" factors such as incentives, the economic, political, and regulatory environment, as well as the resource base of the environment (Salom 2013). Research capability enables students to acquire a sophisticated body of knowledge and advanced research skills in areas of research practice identified as relevant to their research project but not covered in the year one program.

Individuals, organizations, and systems with research skills can conduct and disseminate high-quality research and improve the research climate at work. It considers incentives, the economic, political, and legal frameworks, and the setting resource base.

Apart from providing professional and technical education in economics, agriculture, fisheries, trade, home industry, engineering, education, forest research and conservation, management, finance, accounting and business administration, and public administration, among others, the Ilocos Sur Polytechnic State College mission is to promote and advance scientific research and development.

Research is one of Ilocos Sur Polytechnic State College (ISPSC) under Republic Act 8547. "To establish research and extension centers for the College in locations where such centers will promote the latter's development," Section 5.m of the act states. As a result, both faculty and students are encouraged to participate in one. However, not all of them are motivated to act in this manner.

Graduate students enrolled in ISPSC must research topics that are current and relevant to their field of study. On the other hand, students frequently struggle to complete their papers because the research process is lengthy and laborious. This is the impetus for the researchers to conduct this study.

While research is a required component of the curriculum, students frequently struggle with conducting research and writing papers, mainly when the work is due within a semester. The majority of graduate students at the college are educators. As indicated by their performance evaluation score, certain teachers may be deficient in research due to a dearth of new research. The primary objective of the ISPSC graduate school department must be to provide students with the tools they need to develop and enhance their research capabilities to become competent researchers. The college, as well as its graduate school department, are accountable for resolving this matter.

As a result, the study will benefit the college in identifying graduate students' current research capabilities and their satisfaction with the institution's services. As a result, the college may better

understand the needs, skills, and competencies that can be addressed to generate inputs for developing intervention strategies and policies and programs related to research innovation. This is to sustain, develop, and enhance students' research abilities and capabilities through seminars or training to bolster the institution's research component as it transitions to university status.

Objectives

The aim of the study is to ascertain the graduate students' research capability skills. It sought to determine the following:

1. The respondents' characteristics;
2. The students' perceptions of their research capabilities in terms of the following:
    - Identifying the research gaps
    - Writing the background of the study
    - Writing the framework of the study
    - Formulating the research questions
    - Writing the review of literature
    - Writing the methodology
    - Writing the results and discussions
    - Formulating conclusions and recommendations
    - Referencing and in-text-citations
    - Writing the preliminary pages;
    - Writing the research article for publication
    - Preparing a poster presentation;
    - Preparing a presentation for oral discussion;
    - Use of computer software for research
3. The perceived capabilities and constraints of students in conducting and writing research;
4. The level of interest and attitude of students towards research;
5. The level of satisfaction of the graduate students to the research-related facilities and services of the college.

Review of Related Literature

Cultures of research are not "born" but rather "created." It is comparable to a naive gardener who scatters seeds into unprepared soil, offers no nutrition, and trusts that the resulting plant will grow robust, healthy, and well-shaped. Research culture is similar to that of a plant. The plant must be suitable with the soil and area in which it is planted; the soil must be carefully tilled and fertilized; it may require stakes and pruning during its formative stages, and it will require the frequent watering necessary for a healthy research culture to grow (Juan et al. 2016).

Numerous studies have established a strong link between an optimistic attitude toward work and job performance and satisfaction (Lyons and Carolina 2011). Krokfors et al. (2011) surveyed teacher educators' attitudes about research-based teacher education in Finland (Krokfors et al. 2011). While many teacher educators praised their university's research-based approach, several voiced reservations about how effectively this perspective was transmitted to student teachers. Furthermore, as Shaukat et al. (2014) observe, Shkedi (1998) discovered that teachers are indifferent in reading research literature, citing a lack of time, knowledge, and appropriate content as well as a lack of faith in study conclusions (Shaukat, Siddiquah, and Abiodullah 2014; Shkedi 1998). Butt and Shams (2013) discovered that prospective teachers viewed research with pessimism (Butt and Shams 2013).

Hughes (2019) identified several difficulties encountered by students while researching her study, emphasizing the critical nature of project-based research skills, which require ongoing development and evaluation to remain progressive (ipsative). The following challenges were identified in light of the research findings: (1) conceptualizing research abilities and progression, (2) accumulating and enriching research abilities, and (3) providing a consistent support system throughout the program. Hughes emphasized that these three factors have acted as a deterrent to students because they are difficult for institutions to provide and are not readily available (Hughes 2019).

