International Journal of Social Science and Human Research

ISSN (print): 2644-0679, ISSN (online): 2644-0695

Volume 09 Issue 03 March 2026

DOI: 10.47191/ijsshr/v9-i3-51, Impact factor- 8.361

Page No: 2141-2153

The Moderating Effect of Demographics in the Relationship Between Research Capability and Engagement Among Local Community College Instructors

Naomi J. Tuvilla-Pardillo

Assistant Professor Capitol University, Cagayan de Oro City, Misamis Oriental, Philippine

ABSTRACT: This study investigated the moderating effect of demographics on the relationship between research capability and engagement among local community college instructors. The research was conducted to gain insights into the factors that influence research capability and engagement among these instructors, which could help local community colleges improve research capability and engagement among their instructors. The study employed a descriptive-correlational research design and used proportionate stratified random sampling to gather data from college instructors across five local community colleges in Misamis Oriental. The demographic variables are age, gender, length of service, highest educational attainment, and number of research.

Findings revealed that while many instructors had completed research projects, few had published or presented their work. They showed capability in research skills, with strong competence in concept paper writing, data gathering, and final report writing. They also exhibited high research engagement, but publishing research received lower scores, indicating room for improvement. Moreover, the study found significant differences in research capability and engagement based on age, length of service, and educational attainment. Furthermore, research capability was significant predictor of research engagement. The study also identified time constraints, lack of training, workload, and institutional support as major barriers to research for community college instructors.

Findings revealed that there were strong positive correlations between instructors' research capability and their engagement across diverse research dimensions, highlighting the importance of enhancing research skills to foster greater participation in research activities. Furthermore, age and highest educational attainment moderated the relationship between research capability and engagement. However, sex, length of service, and research-related metrics did not exhibit a moderating effect. These results have important implications for designing effective faculty development programs and fostering research engagement in higher education.

KEYWORDS: Community College Instructors, Research Capability, Research Engagement, Demographics, Factors

INTRODUCTION

Abrugena et al. (2020) emphasized that research plays a vital role in achieving academic excellence and fostering social progress. It enables the generation of new knowledge, supports advancements in scientific inquiry, and contributes to the improvement of instructional methods and student outcomes.

Quitoras and Abuso (2021) highlighted that research capability and engagement levels differ among higher education institutions, particularly in developing nations such as the Philippines. Local community colleges, which serve as public tertiary institutions offering accessible and affordable education to marginalized communities, encounter significant challenges in conducting and disseminating quality research. These difficulties include limited funding, insufficient skills, time constraints, lack of motivation, inadequate institutional support, and scarce resources. Consequently, the research productivity and overall impact of these institutions remain constrained and often fall short of expectations.

According to Heng et al. (2018), research capability encompasses the necessary skills, knowledge, and resources that enable academics to effectively plan, execute, and present research projects. Meanwhile, research engagement refers to the attitudes, motivations, and behaviors that drive academics to actively participate in research endeavors and disseminate their findings to a wider audience. Both research capability and research engagement are essential for the advancement of academic excellence, professional development, and social impact.

While the relationship between research capability and engagement has been studied in various contexts, the moderating effect of demographics on this relationship has not been fully explored. Demographics such as age, sex, length of service, highest educational

attainment, number of research presented, etc. may influence the relationship between research capability and engagement among local community college instructors.

While the influence of demographic factors on this relationship remains underexplored, Garcia et al. (2021) found that age and teaching experience significantly moderate the link between research capability and engagement among university faculty members. Their findings suggest that individual characteristics may shape how educators develop and sustain research involvement, highlighting the need for further examination of demographic influences within different academic contexts. Another study by Lee et al. (2011) found that gender and educational background have a significant moderating effect on the relationship between research capability and engagement among secondary school teachers.

This study aimed to contribute to the existing literature on research capability and engagement among local community college instructors by investigating the moderating effect of demographics on this relationship. The results of this study provided insights into the factors that influence research capability and engagement among local community college instructors and would help local community colleges improve research capability and engagement among their instructors.

METHODOLOGY

Employing a descriptive correlational design with regression analysis, the study examined the relationship between variables and predictors of research capability and engagement. The participants were college instructors who taught at least one course during the specified academic year, selected using proportionate random sampling methods. Data were collected through a self-administered questionnaire, developed by the researcher, comprising sections on demographic profiles, research capability, research engagement, and barriers experienced in conducting research. The statistical analyses included frequency, percentage, mean, standard deviation, Pearson correlation, and regression analysis, with a focus on examining moderation effects. Through this comprehensive approach, the study aimed to provide valuable insights into the interplay between demographic factors, research capability, and engagement among college instructors, contributing to a better understanding of research practices in the academic setting.

RESULTS AND DISCUSSION

This section presents the results with the analysis, interpretation, implications, and support. The presentation is according to the objectives of the study.

