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### RESEARCH ARTICLE

#### PREDICTORS OF RESEARCH CULTURE IN CITY SCHOOLS DIVISIONS AND ITS INFLUENCE TO TEACHER PERFORMANCE

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#### Abstract

This study was conducted to determine the predictors of research culture in city schools division in Laguna and its influence to teacher performance. A total of 898 elementary teachers of public schools in the City Schools Divisions of Binan, Cabuyao, Calamba and Sta. Rosa participated in the study. The major tool in gathering the data was an adopted questionnaire checklist composed of five parts; a. Teacher-Related Factors : b. School-Related Factors; c. Contextual Variable; d. Research Culture; e. Teachers' Performance in Research. The study utilized the descriptive method of research. The method was used since the purpose of the study was to find out the predictors of research culture such as the teacher-related factors, school-related factors and contextual variable and their influence to students and teachers performance. It also employed quantitative approach that used frequency and percentage distribution, simple mean and Pearson correlation coefficient. Based on the results, Teacher-related factors, school factors and constraints variable are found to be predictors of research culture described by research behavior, research climate and research policy wherein teacher related factors have the greatest overall effect in both research behavior and research climate while school factors have the highest percentage of effect to research policy. Along teacher factors, skills greatly affected both research behavior and research climate. Therefore, it is concluded that teacher-related factors are the most influential and have the highest percentage of effect in research culture while school related factors only affect research policy which is a part of research culture; and research culture has not significantly influenced teachers' research performance. Hence, it is recommended that rewards and recognition in any form may be given to teacher-researchers who would represent the school in research forums and become research speakers during enhancement training or capability building; and the proposed action plan may be adopted for research implementation.

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**Introduction:-**

There are many researches that have been done about teaching and learning process (Hine, 2013)[1]. Some were about teacher education and how quality of instruction was being affected. Authors believed that teachers play an important role in improving education through addressing classroom problems and taking actions on these. In other words, teachers are the key agents of change who take different roles in helping students learn. Through researches, these problems encountered in the educational system are being addressed, thus, upgrading of teaching and learning process is achieved.

In the Philippines, the Department of Education has ordered school heads and administrators across the country to adopt the “enclosed Basic Education Research Agenda” which promotes the conduct of research in schools by teachers (DepEd Order No.39,s.2016). The purpose is to discover schools’ issues and solutions and form a part of teachers’ professional development and skills enhancement. By doing research, teachers are believed to improve their teaching practices for the betterment of the school and of the students’ learning.

In addition, DepEd Order No. 16, s. 2017 also known as Research Management Guidelines, provides guidance in the management and conduct of research initiatives at the national, regional, schools division, and school levels to further promote and strengthen the culture of research in basic education. This policy also covers instructions for eligible DepEd employees in availing of research funds. Although educational institutions in the Philippines have encouraged their teachers to be involved in research, as it is seen to be useful for their professional development (Morales,2016)[2]and to their teaching career, teachers are confronted with many issues that affect their motivation to undertake research.

As emphasized by the Department of Education (DepED), doing research has become one of the important professional development programs for teachers. Teachers both from private and public institutions are encouraged to conduct action research in order to identify and address the teaching and learning issues and concerns in the classrooms and in the school. Thus, doing research has become a part of every teacher’s teaching evaluation and performance appraisal at the end of the school year (Ullah, 2016)[3].

The importance of doing research in the professional development of teachers and in their practices has been widely acknowledged in the literature. For one, it equips teachers and other education practitioners with the skills necessary for identifying what the problem is in a school, and knowing how to address that problem systematically (Hine, 2013). Two, it serves as an opportunity for educators to self-evaluate their teaching practices (Hong and Lawrence, 2011)[4]. Three, it allows teachers to make a change in their pedagogical practices that will have a positive impact upon teaching and learning (Mahani, 2012)[5].