According to Lyons, Fisher, and Thompson (2005), graduate students

reported enhanced research abilities due to their participation in graduate teaching fellowship programs. Their study revealed that graduate students participated in teaching experiences designed to help them develop inquiry-based teaching abilities (skills that assist teachers in better-enabling students' capacity to ask questions, generate hypotheses, and devise methods for examining their questions) (Lyons and Carolina 2011). According to Sweitzer (2009), inquiry-based teaching and research share cognitive processes because researchers-in-training must carefully reflect on their own experiences and knowledge to refine their understandings of events. Similarly, teachers who employ inquiry-based methods must carefully analyze existing knowledge in order to effectively scaffold students' learning (p. 2) (Sweitzer 2009)

Fewer studies have been undertaken on developing researchers' critical research skills; however, there is some work in this field. Kardash (2000), for example, created an instrument to capture the increasing research skills of students engaging in research [12], whereas Powers and Enright (1987) developed a survey to assess graduate student research skills that faculty members felt relevant (Powers and Enright 1987). Few studies, however, have looked at graduate student development in terms of the research abilities that they value. Several existing tools capture either the skill of good teachers or researchers. This data influenced a survey to assess graduate students' teaching and research abilities (GSTARS). The GSTARS was built in part by the analysis of interviews with graduate students. According to the researchers, it was crucial in the construction of a measure that accurately reflects the self-evaluations of their teaching and research abilities

The student's scientific and practical abilities are the most critical aspects in developing a thesis. In other words, a dearth of necessary abilities for thesis writing, such as research technique and statistics, familiarity with scientific databases, and their use, makes thesis writing difficult, if not impossible. For graduate students, scientists have devised a variety of various sorts of insufficient capacities. Self-confidence is critical for success as a graduate student and researcher, as noted in the study of Formeloza (2013) (Formeloza and Pateña 2013). Mizany (2013) have emphasized the need for computer literacy and database in searching scientific and general information (Mizany and Khabiri 2013)

Akuegwu and Nwi-ue (2018) identified six abilities that graduate students must possess to acquire research skills. These abilities include understanding the nature of the information resources variable in their discipline, the ability to state research problems clearly and succinctly, knowledge of research databases such as Google, and the ability to practice critical thinking in realistic situations. (Akuegwe 2018)

In the local perspective, the CHED-Siliman University Zonal Research Center conducted a survey of higher education institutions' research capacity and discovered the following findings: (1) Research received a low priority in terms of funding and other support, compared to teaching and extension. This is because the academic community in this country lacks a research culture. (2) the quality of research outputs is substandard, necessitating the development of strategies to encourage researchers to publish in refereed or peer-reviewed journals and regional journals. (3) Many researchers prefer to work in established fields and avoid emerging, interdisciplinary, or technically complex fields necessary for development. This is because many professors in graduate schools do not have a track record of research. (4) Certain institutions have a high proportion of faculty with MAs and PhDs but a low rate of research productivity. The study concluded that both the quantity and quality of research outputs could be improved (Salom 2013).

In the study of Clemena and Acosta (2012), time, a strong belief in the research endeavor, faculty involvement, a positive group climate, working conditions, and organizational communication, a

decentralized research policy, research funding, and a clear institutional policy for research benefits and incentives all contribute to increased research productivity. [1]. Wilfredo et al. (2016) discovered that public elementary and secondary teachers are moderately capable of writing a research proposal but less capable of using the American Psychological Association (APA) format in texts and bibliographical references in their study on the Research Capabilities of Public Secondary and Elementary School Teachers in the Division of Antipolo City (Juan et al. 2016). According to Abarro and Mario (2016), these findings show that teachers should receive training, specifically on how to apply the American Psychological Association (APA) style when developing a study proposal (Juan et al. 2016). Additionally, Dela Cruz (2016) conducted a study on the Research Capability of Ilocos Sur Polytechnic College, which included 162 faculty members, and discovered that the researchers possess solid conceptual abilities, moderate computational abilities, and technical abilities (Cruz et al. 2016).