Profile of the Respondents

The majority of respondents (81.1%) were aged between 20 to 40 years, with females comprising the larger gender proportion. Most (60.1%) had 0 to 3 years of service, and 44.6% completed coursework equivalent to a Master of Arts degree. While 39.2% had not completed any research projects, 55.4% had completed 1 to 3 projects. However, a significant portion had not published (79.1%) or presented (51.4%) any research. Additionally, the majority had not cited any papers (84.5%) or received research incentives (88.5%). These findings underscore the need to enhance research productivity and dissemination efforts among respondents. Cocal (2019) emphasized that robust professional development programs specifically designed for community college instructors play a crucial role in strengthening research engagement. His study highlights how targeted training initiatives can equip faculty members with the necessary skills, motivation, and institutional support to actively participate in research and scholarly activities, ultimately improving overall research output.

Level of Research Capability

Table 1 presents the findings of the level of research capability of the respondents across three key areas: concept paper writing, data gathering, and writing the final report. The mean scores for each area range from 3.19 to 3.20, with standard deviations (SDs) ranging from 0.57 to 0.61. The total mean measure across all areas was 3.19, with a total SD of 0.59, indicating an overall capable proficiency in research capability among the respondents.

Table 1: Findings of the Level of Research Capability of the Respondents

Research Capability	Mean	SD	Interpretation
Concept Paper Writing	3.19	.60	*Capable*
Data Gathering	3.20	.61	*Capable*
Writing the Final Report	3.19	.57	*Capable*
Total Measure	**3.19**	**.59**	***Capable***

Note: 3.26-4.00 Highly Capable

2.51-3.25 *Capable*
1.76-2.50 *Poorly Capable*
1.00-1.75 *Very Poorly Capable*

This result suggested that respondents exhibited a consistent level of capability across the different stages of the research process. Specifically, they demonstrated a capable proficiency in formulating research concepts, gathering data, and writing final reports. Notably, while there may be slight variations in proficiency levels across specific indicators within each area, the overall trend indicates a solid foundation in research methodology, critical thinking, and communication skills among the surveyed population.

According to Huenneke et al. (2017), universities, including community colleges, are exploring ways to increase research-related revenues and activities, despite the inherent tension this may cause with their traditional focus on teaching.

Level of Research Engagement

Table 2 presents the findings of the level of research engagement of the respondents across various aspects of research engagement: planning, processing, collaborating, presenting, and publishing.

Table 2: Level of Research Engagement of the Respondents

Research Engagement	Mean	SD	Interpretation
Planning	3.31	.60	*Highly Engaged*
Processing	3.36	.60	*Highly Engaged*
Collaborating	3.35	.61	*Highly Engaged*
Presenting	3.27	.61	*Highly Engaged*
Publishing	3.12	.69	*Engaged*
Total Measure	**3.28**	**.63**	***Highly Engaged***

Note: *3.26-4.00* *Highly Engaged*
2.51-3.25 *Engaged*
1.76-2.50 *Poorly Engaged*
1.00-1.75 *Very Poorly Engaged*

The mean scores for each aspect range from 3.12 to 3.36, with a total mean measure of 3.28 and a standard deviation (SD) of 0.63, indicating a highly engaged level of research engagement among the respondents. The local community college instructors in Misamis Oriental perceived themselves as highly engaged in research, expressing a strong sense of involvement across the entire research process. This commitment extends beyond mere participation; it encompasses a proactive approach to conducting research, mentoring students, and contributing to the academic discourse through publications and presentations.

Notably, planning, processing, and collaborating aspects scored particularly high, with mean scores of 3.31, 3.36, and 3.35, respectively, indicating a highly engaged level of participation in these areas. This suggested that the respondents were actively involved in planning, processing, and collaborating on research activities, demonstrating a proactive and collaborative approach to research engagement.

Additionally, presenting also scored high with a mean score of 3.27, indicating a highly engaged level of participation in presenting research findings. This suggested that the respondents are confident and proactive in sharing their research outcomes with various audiences, contributing to knowledge dissemination and scholarly communication.

Within the various domains of research engagement, the domain of publishing exhibited a marginally lower mean score of 3.12. This score reflected an engaged level among the participants. A contributing factor to this lower score was the significant proportion of respondents who have not published any research projects.

The findings underscored the high level of research engagement among the respondents across various facets of the research process. The impact of research engagement on community colleges is further highlighted by the research synthesis conducted by Chittum, Enke, and Finley (2022), which provided a qualitative analysis of the scope of research characterizing the evidence on community-based and civic engagement in higher education.

Significant Difference in the Instructors' Level of Research Capability

The findings revealed notable disparities in research capability among instructors based on age, with those aged 20-40, exhibiting higher proficiency across all measured aspects compared to older counterparts. Moreover, significant differences were observed based on the length of service, with instructors having 0-3 years of service demonstrating superior capability. However, no significant distinctions were found between male and female instructors or among varying levels of educational attainment. Notably, instructors who have published research papers or presented research projects showcased enhanced capability, emphasizing the importance of scholarly dissemination. Additionally, engaging with existing literature through citations correlated with improved research capability.