However, despite its positive effects upon classroom teaching and learning, a number of studies have reported some factors that prevent teachers from doing research. Crowded teaching timetables, heavy teaching workloads (Kutlay, 2013; Morales, 2016) insufficient research training (Ellis &Loughland, 2016)[6], lack of research skills (Vasquez, 2017), lack of financial support (Biruk, 2013) and limited time to do research (Norasmah& Chia, 2016)[7] often constitute the primary challenges and concerns faced by teachers and other educators aspiring to undertake research.

Thus, this study will examine the condition of research culture in the elementary level. This will also find out how the research culture in the school is affected by the given predictors and its impact on teachers’ performance.

**Material and Methods:-**

This research work employed the correlational-predictive research design. It is used in cases when there is an interest to identify predictive relationship between the predictors and the outcome variable according to Walliman (2017). In this research design, it predicts the variance of one or more variables based on the variance of another variable. However, these variables are not manipulated, but they occur naturally. Quantitative approach was employed such as frequency and percentage distribution, simple mean, Pearson correlation coefficient.

The respondents of the study were the 1227 elementary teachers of the public schools of the City Schools Division of Cabuyao, Calamba, Sta Rosa and Binan. The total population of public elementary school teachers in those four divisions in Laguna is 7105. The researcher got the number of samples using the online sample size calculator (<https://www.surveymonkey.com/mp/sample-size-calculator/>) where 5 percent confidence level was required.

Hence, the sample size was reduced to 1227. With this, stratified sampling method was employed in getting the sample respondents per school. However, for ethical consideration, only those who were interested to participate in the study were considered as the respondents of the study. Response rate of 73.19% was obtained which corresponded to 898 respondents.

Each part of the questionnaire was validated separately. The questions were drafted and were based from different studies and related literature. They were checked and content validated by three experts: the researcher's adviser, Associate Dean, and a research statistician from another university. Content was tested for its clarity, wordiness, overlapping responses, use of jargon, use of technical language, balance of the questions and its relationship to problems using the scale: 4-exceeds expectation; 3-meets expectation; 2-below expectation; 1-not acceptable. After the validation, the computed average score of 3.81 suggested that the questions exceeded expectation.

Additionally, a pilot study, conducted on the questions on attitudes of the respondents, yielded a Cronbach alpha coefficient of 0.93 that indicated a high reliability. Also questions on challenges encountered in research have  $\alpha=0.90$  while questions on motivations have  $\alpha=0.89$ . Moreover, questions on research culture were advised to test reliability using Cronbach's alpha value also to determine the internal consistency or average correlation between items of questions in a research instrument. The computed Cronbach's alpha value of 0.70 was taken and considered acceptable. The same with the questions on school factors which have  $\alpha=0.78$ , also measured acceptable. On the other hand, the self-efficacy questions were tested for reliability using Cronbach's coefficient alpha. Overall, the questionnaire was found to be highly reliable ( $\alpha = .894$ ).

## Results and Discussion:-

This part contains the presentation, analyses and interpretation of data gathered from the respondents, how the data were treated to facilitate interpretation and relationship between and among variables in the study.

**Table 1:-** Demographic profile of the respondents.

Profile	Frequency (N = 898)	Percent
Age		
21-30	313	34.8
31-40	292	32.5
41-50	199	22.1
51-60	90	10
61-65	4	.4
Sex		
Male	126	14.1
Female	772	85.9
Educational Status		
Baccalaureate	666	74.1
Master's	223	24.8
Doctorate	6	.9
Length of Service		
1-10	599	66.6
11-20	192	21.4
21-30	90	10.1
31-40	17	1.9
Position		
Teacher 1	554	66
Teacher 2	115	12.8
Teacher 3	184	20.5
Master Teacher 1	38	4.2
Master Teacher 2	7	.8

As presented in Table 1, majority of the respondents were from ages 40 years old and younger which is almost 69 percent of the total respondents, 772 or 85.9 percent of teachers in the city schools in Laguna were female which is far greater than male teachers with 126 or 14.1% only. More than half of the teacher respondents have baccalaureate

degree yet composed of 666 or 74.1 percent of the total teachers while only 8 or 0.9 percent have doctorate degree. Majority of them ( 66.6 percent) have been in the teaching service for 1 – 10 years, only 17 or 1.9 percent have reached 31 – 40 years in teaching profession and only 33 percent of them are considered seasoned teachers. Many of them are Teacher 1 which confirms that many of them are new to the teaching career as explained by the number of years in their profession and 7 or 0.8 percent of the total respondents are Master Teacher II.