Researchers are increasingly interested in the relationship between teaching and research, as well as how each of these activities (as well as their combination) affects graduate students' development of teaching and research skills (Deem and Lucas 2006; Gilmore and Ed 2010; Kardash 2000; Powers and Enright 1987). However, one impediment to exploring these connections is the absence of validated tools that simultaneously capture each area (teaching and research skills). Researchers will compare graduate students' perceptions of their teaching and research skills by using a similar format.

Basilio and Bueno (2019) discovered that Master Teachers have average skills in finding, using, and assessing information and understand the many sources of information and how to access them. Similarly, they possess enough abilities in the design of experimental studies, as well as in the selection and development of research equipment, the selection of relevant statistical tools, and the

preparation of manuscripts for publication. Additionally, the poll discovered that the majority of respondents lacked sufficient training in research capability. They found that research competence training should be organized at several levels, including lectures, hands-on workshops, and the preparation of research papers for colloquium presentations and possible publishing, and should be carried out entirely and monitored consistently (Manolito et al. 2019).

As stated in the research of Abun (2019), one of the well-established characteristics of a profession is its ability to generate research to expand its unique professional knowledge base. It is expected that people in business, education, health practitioners, and other fields must be familiar with research and conduct research. Service innovations can happen if there are researchers in different areas of the services (Abun et al. 2019). As emphasized in the study of Agatep (2020), the need to develop and enhance the graduate students' research students as a response to the Philippine Commission on Higher Education (CHED) push for a more robust research orientation among Higher Education Institutions (HEIs) to cope up with the industry trends, while acknowledging the need for additional research to further improve the capacity and practices over time (Agatep and Villalobos 2020).

METHODOLOGY

Research Design

The study employed a descriptive-correlational and developmental research design. The descriptive method, which included a survey, provided information about the respondents' characteristics and research abilities. The correlational analysis establishes a significant relationship between perceived research capability and satisfaction with the research-related services offered by the college to the profile of the graduate students. Additionally, the study will result

in the establishment of a training program for research capability.

Population and Sampling

The study focused on graduate students at ISPSC Santa Maria in Ilocos Sur, Philippines, who were currently enrolled in the graduate program in 2021 and meet the following criteria: they are currently enrolled in thesis writing course; they have completed or are presently enrolled in statistics and research methodologies subjects. The study employed 101 respondents derived from the sample size computation using GPower 3.1.9.7 with the following input parameters of $\rho = 0.35, \alpha = 0.05$, and A Power of 0.95

Data Gathering Instrument and Procedure and Analysis

Based on the data, a structured questionnaire was developed and gathered from various sources [13][18]. With a reliability coefficient of 0.850, the questionnaire demonstrated a high degree of reliability. Google Forms was created and distributed via messaging apps.

Data gathered from the questionnaire were classified, categorized, and tabulated using MS Excel and statistical software. Descriptive statistics were used such as frequency, percentage, and mean to illustrate our findings. In addition, constraints were looked into as a basis in the formulation of the capability training.

RESULTS AND DISCUSSION

According to the study's findings, the majority of graduate students were under the age of 30 (82 percent), female (70 percent), and single (64 percent), and mostly enrolled in the Master of Arts in Education (MAED) program (29 percent).

Most graduate students work in the public or government sector, as most graduate students work for the Department of Education or academic institutions (77 percent). Sixty-six percent are permanent employees with an average tenure of one to five years (84 percent). They have all attended between one and five research-related training sessions on a local, national, or international level. As a result, professionals must elevate their training to national and international levels. In a relative study of Agatep's (2020) and Kumari (2019), their research demonstrates that students who have received research training have a favorable attitude toward research and the ability to conduct research (Agatep and Villalobos 2020; Kumari et al. 2018), (Apuke and Iyendo 2018)

TABLE 1. *Perceived Level of Research Capability of Graduate Students*

Aspects	Mean	Remarks
Research Process and Ethics in Research	3.60	
Identifying research gaps	3.48	
Writing the context and Rationale	3.47	
Writing the background of the study	3.64	
Formulating research questions	3.44	
Writing the review of literature	3.49	Good
Writing the results and analysis	3.47	
Writing the conclusion and recommendations	3.54	
Writing the referencing and in-text citations	3.62	
Writing the Preliminaries	3.81	
Use of Computer Software for Research	3.81	
Writing the framework of the study	3.25	Adequate but could be improved
Writing the methodology	3.39	
Performing the Data Collection, Cleaning, and Encoding	3.40	
Performing Data Analysis	3.09	
Writing the Research Article for Publication	2.10	
Preparing a poster presentation	3.32	