Conversely, receiving a research incentive did not significantly impact capability levels. This aligns with the findings of Guido and Orleans (2020), who, in their comparative analysis of research productivity in the Philippines, highlighted that while incentives such as faculty promotion and degree requirements may encourage publication output, they do not necessarily enhance the intrinsic research capabilities of instructors.

Significant Difference in Instructors' Level of Research Engagement

The findings highlighted significant variations in research engagement among instructors, particularly based on age and length of service. Instructors aged 20-40 exhibited notably higher levels of engagement across various dimensions compared to their older counterparts, with significant differences observed in planning, processing, collaborating, presenting, and overall engagement. Conversely, no substantial differences were found between male and female instructors or among varying levels of educational attainment. Notably, instructors with fewer years of service demonstrated higher engagement levels, particularly those with 0-3 years of experience. Moreover, instructors who have published research papers or presented research findings showcased increased engagement, indicating the importance of scholarly dissemination activities. Similarly, engaging with existing literature through citations correlated with higher levels of research engagement. On the other hand, research incentives did not significantly influence engagement levels. This aligns with the perspective of Filipino authors like Medina (2019), who emphasized the vital role of research and extension in the community engagement efforts of State Universities and Colleges (SUCs) in the Philippines.

Significant Relationship between Research Capability and Research Engagement

Table 3 shows the results of the correlation analysis examining the relationship between instructors' level of research capability and their research engagement across various dimensions.

The correlation coefficients (r-values) obtained from the analysis indicated strong positive correlations between research capability and research engagement across all dimensions, with all p-values being highly significant ($p<.001$). This suggested that instructors who demonstrated higher levels of research capability were also more likely to exhibit greater engagement in various research-related activities.

Table 3: Test of Relationship[1] between the Instructors' Level of Research Capability and their Research Engagement

Research Engagement	Research Capability											
	Concept Paper Writing			Data Gathering			Writing a Final Report			Total Measure		
	R-value	(p-value)	Remarks	R-value	(p-value)	Remarks	R-value	(p-value)	Remarks	R-value	(p-	Remarks
Planning	.686***	(.000)	S	.751***	(.000)	S	.819***	(.000)	S	.796***	(.000)	S
Processing	.673***	(.000)	S	.725***	(.000)	S	.769***	(.000)	S	.765***	(.000)	S
Collaborating	.630***	(.000)	S	.686***	(.000)	S	.713***	(.000)	S	.716***	(.000)	S
Presenting	.618***	(.000)	S	.677***	(.000)	S	.742***	(.000)	S	.719***	(.000)	S
Publishing	.470***	(.000)	S	.556***	(.000)	S	.500***	(.000)	S	.541***	(.000)	S

Total Measure	.695*** (.000)	S	.768*** (.000)	S	.798*** (.000)	S	.798*** (.000)	S

Note: *[1]based on Pearson Correlation Analysis* ****significant at .001 level*

The strong positive correlations observed implied that proficiency in key research skills, such as synthesizing research findings, analyzing data, writing comprehensive reports, and aligning research with existing theories, is closely associated with active engagement in planning, processing, collaborating, presenting, and publishing research outcomes. Instructors who excelled in these research capabilities were more likely to be actively involved in planning and executing research projects, collaborating with peers and experts, presenting their findings effectively, and disseminating their research through publications.

A strong positive relationship was observed, indicating that instructors with higher levels of research capability tend to be more engaged in research activities. This suggested that enhancing the research skills of instructors could lead to increase research engagement, which in turn, can contribute to the overall quality of education. According to Agatep and Villalobos (2020), research capabilities among graduate school students in the Philippines, which include community college instructors, are significantly linked to their engagement in research activities.

Influence of Research Capability on Research Engagement

Table 4 presents the results of a simple regression analysis examining the influence of research capability on the research engagement of the respondents. The regression model includes a constant term and the predictor variable "Research Capability."

Table 4: Simple Regression Analysis of Testing the Influence of Research Capability on the Research Engagement of the Respondents

Predictor	**Unstandardized Coefficients**		**Beta**	**t-value**	**p-value**	**Remark**
	B	Std. Error				
Constant	.513	.175	--	2.939**	.004	*Significant*
Research Capability	.868	.054	.798	16.012***	.000	*Significant*

Note: $R^2 = .637$ *ANOVA for Regression: F=256.380, p<.001*

****significant at .001 level* ***significant at .01 level*

Fitted Regression Model: $\hat{Y} = .513 + .868 * (Research\ Capability)$

The unstandardized coefficients indicated that for every unit increase in research capability, there is a corresponding increase of 0.868 units in research engagement. The beta coefficient, which measures the standardized effect size, was 0.798, indicating a strong positive relationship between research capability and research engagement.