**Table 2:-** Teacher-Respondents Level of Attitude in Research Activity.

Indicators	Mean	Qualitative Description	Rank
1. Attitude in research activities for one to become proficient	3.17	Moderate	5
2. The nitty-gritty of research from start to finish	3.21	Moderate	4
2. This is one's degree of confidence, belief, and thinking attributed to his/her potentials and research capabilities.	3.27	Moderate	2.5
4. Perception of research as a function of both physical and intellectual capitals.	3.28	Moderate	1
5. Extent to which one allows himself/herself to be part of any activity related to research.	3.27	Moderate	2.5
Composite Mean	3.24	Moderate	

Note: N=898; 3.50-4.00-High; 2.50-3.49-Moderate; 1.50-2.49-Low; 1.00 -1.49-Very Low

Table 2 reveals that the teacher-respondents have a moderate attitude in research activity as indicated by its composite mean of 3.24. Moreover, the indicator, perception of research as a function of both physical and intellectual capitals (3.28) was given the greatest evaluation while indicator, attitude in research activities for one to become proficient, (3.17) the least. By doing research, teachers are believed to improve their teaching practices for the betterment of students' learning and for the school; they are school partners in solving school' issues and solutions to the problem, especially those that are related to teaching and learning processes. Therefore, research activity in school collectively builds capacity and intellectual capital for the benefit of all. (Berliner, 2002)[8]. This is the same with the study of Biruk (2013)[9] where teacher-participants held a positive attitude towards research.

Further, it also enables them to be complemented for their high performance in their profession and for the realization of the institution's philosophy, vision, and mission. Teachers can have the opportunity to develop and improve their teaching practices. It enables educators to follow their interests and their needs as they investigate what they and their students do. Teachers who practice research find out that it expands and enriches their teaching skills (Morales, 2016).

**Table 3:-** Teacher-Respondents Level of Self-efficacy in Research Activity.

Indicators	Mean	Qualitative Description	Rank
1. I can easily learn to do research because of our capability building seminar.	3.74	Moderate	5
2. I can figure out anything about research if I try hard enough	3.73	Moderate	6
3. If I practice and tried, I could easily develop my skill in research	3.77	Moderate	3.5
4. I am confident that I will achieve the goals that I set for myself.	3.70	Moderate	7
5. When I am struggling to accomplish research work because it is difficult, I focus on my progress instead of feeling discouraged.	3.66	Moderate	8
6. I will succeed in research and have no regret of the career path I chose	3.77	Moderate	3.5
7. I will succeed in whatever topic I would like to work on.	3.82	Moderate	1.5
8. I believe hard work in doing my research would pay off.	3.82	Moderate	1.5
9. My ability grows with effort.	3.06	Moderate	10
10. I think that no matter who you are, you can do research, it only takes a lot of determination.	3.09	Moderate	9
Composite Mean	3.62	Moderate	

Note: N=898; 4.50 – 5.00, High; 3.50 – 4.49, Moderate; 2.50 – 3.49, Neutral; 1.50 – 2.49, Low; 1.0 – 1.49, Very Low

Table 3 shows the teachers' efficacy in research activity. It can be deduced from the table that teachers have moderate self-efficacy in research, especially on the belief that they will succeed in whatever topic they would like to work on and hard work in doing research would pay off (3.82). The result is the same with the objective of the DepEd where teachers are believed to improve their teaching practices for the betterment of students' learning and for the school when they do research (DepEd, 2016). This may imply that they really would like to be indulged in research activity but needs a hard push because of the lesser evaluation that they gave on the indicators enumerated. But this desire is already a positive attitude towards research which needs more motivation from the school heads. Teachers need support from school management and authorities in order to start doing research (Biruk, 2013).