Preparing a presentation for oral discussion	3.34	
Overall	**3.40**	Adequate but could be improved

Legend for Mean: 1-1.8 Not capable;
1.81-2.6 slightly capable;
2.61-3.4 somewhat capable; 3.41-4.2 Capable;
4.21 -5 Highly Capable

As shown in Table 1, graduate students' research capabilities receive the highest mean rating of 3.81 for the writing of preliminaries and the use of computers for research, which is interpreted as "Capable." Concerning the remaining areas indicated in the table above, students were deemed "Capable," indicating that they possess the necessary knowledge and experience in conducting and preparing a research paper. While developing the study's framework, writing the methodology, collecting, cleaning, and encoding data, performing data analysis, preparing for poster and oral presentation, achieved mean ratings of 3.25, 3.39, 3.40, 3.09, 3.32, and 3.34, respectively, which are defined as "Somewhat Capable." Meanwhile, the research capability for writing a research article for publication receives the lowest mean rating of 2.10, indicating that the researcher is "Slightly Capable." This suggests that graduate students' research abilities are adequate but could be improved.

Because writing a research article for publication has the lowest perceived research capability, the department must address the issue of compliance with CHED Memorandum Order No. 15, s.2019, referred to as the Graduate Program Policies, Standards, and Guidelines. Students must have at least one (1) publication in a refereed journal or juried creative work. By strengthening this capability, students will be better prepared to publish in refereed journals.

Eleven of the eighteen identified areas for research paper preparation and writing are satisfactorily met, as perceived by the students. However, seven areas, namely writing the study's framework, writing the methodology, collecting, cleaning, and encoding data, performing data analysis, preparing presentations for poster and oral discussion, and writing the research article for publication, are considered areas for improvement be addressed. As a result, seminar training can be designed to assist students in honing their skills.

TABLE 2.*Perceived Level of Attitude and Interest of Graduate Students to Research*

Attitude and Interest in Research	Mean	Remarks
I feel free to pursue my primary academic interests within the context of research	4.02	High
My attitude and personal interest in research are the most important factors that influence my use of professional time	3.66	High
Teaching does not interfere with my research productivity	4.26	Very High
I consider research as a very challenging endeavor that generates new knowledge and information	4.31	Very High
Pursuit of research enhances my professional skills	4.02	High
Overall	**4.05**	**High**

Legend for Mean. 1-1.8 Strongly disagree;
1.81-2.6 Disagree; 2.61-3.4 Somewhat Agree;
3.41-4.2 Agree; 4.21-5 Strongly Agree

According to the results, respondents assigned the highest mean score of 4.26 to the statement "Teaching does not interfere with their research productivity," indicating "Strongly Agree." By contrast, the item "My attitude and personal research interests are the most important factors influencing my use of professional time" received the lowest mean score of 3.06, indicating "Agree." By and large, respondents exhibit a favorable attitude and interest towards research. This indicates that graduate students have

a favorable attitude toward the conduct and writing of research, provided they possess adequate research capability, though some areas could be improved. According to Abun (2021) study, most respondents have a favorable attitude toward research, are willing to conduct research and apply the findings in their practice, and believe that conducting research benefits their profession and increases their knowledge (Abun 2021).

TABLE 3. *Perceived Level of Satisfaction to the Research Related Resources and Facilities of the College*

Research Related Resources & Facilities	Mean	Remarks
Computer Units for Research purposes	3.68	Needs met
Journals, books, and other materials	2.61	Satisfactory
Installed e-journals (i.e., academic, etc.)	2.59	Needs partly met
Training area for small in-house seminars	3.13	Satisfactory
Training in research	3.37	Satisfactory
Internet access	3.28	Satisfactory
Laboratories for experimental research	2.43	Needs partly met
Statistical software	2.40	Needs partly met
Services for editor/grammarian	3.76	Needs met
Services for referee/reader	3.63	Needs met
Consultation services of adviser (Dean, research committee. Research staff, OPIRE)	3.93	Needs met
Publication of college/institutional research journals	2.58	Needs partly met
Budget for research publication	3.29	Satisfactory
Budget for writing research	3.64	Needs met
Budget for Seminars and Fora	3.61	Needs met
Available time in conducting research	3.20	Satisfactory
OVERALL MEAN	3.68	Needs met