The statistical results revealed that both the constant term and the coefficient for research capability are significant predictors of research engagement, with p-values of .004 and .000 respectively. The t-value for research capability was 16.012, indicating that the coefficient was significantly different from zero. The overall regression model was highly significant (F=256.380, p<.001), with an R-squared value of .637, suggesting that approximately 63.7% of the variability in research engagement can be explained by variations in research capability. According to Agatep and Villalobos, the research capabilities of those who are community college instructors in the Philippines, have a direct impact on their level of engagement in research activities.

Table 5 presents the results of a multiple regression analysis examining the influence of different components of research capability on research engagement among the respondents.

Table 5: Multiple Regression Analysis of Testing the Influence of Research Capability on the Research Engagement of the Respondents

Predictor	**Unstandardized Coefficients**		**Beta**	**t-value**	**p-value**	**Remark**
	B	Std. Error				
Constant	.481	.170	--	2.830**	.005	*Significant*
Concept Paper Writing	-.073	.102	-.070	-.711	.478	*Not significant*

Data Gathering	.370	.100	.380	3.687***	.000	*Significant*
Writing a Final Report	.580	.099	.539	5.887***	.000	*Significant*

Note: *Adjusted R^2 = .666* *ANOVA for Regression: F=98.907, p<.001*

****significant at .001 level* ***significant at .01 level*

Fitted Regression Model: $\hat{Y} = .481 + .370 * (Data\ Gathering) + .580 * (Writing\ a\ Final\ Report$

The results showed that Data Gathering (B=0.370) and Writing a Final Report (B=0.580) were significant predictors of research engagement, with p-values of .000. This indicated that for every unit increase in Data Gathering and Writing a Final Report capability, there is a corresponding increase in research engagement by 0.370 units and 0.580 units, respectively. However, Concept Paper Writing (B=-0.073) was not a significant predictor of research engagement, as evidenced by its p-value of .478.

The beta coefficients indicated the standardized effect size of each predictor variable on research engagement. Both data gathering and writing a final report have significant standardized coefficients, suggesting that they have a stronger influence on research engagement compared to concept paper writing.

The overall regression model was highly significant (*F=98.907, p<.001*), indicating that the combined effect of the predictor variables on research engagement was significant. The adjusted R-squared value of .666 suggested that approximately 66.6% of the variability in research engagement can be explained by variations in the predictor variables.

Alcazaren et al. (2021) highlighted the importance of research capability in influencing research engagement among instructors in the Philippines.

Moderating Effect of Demographics on the Relationship between Research Capability and Research Engagement

Table 6 presents the results of a regression analysis aimed at examining whether age acts as a moderator variable in the relationship between research capability and research engagement.

Table 6: Regression Analysis to Examine if Age Presents a Moderator Variable for the Relationship Between Research Capability and Research Engagement

Model	**Coefficients[a]**			**t-value**	**p-value**	**Remarks**
	Unstandardized Coefficients		**Standardized Coefficients**			
	B	S.E.	*β*			
(Constant)	-.176	.115	--	-1.537	.127	*Not significant*
X_1: Age (20-40)	.244	.126	.096	1.932	.055	*Not significant*
X_2: Research Capability	.975	.085	.975	11.426***	.000	*Significant*
X_3: Interaction (X_1*X_2)	-.297	.104	-.239	-2.853**	.005	*Significant*

Note: *[a]Dependent Variable: Research Engagement AdjustedR^2=.664*

ANOVA for Regression: F=97.632, p<.001 Age=41+ as reference category

****p<.001* ***p<.05*

The model includes three predictor variables: age (20-40), research capability, and their interaction term (X1 * X2), along with a constant term.

The coefficients indicated the strength and direction of the relationship between each predictor variable and research engagement. The constant term (-.176) represented the baseline level of research engagement when all predictor variables are zero.

The results showed that research capability had a significant positive effect on research engagement (*B=.975, p<.001*), indicating that an increase in research capability was associated with a corresponding increase in research engagement. However, the coefficient for Age (20-40) was not significant (*B=.244, p=.055*), suggesting that age alone does not significantly influence research engagement.

Of particular interest was the interaction term (X_1*X_2), which represented the combined effect of age and research capability on research engagement. The negative coefficient (-.297) for the interaction term was significant (p=.005), indicating that the relationship

between research capability and research engagement was moderated by age. This suggested that the impact of research capability on research engagement varies depending on the age group.

The adjusted R-squared value of .664 indicated that approximately 66.4% of the variability in research engagement can be explained by variations in the predictor variables in the model. The overall regression model was highly significant (*F=97.632, p<.001*), suggesting that the model as a whole was a good fit for the data.

These findings suggested that while research capability significantly influences research engagement, the relationship was moderated by age. This implied that interventions aimed at enhancing research capability may need to be tailored based on the age group of faculty members..

Table 7 displays the results of a regression analysis investigating whether sex acts as a moderator variable in the relationship between research capability and research engagement.