However, the teacher respondents are not sure whether their ability to do research activity grows with their effort and they can do research only with determination with mean value of 3.06 and 3.09, respectively. Their responses only confirm that they would like to do research but believe that they are inefficient and ineffective in that area. This is in consonance with what has been said by Ullah (2016) that conducting research in the country, especially in the public secondary schools, may be limited since only a few teachers have tried to do it. This is where the teachers should be encouraged. School heads must do something to reorient the teachers about research. Teachers must internalize that those that are involved in research, will see its importance in professional development and in their teaching career (Morales, 2016).

**Table 4:- Teacher-Respondents Level of Motivation in Research Activity.**

Indicators	Mean	Qualitative Description	Rank
1. I am proud that I am a teacher-researcher	3.22	Moderate	2
2. I like to do research which is the goal that I have to set for myself.	3.15	Moderate	5
3. I like to see other researches under as my basis and example when doing my own.	3.18	Moderate	4
4. I mind criticism seriously in my work.	3.03	Moderate	7
5. I envy teachers who receive an award in research.	2.62	Moderate	10
6. I do my best to achieve my maximum level of performance in research.	3.21	Moderate	3
7. I am inspired by the help I get from my co-teachers who are also researchers.	3.26	Moderate	1
8. I stay in school even beyond teaching hours when doing my research activity.	3.13	Moderate	6
9. I never get tired of doing research.	2.95	Moderate	8
10. I still continue my research activity even when I am not in the mood	2.84	Moderate	9
Composite Mean	3.06	Moderate	

Note: N=898; 3.50-4.00-High; 2.50-3.49-Moderate; 1.50-2.49-Low; 1.00 -1.49-Very Low

Table 4 shows the motivation of the teacher-respondents in research activity. The findings show that they have moderate motivation because they are inspired by the help they get from their co-teachers who are also researchers (3.26). In addition, they also agree that they are proud to be a teacher researcher (3.22) and they do their best to achieve maximum level of performance in research (3.21). They also agree on all the indicators given but have given a lesser assessment. This implies implies that they are more motivated when somebody boosts their morale and have someone who will guide and assist them when doing research. In the study of Ricero (2018)[10], the reason of motivation to conduct research wherein the encouragement and support from their superior and co-teachers achieved the highest approval. They feel the need and importance of conducting action research when they receive different forms of support. Dundar and Lewis (2018)[11] also reiterate that recognizing and praising the work of the teacher-researchers do, both the quality of the work and the effort they put into it help in boosting their morale and be motivated in research.

On the other hand, the least assessed idea was that they envy teachers who receive an award in research (2.62). Although, they are moderately motivated and they envy other teachers when they receive awards on research, this is the least thing that they will feel about research. If it is so, then, they are less likely to be mindful of the research

award that they might get and therefore, award is not the best motivating factor in enticing teachers to research. This result is contrary with that of Norasmah (2016)[12] that monetary incentives are not the only viable and effective instrument to induce successful research but awards is considered to further research performance. Awards have certain features that render them attractive in the academic setting. Award givers can subjectively evaluate overall performance, as long as this is done in a transparent and fair way. Further, awards motivate scholars – due to their value in signaling research talent and motivation. It is valued because they convey appreciation and recognition on the part of colleagues and the public. They may thereby raise intrinsic motivation to do research and generate loyalty to the awarding institution.