Legend for Mean 1.81-2.6 Dissatisfied;
2.61-3.4 Somewhat satisfied;
3.41-4.2 Satisfied, 4.21-5 Very satisfied

As perceived by graduate school students-respondents, Table 5 demonstrates their level of satisfaction with the agency's availability of research-related resources and facilities. The availability of adviser consultation services and computer units for research purposes receive the highest mean ratings of 3.93 and 3.64, respectively, which are interpreted as "satisfied." Meanwhile, the availability of statistical software, experimental research laboratories, publication of college researchers, and installed e-journals received the lowest ratings of 2.40, 2.43, 2.58, and 2.59, respectively, indicating "Dissatisfied". Graduate students must be exposed to and trained in statistical software, both qualitative and quantitative, to prepare high-quality scientific manuscripts that include accurate and rigorous statistical and data analyses. As stated in Begum's (2015) study, a critical component of ensuring data integrity is conducting a thorough and appropriate analysis of research findings; thus, one must possess the ability to choose the proper tool and statistical software (Begum and Ahmed 2015). In recent decades, research has demonstrated that advances in information technology and computers have influenced students' approaches to research and learning in contemporary higher educational settings and contributed to the emergence of the "new normal. The Apuke (2018) research study establishes the context for further investigation into students' experiences and perspectives regarding access to and utility of electronic sources for academic research and learning. It is necessary to research how students utilize the internet to aid in their academic study and knowledge. With the paradigm shift and current situation caused by the COVID-19 pandemic, students must be provided with access to electronic journals and resources that will significantly enhance their research

capabilities and contribute to the production of high-quality research. The presence of adequate and well-equipped experimental laboratories will also contribute considerably to the methodological diversity of innovative research (Apuke and Iyendo 2018)

TABLE 4. *Significant Relationship of Profile and Perceived Level of Research Capability of Graduate Students*

Areas of Research Capability	Course and Major	Age	Civil Status	Employment Status	Employment Sector	Sex	No of Years working	No. of Local Research Training attended	No. of National Research Training attended	No. of International Research Training attended
Research Process and Ethics in Research	-0.043	-.169*	0.053	-0.151	-0.050	0.029	-.295**	.286**	.377**	.223*
Identifying research gaps	-0.063	-.199*	0.139	-0.095	-0.012	0.048	-.310**	0.185	.286**	0.080
Writing the context and Rationale	-0.069	-.196*	0.077	-0.076	-0.058	0.024	-.235*	.280**	.328**	0.174
Writing the background of the study	-0.070	-.183*	0.063	-0.090	-0.007	0.014	-.272**	.271**	.339**	0.131
Writing the framework of the study	0.019	-.126	0.066	-0.150	-0.093	0.011	-0.212	.249*	.295**	0.138
Formulating research questions	-0.092	-.192*	0.120	-0.103	0.015	0.072	-.297**	.261*	.340**	0.127
Writing the review of literature	-0.091	-.274**	0.145	-0.086	0.000	0.025	-.265*	.270**	.386**	.217*
Writing the methodology	-0.066	-.193*	0.138	-0.150	-0.006	0.075	-.276**	.287**	.349**	0.137
Performing the Data Collection, Cleaning and Encoding	0.003	-.221*	0.150	-0.145	-0.119	0.111	-.245*	.330**	.377**	.213*
Performing Data Analysis	0.049	-.201*	0.143	-0.124	-0.088	0.089	-.266*	.294**	.296**	0.118
Writing the results and analysis	0.003	-.235*	0.072	-0.053	0.019	0.079	-.332**	.350**	.398**	0.169
Writing the conclusion and recommendations	0.004	-.249*	0.108	-0.056	0.018	0.065	-.353**	.369**	.396**	0.190
Writing the referencing and in-text citations	-0.121	-.217*	0.090	-0.110	-0.016	-0.021	-.283**	.317**	.355**	0.175
Writing the Preliminaries	-0.113	-.299**	0.158	-0.048	0.046	0.078	-.251*	.348**	.382**	.229*
Writing the Research Article for Publication	0.199	0.035	0.039	-0.023	-0.053	-0.008	-0.020	-0.132	-0.052	-0.120
Preparing a poster presentation	-0.171	-.311**	0.081	0.005	-0.019	0.049	-0.151	.251*	.245*	0.200
Preparing a presentation for oral discussion	-0.075	-.305**	0.182	-0.137	-0.054	0.103	-.265*	.224*	.327**	0.172
Use of Computer Software for Research	-0.067	-.194*	0.024	0.000	-0.016	0.076	-.306**	.239*	0.189	0.083
Overall Level of Research Capability	-0.094	-.246*	0.142	-0.100	-0.011	0.085	-.290**	.301**	.345**	0.138
Level of Interest and Attitude	0.080	-0.095	0.047	0.092	0.095	0.039	-0.105	.115*	.225*	0.013
Level of Satisfaction	-0.030	-.205*	0.135	-0.109	0.063	0.010	-.279**	.210*	0.200**	-0.016