Table 7: Regression Analysis to Examine if Sex Presents a Moderator Variable for the Relationship Between Research Capability and Research Engagement

Model	Coefficients[a]			t-value	p-value	Remarks
	Unstandardized Coefficients		Standardized Coefficients			
	B	S.E.	β			
(Constant)	-048	.067	--	-.708	.480	*Not significant*
X_1: Sex (Male)	.112	.100	.056	1.121	.264	*Not significant*
X_2: Research Capability	.838	.066	.838	12.791***	.000	*Significant*
X_3: Interaction (Male*Research Capability)	-.103	.101	-.067	-1.020	.309	*Not significant*

Note: *[a]Dependent Variable: Research Engagement AdjustedR^2=.635*
ANOVA for Regression: F=86.367, p<.001 Female as reference category

The coefficients provided insights into the strength and direction of the relationship between each predictor variable and research engagement. The constant term (-.048) represented the baseline level of research engagement when all predictor variables were zero.

The results indicated that research capability had a significant positive effect on research engagement (*B=.838, p<.001*), suggesting that an increase in research capability is associated with a corresponding increase in research engagement. However, the coefficient for Sex (Male) was not significant (*B=.112, p=.264*), indicating that sex alone did not significantly influence research engagement.

The particular interest was the interaction term (Male * Research Capability), which represented the combined effect of sex and research capability on research engagement. The coefficient for this interaction term (-.103) was not significant (p=.309), suggesting that the relationship between research capability and research engagement was not moderated by sex.

The adjusted R-squared value of .635 indicates that approximately 63.5% of the variability in research engagement can be explained by variations in the predictor variables in the model. The overall regression model was highly significant (*F=86.367, p<.001*), indicating that the model as a whole was a good fit for the data. According to Bowling and Burns (2015), while sex can moderate relationships between certain predictor variables and outcomes such as counterproductive work behaviors, it does not universally serve as a moderator across all domains.

Table 8 presents the results of a regression analysis examining whether length of service acts as a moderator variable in the relationship between research capability and research engagement.

Table 8: Regression Analysis to Examine if Length of Service Presents a Moderator Variable for the Relationship Between Research Capability and Research Engagement

Model	Coefficients[a]			t-value	p-value	Remarks
	Unstandardized Coefficients		Standardized Coefficients			
	B	S.E.	β			
(Constant)	.098	.149	--	.659	.511	*Not significant*
X_1: Length of Service (0-3)	-.007	.162	-.004	-.046	.963	*Not significant*
X_2: Length of Service (4-7)	-.228	.177	-.104	-1.293	.198	*Not significant*
X_3: Research Capability	.807	.136	.807	5.922	.000	*Significant*
X_4: Interaction (X_1*X_3)	-.160	.153	-.112	-1.044	.298	*Not significant*
X_5: Interaction (X_2*X_3)	.127	.160	.076	.791	.430	*Not significant*

Note: *[a]Dependent Variable: Research Engagement Adjusted R^2=.656*
ANOVA for Regression: F=57.102, p<.001
Length of Service=8+ as reference category ***p<.001*

The coefficients revealed the strength and direction of the relationship between each predictor variable and research engagement. The constant term (.098) represented the baseline level of research engagement when all predictor variables were zero. The results indicated that research capability has a significant positive effect on research engagement (*B=.807, p<.001*), indicating that higher research capability was associated with increased research engagement. However, none of the coefficients for length of service or its interaction terms were significant, suggesting that length of service did not significantly moderate the relationship between research capability and research engagement.

The adjusted R-squared value of .656 suggested that approximately 65.6% of the variability in research engagement can be explained by variations in the predictor variables included in the model. The overall regression model was highly significant (*F=57.102, p<.001*), indicating that the model as a whole was a good fit for the data.

Table 9 presents the results of a regression analysis examining whether the highest educational attainment acts as a moderator variable in the relationship between research capability and research engagement.

Table 9: Regression Analysis to Examine if Highest Educational Attainment Presents a Moderator Variable for the Relationship Between Research Capability and Research Engagement

Model	Coefficients[a]			t-value	p-value	Remarks
	Unstandardized Coefficients		Standardized Coefficients			
	B	S.E.	β			
(Constant)	-.155	.102	--	-1.515	.132	*Not significant*
X_1: Education (Bachelor)	-.042	.162	-.015	-.258	.797	*Not significant*
X_2: Education (MA Unit)	.332	.124	.166	2.683**	.008	*Significant*
X_3: Education (Master degree)	.118	.147	.048	.805	.422	*Not significant*
X_4: Research Capability	.999	.073	.999	13.711***	.000	*Significant*

X_5: (X_1*X_4)	Interaction	-.397	.194	-.105	-2.045*	.043	*Significant*
X_6: (X_2*X_4)	Interaction	-.344	.109	-.197	-3.144**	.002	*Significant*
X_7: (X_3*X_4)	Interaction	-.295	.133	-.127	-2.225*	.028	*Significant*

Note: *[a]Dependent Variable: Research Engagement R^2=.680*
ANOVA for Regression: F=45.678, p<.001
Education=Doctoral unit or higher as reference category
****p<.001 **p<.01 *p<.05*

The coefficients indicated the strength and direction of the relationship between each predictor variable and research engagement. The constant term (-.155) represented the baseline level of research engagement when all predictor variables were zero.