**Table 5:-** Teacher-Respondents Level of Skills in Research Activity.

Indicators	Mean	Qualitative Description	Rank
1. I am able to develop theoretical concepts and conceptual framework.	3.08	Moderate	3.5
2. I am able to summarize and make conclusions and recommendations.	3.02	Moderate	8.5
3. I am able to formulate statement of the problem.	3.08	Moderate	3.5
4. I can identify the most appropriate Bibliographical resources/references (using APA 6 <sup>th</sup> edition) citations and other sources of relevant information.	3.03	Moderate	7
5. I can demonstrate awareness of issues relating to the rights of researchers, research subjects, and others who may be affected by the study (confidentiality, ethical issues, attribution, copyright, malpractice, ownership, data protection act, etc.).	3.00	Moderate	10
6. I understand the procedure for university funding, incentives, and evaluation of research, fund for paper presentation and publication.	3.02	Moderate	8.5
7. I can think of a research problem without hesitation.	3.07	Moderate	5
8. I am equipped with knowledge, skills, attitudes and values of writing a good research.	3.06	Moderate	6
9. I utilize information technology appropriately for data management, data analysis and interpretation of data and/or findings.	3.12	Moderate	2
10. I understand relevant research methodologies and techniques and work on with data gathering procedures and statistical treatment of data.	3.19	Moderate	1
Composite Mean	3.07	Moderate	

Note: N=898; 3.50-4.00-High; 2.50-3.49-Moderate; 1.50-2.49-Low; 1.00 -1.49-Very Low

Table 5 illustrates the teacher-respondents skills in research activity. The table shows that teachers have moderate understanding in the relevant research methodologies and techniques and work on with data gathering procedures as well as statistical treatment of data as suggested by the mean average of 3.19 which is the highest among all others. Like the study of Brew (2013)[13], the public secondary and elementary school teachers in Antipolo have average level of research capabilities in writing different parts of a research proposal including methodologies and publishable research paper or article but less capable in applying American Psychological Associations format.

However, the respondents gave a little lower assessment on the belief that they demonstrate awareness of issues relating to the rights of researchers, research subjects, and others who may be affected by the study in terms of study's confidentiality, ethical issues, attribution, copyright, malpractice, ownership, data protection act (3.00). Nonetheless, these issues can be addressed through capability building seminar. As it is believed to be a significant contribution towards development research skills for teachers, there should be adequate research training, workshops, and other support should be given to teachers to motivate them to conduct research studies (Mills, 2012)[14] and also to minimize barriers in the development of research culture in an institution (Berliner, 2002). Skills are important to be developed because the lack of teachers' research skills and expertise limit themselves in doing research (Biruk, 2013).

**Table 6:-** School Related Factors Facilitating Research Activity.

Indicators	Mean	Qualitative Description	Rank
1. Financial support of school to research	3.16	Moderate	2.5
2. Work load of the teachers conducting research	3.16	Moderate	2.5
3. Adequacy of research facilities in school	3.19	Moderate	1
4. Appropriateness of materials needed for research	2.86	Moderate	5
5. Support of the school heads in doing teachers' researches	2.88	Moderate	4
Composite Mean	3.05	Moderate	

Note: N=898; 3.50-4.00-High; 2.50-3.49-Moderate; 1.50-2.49-Low; 1.00 -1.49-Very Low

Table 6 displays the school – related factors that facilitate research activity. Teacher-respondents said they were moderately affected by these school factors as indicated by the composite mean of 3.05. However, they gave the higher rating to the adequacy of research facilities in school as indicated by its mean average of 3.19. With the presence of research facilities, researchers will not get a hard time complying with what is required in their study because of the accessibility of materials needed. Presence of research facilities in school is through the initiative of the school heads, this only means that the support of heads in the research activity of teachers is contributory to the research culture in the school (Evans, 2011). This supports Berliner's (2002) belief that lack of school research funding, unmanaged workload and presence of research materials are barriers in research culture.

On the other hand, appropriateness of materials needed for research is marked less by the respondents with a mean value of 2.86 but verbally described as agree. It seems that they are not fully satisfied with the materials they need when doing their research. It may refer to library facilities, updated materials, and computers with internet access, photocopier, printing facilities, proper working place for students, research journals and others. In that case, researchers have to visit different libraries and find reading materials that would support their studies and can contribute to develop the research interests of the teachers. They may also share with one another with what they have in school and start collaborating with one another so that they may also learn from the inputs of one another. Through such activities, teachers may have the tendency to continue and strive more to dwell into research and find someone who will support and act as adviser from the colleagues (Hardre, 2012)[15].