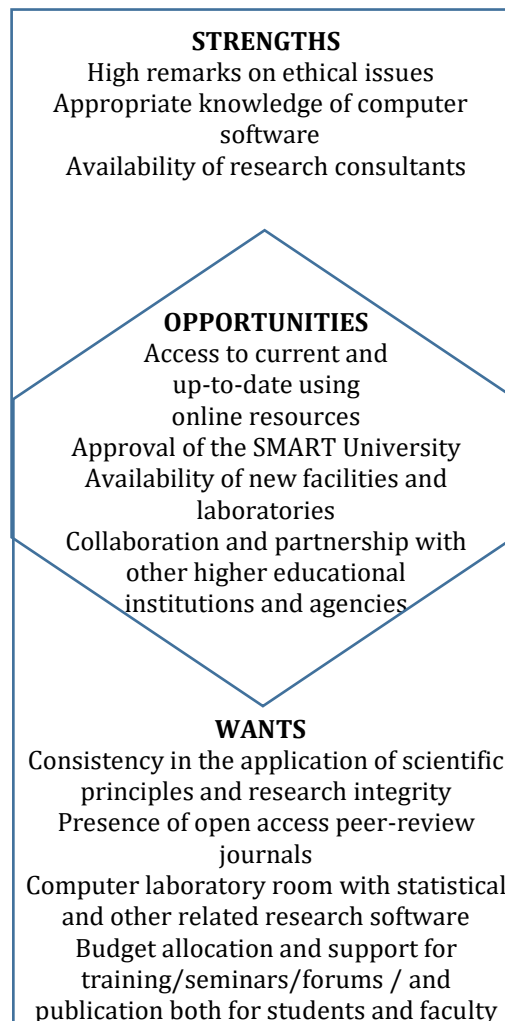*. Correlation is significant at the 0.05 level (2-tailed).

Table 4 shows the relationship between respondents' profiles and their perceived level of research capability for various aspects of research conduct and writing. The following conclusions were drawn:

- Age has a significant inverse relationship with graduates' research capability and satisfaction. This demonstrates that younger generations have an adequate capacity for research because their minds are more simble and can adapt to changes in their environment.
- Years of experience negatively correlate with respondents' research capability and satisfaction with the college research-related resources. This is because the majority of respondents are young and have been employed for less than five years.
- Attendance at training and seminar sessions by graduate students-respondents is positively correlated with their level of research capability, satisfaction with research-related facilities and resources, and their level of interest and attitude toward research. This indicates that respondents' exposure to and participation in research-related training and seminars will assist them in developing and

enhancing their research capability and skills necessary to conduct high-quality research.

As a result of the findings, a Venn diagram for visual analysis was used to assess the research capability of college graduate students, as shown in Figure 1. The top shape represents the organizations and individuals' strengths. The shape on the bottom refers to the Wants or the desire or what the organization can add. The overlap area contains the opportunities or what we can now implement using the college's resources.

FIGURE 1. *Visual Analysis of Research Capability of Graduate Students*

STRENGTHS
High remarks on ethical issues
Appropriate knowledge of computer software
Availability of research consultants

OPPORTUNITIES
Access to current and up-to-date using online resources
Approval of the SMART University
Availability of new facilities and laboratories
Collaboration and partnership with other higher educational institutions and agencies

WANTS
Consistency in the application of scientific principles and research integrity
Presence of open access peer-review journals
Computer laboratory room with statistical and other related research software
Budget allocation and support for training/seminars/forums / and publication both for students and faculty

The respondents show high remarks on ethical considerations, which is part of the college curriculum and serves as one of the department's strengths. The availability and knowledge on essential computer software and research consultants and advisers greatly assist the students in becoming equipped and capable of conducting research. However, the ISPSC graduate school must ensure consistency in facilitating scientific principles and research integrity to provide a high standard of research. Reinforcement and adaptation of the new technology and learning environments must occur by establishing an open-access electronic journal and installing and provision of student versions of statistical and other research-related software to demonstrate to the students the latest developments in producing quality research papers suitable for publication and presentation. Additionally, there is also a need to provide additional training/ seminars to boost the culture of research to the students.