The results revealed that research capability had a significant positive effect on research engagement (B=.999, p<.001), indicating that higher research capability was associated with increased research engagement. Furthermore, the coefficients for the interaction terms between education and research capability were significant, suggesting that the effect of research capability on research engagement varied depending on the level of education.

The adjusted R-squared value of .680 suggested that approximately 68.0% of the variability in research engagement can be explained by variations in the predictor variables included in the model.

The overall regression model was highly significant (F=45.678, p<.001), indicating that the model as a whole was a good fit for the data. This aligns with the findings of Vallescas and Oted (2023), who highlighted that instructors' level of education significantly correlates with their research engagement. Their study reinforces the idea that academic qualifications may play a crucial role in shaping faculty members' involvement in research activities.

They emphasized that instructors with higher educational qualifications tend to engage more actively in research activities, suggesting that advanced degrees may enhance both the capability and the motivation to pursue research.

Table 10 presents the results of a regression analysis aimed at investigating whether the number of research completed acts as a moderator variable in the relationship between research capability and research engagement. The coefficients provided insights into the strength and direction of the relationship between each predictor variable and research engagement. The constant term (-.057) represented the baseline level of research engagement when all predictor variables were zero.

Table 10: Regression Analysis to Examine if Number of Research Completed Presents a Moderator Variable for the Relationship Between Research Capability and Research Engagement

	Coefficients[a]					
Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t-value**	**p-value**	**Remarks**
	B	S.E.	*β*			
(Constant)	-.057	.063	--	-.908	.365	*Not significant*
X_1: Research Completed=none	.129	.101	.063	1.284	.201	*Not significant*
X_2: Research Capability	.875	.062	.875	14.108***	.000	*Significant*
X_3: Interaction (X_1*X_2)	-.198	.102	-.120	-1.930	.056	*Not significant*

Note: *[a]Dependent Variable: Research Engagement R^2=.643*
ANOVA for Regression: F=89.386, p<.001 Research Completed=1+ as reference category
****p<.001*

The results indicated that research capability had a significant positive effect on research engagement (*B=.875, p<.001*), suggesting that higher research capability was associated with increased research engagement. However, the coefficient for the

interaction term (X_1*X_2) was not statistically significant (*B=-.198, p=.056*), indicating that the impact of research capability on research engagement did not significantly vary based on the number of research completed.

The adjusted R-squared value of .643 indicated that approximately 64.3% of the variability in research engagement can be explained by the variations in the predictor variables included in the model. The overall regression model was highly significant (*F=89.386, p<.001*), indicating that the model as a whole provided a good fit for the data. This indicates that research capability is determined by factors such as training, critical thinking skills, and institutional support rather than the number of research projects completed.

Table 11 presents the results of a regression analysis investigating whether the number of research published acts as a moderator variable in the relationship between research capability and research engagement.

Table 11: Regression Analysis to Examine if Number of Research Published Presents a Moderator Variable for the Relationship Between Research Capability and Research Engagement

Model	Coefficients[a]			t-value	p-value	Remarks
	Unstandardized Coefficients		Standardized Coefficients			
	B	S.E.	*β*			
(Constant)	.023	.143	--	.160	.873	*Not significant*
X_1: Research Published=none	-.022	.154	-.009	-.144	.886	*Not significant*
X_2: Research Capability	.763	.144	.763	5.306***	.000	*Significant*
X_3: Interaction (X_1*X_2)	.041	.155	.036	.262	.793	*Not significant*

Note: *[a]Dependent Variable: Research Engagement R^2=.630*

ANOVA for Regression: F=84.353, p<.001 Research Published=1+ as reference category

****p<.001*

The coefficients showed the strength and direction of the relationship between each predictor variable and research engagement. The constant term (.023) represented the baseline level of research engagement when all predictor variables were zero.

The results indicated that research capability had a significant positive effect on research engagement (B=.763, p<.001), suggesting that higher research capability was associated with increased research engagement. However, the coefficient for the interaction term (X1*X2) was not statistically significant (B=.041, p=.793), indicating that the impact of research capability on research engagement did not significantly vary based on the number of research published. This finding implies that an instructor's research engagement is not necessarily enhanced by a higher number of published works, suggesting that factors beyond publication volume—such as institutional support, motivation, or access to research resources—may play a more critical role.

The adjusted R-squared value of .630 indicates that approximately 63.0% of the variability in research engagement can be explained by the variations in the predictor variables included in the model. The overall regression model is highly significant (F=84.353, p<.001), indicating that the model as a whole provides a good fit for the data.