**Table 7:-** Constraints Encountered by the Teacher-Respondents in Conducting Research.

Indicators	Mean	Qualitative Description	Rank
1. Do not have enough knowledge how to do research	2.85	Moderate	7
2. Insufficient knowledge and skills on research	2.97	Moderate	4
3. Lack of awareness on Basic Education Research Agenda	2.95	Moderate	5
4. There is a shortage of training and seminar on research activities	2.82	Moderate	8
5. Fear on Statistics	2.98	Moderate	3
6. Inability to maximize the use of technology	2.94	Moderate	6
7. No spare time to do research	2.71	Moderate	10
8. Unavailability of statistical software	2.81	Moderate	9
9. Do not see the importance of doing research in my professional life.	3.13	Moderate	2
10. Unclear institutional research policy	3.21	Moderate	1
Composite Mean	2.94	Moderate	

Note: N=898; 3.50-4.00-High; 2.50-3.49-Moderate; 1.50-2.49-Low; 1.00 -1.49-Very Low

Table 7 depicts the constraints encountered by researchers. It can be observed from the result that most of them said that the condition of the city schools' unclear institutional research policy has moderately affected research culture as suggested by its mean value of 3.21. The teacher may not be aware of the research policy, but DepEd has ordered schools heads and administrators across the country to adopt the "enclosed Basic Education Research Agenda" which promotes the conduct of research in schools by teachers. The purpose is to discover schools' issues and solutions and form a part of teachers' professional development and skills enhancement. By doing research, teachers are believed to improve their teaching practices for the betterment of students' learning and for the school (Ulla, 2017). The result is also the same with what was found out in the study of Morales (2016) that challenges like tight teaching timetables and heavy teaching workloads resulted to limited research involvement.

However, the respondents have given the least rating on the premise that they have no spare time to do research (2.71). They do not completely accept this idea. It may be evident that they really have time only, there are some reasons for not absolutely engaging into research activity. In the study of Ulla, et.al (2017), teacher - respondents revealed that most of their time was spent on classroom teaching, marking papers, and preparing lessons which give them no time to do research. They stated specifically that if their teaching load would be reduced to 18 or 20 hours of teaching a week, they would be motivated to do research.

**Table 8:-** Research Behavior of the Teacher-Respondents.

Indicators	Mean	Std. Deviation	Verbal Description
1. Discussing with colleagues to find research ideas	3.17	0.47	Moderate
2. Seeking advice from experienced colleagues to improve research capability	3.18	0.48	Moderate
3. Asking colleagues to review manuscripts	3.14	0.47	Moderate
4. Collaborating with colleagues to do research	3.09	0.48	Moderate
5. Giving feedback on manuscripts of colleagues	3.08	0.49	Moderate
6. Discussing with academics from other universities.	3.07	0.49	Moderate
7. Discussing with researchers from foreign universities, institutes.	3.04	0.42	Moderate
8. Supervising master's students (colleagues) to write theses.	3.06	0.44	Moderate

Note: N=898; 3.50-4.00-High; 2.50-3.49-Moderate; 1.50-2.49-Low; 1.00 -1.49-Very Low

Table 8 presents the research behavior of the teacher- respondents in the city schools in Laguna. It is suggested in the findings that they agree that the school has moderate research behavior as suggested by rating on the premise that they are seeking advice from the experienced colleagues to improve their research capability by its mean value of 3.18. It is good that teachers are asking help from fellow teachers because through such initiative, research culture can be developed within the school (Horodnic and Zait, 2015)[16]. When a researcher enters in research field, his/her colleagues, research fellows and friends are of great value to him/her. They are very helpful for the researchers to provide productive feedback, to encourage and to provide additional support that the researcher may need. It is also important to enhance academic productivity of new researchers.