With the administration's and stakeholders' support, opportunities to further develop students' research capabilities are readily available. With government assistance, new facilities and laboratories are being built for the use of students and faculty. Through the CHED Memorandum Order No. 9 s. 2020, the approved program for smart universities and colleges will pave the way for further development of the educational campus's digital network, resulting in advancements in the agency's academic, research, extension, and technology production. To further develop and strengthen current internationalization and networking initiatives at the college and connect the college to various HEIs locally and internationally will enhance academic, research, and extension exchanges.

CONCLUSION AND RECOMMENDATIONS

According to the study's significant findings, graduate studies students at Ilocos Sur Polytechnic State College have a moderate capacity for research. The findings indicated that respondents perceived themselves to have a low level of research writing capability in the following areas: developing the study's framework, developing the methodology, collecting, cleaning, and encoding data, performing data analysis, preparing presentations for poster and oral discussion, and writing the research article for publication. These areas require improvement, which can be accomplished through research capability seminars. Students perceived difficulty following the process as a result of limited attendance at training sessions due to budget constraints and limited internet access.

Based on the findings and conclusions above, the college should provide additional training and capability workshops for graduate studies students. Journals and research materials, whether in print or electronic format, should always be readily accessible to students. Further, the college should provide free internet access to students. Additionally, the college should partner with other institutions to strengthen and expand academic and research exchanges. Also, the budgets for training and seminars should always be included. A seminar on research capability was developed as a result of this study. Succeeding section described that seminar contents.

Research Capability Enhancement Training for Graduate Students and Faculty

Rationale: To continually improve its services to its valued clients, the college strives to instill a research culture in its students. This is also to extend the findings of the research study on the capability of graduate students, where there is a need to enhance their abilities in conducting quantitative and qualitative research.

The Graduate School Research Capability Webinar is a series of seminars for Graduate School students and faculty

scheduled on Saturdays. This activity aims to provide additional insight into the quantitative or qualitative methods used in research. The Webinar will use an online platform rather than traditional face-to-face communication. Expert resource speakers will be invited to discuss the formulated topics. Faculty and graduate students from the graduate school are expected to participate.

Objectives: The conduct of the series of research capability webinars aims to:
1. Assist faculty members, researchers, and graduate students with their educational and research endeavors;
2. To instill an appreciation for the value of research in graduate studies; and
3. To add more in-depth knowledge on the students' level of understanding and how their learning is improved in research.

Programs and Activities

1. Lecture/workshop on Quantitative Research and Analysis. This session covered the fundamentals of quantitative research and analysis utilizing multivariate techniques. October 3, 2021, 8AM- 5PM. 250 participants.
2. Lecture on Emerging Trends in Agricultural Science and Research: (a) Molecular and Biotechnology and (b) The Use of Nanotechnology. The activity introduced participants to current trends and topics in nanotechnology, molecular and biotechnology research. October 4, 2021, 8AM-12NN. 50 participants
3. Lecture on Educational Research. The session concentrated on the various educational studies that students can use to start their research. November 1, 2021 8AM-10AM. 250 participants
4. Lecture on Qualitative Research Study. This session discussed emerging qualitative approaches to research appropriate for a specific study and

suited to our new situation created by the pandemic. November 1, 2021, 10AM-12NN. 250 participants
5. Seminar on Writing and Publishing a Research Paper. The seminar discussed the rationale for writing a research paper and the steps involved in producing a well-argued, publishable paper from a multidisciplinary perspective. November 3, 2021. 8AM-12NN. 250 participants
6. Seminar on Evaluating Test and Measurements. Analysis and its Utilization. This session educated students on the proper use and analysis of various test measurements. December 1, 2021. 8AM-10AM. 250 participants
7. Presentation of Selected Research Outputs of Graduate Students. Selected graduate students presented their research findings to inspire current students. December 1, 2021. 10AM-12NN. 250 participants.

ACKNOWLEGEMENTS

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