Table 12 presents the results of a regression analysis examining whether the number of research presented acts as a moderator variable in the relationship between research capability and research engagement.

Table 12: Regression Analysis to Examine if Number of Research Presented Presents a Moderator Variable for the Relationship Between Research Capability and Research Engagement

Model	Coefficients[a]			t-value	p-value	Remarks
	Unstandardized Coefficients		Standardized Coefficients			
	B	S.E.	*β*			
(Constant)	.017	.073	--	.231	.818	*Not significant*
X_1: Research Presented=none	-.013	.101	-.006	-.125	.901	*Not significant*

X_2: Research Capability	.713	.087	.713	8.187***	.000	*Significant*
X_3: Interaction (X_1*X_2)	.128	.107	.103	1.197	.233	*Not significant*

Note: *[a]Dependent Variable: Research Engagement* R^2*=.633*

ANOVA for Regression: F=85.608, p<.001 Research Presented=1+ as reference category ***p<.001*

The coefficients showed the strength and direction of the relationship between each predictor variable and research engagement. The constant term (.017) represented the baseline level of research engagement when all predictor variables were zero.

The results indicated that research capability had a significant positive effect on research engagement (B=.713, p<.001), suggesting that higher research capability was associated with increased research engagement. However, the coefficient for the interaction term (X_1*X_2) was not statistically significant (B=.128, p=.233), indicating that the impact of research capability on research engagement did not significantly vary based on the number of research presented. This finding implies that merely presenting research does not substantially alter the relationship between research capability and engagement. It suggests that factors such as mentorship, institutional support, and intrinsic motivation may play a more decisive role in fostering meaningful research involvement.

The adjusted R-squared value of .633 indicated that approximately 63.3% of the variability in research engagement can be explained by the variations in the predictor variables included in the model. The overall regression model was highly significant (F=85.608, p<.001), indicating that the model as a whole provided a good fit for the data.

Furthermore, while research capability significantly influenced research engagement, the number of research presented did not act as a moderator variable in this relationship. This suggested that the effect of research capability on research engagement remained consistent regardless of the number of research presentations conducted by the instructors. This indicates that research capability plays a stable role in shaping research engagement, irrespective of how frequently instructors present their studies.

Table 13 displays the outcomes of a regression analysis investigating whether the number of papers cited serves as a moderator variable in the association between research capability and research engagement.

Table 13: Regression Analysis to Examine if Number of Papers Cited Presents a Moderator Variable for the Relationship Between Research Capability and Research Engagement

Model	**Coefficients[a]**			**t-value**	**p-value**	**Remarks**
	Unstandardized Coefficients		**Standardized Coefficients**			
	B	S.E.	β			
(Constant)	-.007	.145	--	-.051	.960	*Not significant*
X_1: Papers Cited=none	.004	.155	.001	.026	.979	*Not significant*
X_2: Research Capability	.845	.151	.845	5.602***	.000	*Significant*
X_3: Interaction (X_1*X_2)	-.055	.160	-.050	-.340	.734	*Not significant*

Note: *[a]Dependent Variable: Research Engagement* R^2*=.630*

ANOVA for Regression: F=84.410, p<.001 Papers Cited=1+ as reference category ***p<.001*

The coefficients demonstrated the magnitude and direction of the relationship between each predictor variable and research engagement. The constant term (-.007) denoted the baseline level of research engagement when all predictor variables were zero.

The results revealed that research capability exerted a significant positive impact on research engagement (B=.845, p<.001), indicating that higher research capability was linked with increased research engagement. However, the coefficient for the interaction term (X_1*X_2) was not statistically significant (B=-.055, p=.734), suggesting that the influence of research capability on research engagement was not significantly affected by the number of papers cited. This indicates that the extent to which research capability influences engagement remains stable, regardless of citation frequency.

The adjusted R-squared value of .630 implied that approximately 63.0% of the variability in research engagement can be accounted for by the variations in the predictor variables included in the model. The overall regression model was highly significant (F=84.410, p<.001), indicating that the model provided a good fit for the data.

Table 14 presents the results of a regression analysis aimed at exploring whether the amount of research incentive acts as a moderator variable in the relationship between research capability and research engagement.

The coefficients provided offered insights into the direction and strength of the relationship between each predictor variable and research engagement. The constant term (-.113) indicated the expected level of research engagement when all predictor variables were set to zero.

Table 14: Regression Analysis to Examine if Amount of Research Incentive Presents a Moderator Variable for the Relationship Between Research Capability and Research Engagement

Model	Coefficients[a]			t-value	p-value	Remarks
	Unstandardized Coefficients		Standardized Coefficients			
	B	S.E.	β			
(Constant)	-.113	.152	--	-.743	.458	*Not significant*
X_1: Research Incentive=none	.125	.161	.040	.776	.439	*Not significant*
X_2: Research Capability	.910	.208	.910	4.366***	.000	*Significant*
X_3: Interaction (X_1*X_2)	-.116	.215	-.112	-.540	.590	*Not significant*

Note: [a]*Dependent Variable: Research Engagement* R^2*=.631*

ANOVA for Regression: F=84.968, p<.001 Research Incentive=1000+ as reference category

****p<.001*

The findings indicated that research capability exhibited a statistically significant positive influence on research engagement (*B=.910, p<.001*), suggesting that higher research capability was associated with increased research engagement among instructors. However, the coefficient for the interaction term (X1*X2) was not statistically significant (B=-.116, p=.590), indicating that the effect of research capability on research engagement was not significantly influenced by the amount of research incentive provided. This finding suggests that research incentives alone do not substantially alter the relationship between research capability and engagement. It implies that intrinsic motivation, institutional support, and access to research resources may be more critical in driving meaningful research participation than financial or material incentives.

The adjusted R-squared value of .631 suggested that approximately 63.1% of the variability in research engagement can be explained by the variation in the predictor variables included in the model. Furthermore, the overall regression model was highly significant (*F=84.968, p<.001*), indicating that the model provided a good fit for the data.

CONCLUSION

The relationship between research capability and research engagement was further refined by the moderating effects of age and highest educational attainment. Hence, research capability was intrinsically linked to research engagement among local community college instructors. This relationship was moderated by individual factors such as age and educational attainment, which can either facilitate or hinder the translation of capability into engagement. Bandura's Social Cognitive Theory offers a valuable framework for understanding how instructors can harness their capabilities to engage in research, suggesting that fostering an environment that supports these capabilities could lead to more profound research engagement. This, in turn, has the potential to create a vibrant academic community that values and actively participates in research, contributing to the collective knowledge and advancement of educational practices.

REFERENCES

1) Agatep, J. L. E., & Villalobos, R. N. (2020). Research capabilities among selected Graduate School students in Philippines. Science Insights Education Frontiers, 6(2), 691–705. https://doi.org/10.15354/sief.20.or037

2) Alcazaren, A. B., & Robiños, B. C. (2022). Research characteristics and attitudes among faculty members: A Philippine context. Philippine Journal of Educational Research, 8(1), 1-13 . https://doi.org/10.54476/ioer-imrj/76078
3) Bowling, N. A., & Eschleman, K. J. (2010). Employee personality as a moderator of the relationships between work stressors and counterproductive work behavior. Journal of Occupational Health Psychology, 15(1), 91–103. https://doi.org/10.1037/a0017326
4) Chittum, J. R., Enke, K. A. E., & Finley, A. P. (2022). The effects of community-based and civic engagement in higher education. American Association of Colleges and Universities. https://www.aacu.org/research/the-effects-of-community-based-engagement-in-higher-education
5) Cocal, C. J. (2019). Challenges and strategies on paper publication to international indexed journals by Filipino academic researchers. The Asian ESP Journal, 14(7.2), 113-131. https://www.researchgate.net/publication/
6) Guido, R. M. D., & Orleans, A. V. (2020). Philippine research productivity in education research: A comparative performance in Southeast Asia. Asia Pacific Journal of Multidisciplinary Research, 8(4), 76-90.
7) Lee, J. J., & Field, R. (2011). Faculty research engagement and satisfaction. Journal of Higher Education, 82(3), 393-418.
8) Huenneke, L. F., Eaton, C. D., Long, T., Merrill, J., & Newell, S. (2017). The role of collaborative inquiry and shared leadership in advancing STEM faculty diversity. Change: The Magazine of Higher Learning, 49(5), 36-45. https://doi.org/10.1046/j.1523-1739.1992.06030324.x
9) Medina, B. O. (2019). Community engagement of state universities and colleges in the Philippines: Towards socially and culturally responsible research and extension initiatives. International Journal of Advanced Research and Publications, 3(4), 26-34. http://www.ijarp.org/published-research-papers/apr2019/Community-Engagement-Of-State-Universities-And-Colleges-In-The-Philippines-Towards-Socially-And-Culturally-Responsible-Research-And-Extension-Initiatives.pdf
10) Medina, R. L. (2019). Research and extension in Philippine state universities and colleges: Towards a framework for community engagement. Philippine Higher Education Research Journal, 1(1), 45-60.
11) Vallescas, J., & Oted, J. (2023). Research Capability and Engagement Among Public Elementary Teachers. Journal of Educational Research in Developing Areas, 2(1), 34-45.
12) Villalobos, R. N. (2020). Research capabilities among selected graduate school students in the Philippines. Science Insights Education Frontiers, 6(2), 691-705. https://doi.org/10.15354/sief.20.or037

There is an Open Access article, distributed under the term of the Creative Commons Attribution – Non Commercial 4.0 International (CC BY-NC 4.0) (https://creativecommons.org/licenses/by-nc/4.0/), which permits remixing, adapting and building upon the work for non-commercial use, provided the original work is properly cited.