Among the indicators given, in which the respondents agree on, they gave the least rating to the research behavior discussing research with researchers from foreign universities, institutes (3.04). This may be because, they have no foreign friends and they are uneasy and uncomfortable to talk with foreigners, especially in terms of research activity. They may consider discussing with school heads or co-teachers, instead that may create collaboration. Thus, collaboration in research activities provides opportunity to exchange knowledge and expertise among collaborators (Mawoki,2011)[17].

**Table 9:-** Research Climate in Schools.

Indicators	Mean	Std. Deviation	Verbal Description
1. Almost academics are committed to research	3.13	0.44	Moderate
2. People are supportive in helping others to do research	3.14	0.42	Moderate
3. Regardless of people's age, rank and title their research ideas are respected by others in my department	3.02	0.45	Moderate
4. The department head can influence the my research productivity and other academics by being a great exemplar of research behaviors	3.01	0.46	Moderate

Note: N=898; 3.50-4.00-High; 2.50-3.49-Moderate; 1.50-2.49-Low; 1.00 -1.49-Very Low

The research climate in city schools in Laguna is illustrated in table 9. It is noted in the table that respondents consider that schools have moderate research climate as suggested by moderate support of people in the school in helping others to do research and almost academics are committed to research, as suggested by their mean value of 3.14 and 3.13, respectively. Although, the responses rated averagely yet, these two premises were given the highest assessment. This means that the research climate is just average but supporting each other in terms of research



activities. As a means of support to teacher- researchers, DepEd Philippines recently issued DO No. 16, s.2017 which provides guidelines in managing research initiatives including creating research management committees (RMC) at various governance levels while introducing support mechanisms for research such as funding, partnerships and capability building.

Although, they agree that schools have moderate climate because the department head can influence the research productivity and other academics by being a great exemplar of research behaviors (3.01) but this belief was given with the least rating. Although, some may observe such behavior from their school heads, but others may not that is the reason why the respondent have not considered this as the prevalent practice in their school. But studies have proved that if academics are stimulated by a leader, they will perform well in research. The leaders' research engagement, performance, and outputs have significant impact on the research motivation of academics because academics consider their leaders as good exemplars of what researchers should be (Nguyen, 2015)[18].

**Table 10:- Research Policy in Schools.**

Indicators	Mean	Std. Deviation	Verbal Description
1. The supporting fund provided by the school for publishing articles in international referred journals.	3.02	0.46	Moderate
2. The supporting fund provided by the school for publishing articles in domestic referred journals.	3.02	0.47	Moderate
3. The supporting fund provided by the school for attending international conferences.	3.01	0.45	Moderate
4. The supporting fund provided by the school for research projects at college level.	3.06	0.45	Moderate
5. The supporting fund provided by the school for research projects at university level.	3.01	0.45	Moderate
6. The reward policy for academics who have good research outputs.	3.06	0.45	Moderate

Note: N=898; 3.50-4.00-High; 2.50-3.49-Moderate; 1.50-2.49-Low; 1.00 -1.49-Very Low

Table 10 shows the observed research policy in the city schools in Laguna. It can be seen from the result that the respondents agree that the schools have moderate research policy about the supporting fund provided by the school for research projects at college level and reward policy for academics who have good research outputs with a mean value of 3.06. They think that funds are very essential for the research to flourish. This is the DepEd way of establishing research culture within public schools. The Department provided policies and mandates that are largely geared towards the improvement of research productivity (Ricero, 2018). Nguyen (2015) also said that research funding was one of the most important factors that motivated academics to engage in research. Sufficient funding for research contributes to both the quantity and the quality of research outputs. Also, rewards are another factor that move teachers to do research because other study mentioned that lack of financial support to teachers makes them feel demotivated and not interested to conduct research studies. In this present study, the teachers said that allocation of budget for teachers and research incentives inspire and motivate teachers to practice their research skills (Alonso et al. 2010)[19].

Then again, the results indicated that they agree that the school is moderate in giving the support funds for publishing articles in international conferences and for research projects at university level (3.01) but these practices were given the lowest rating. This implies that not all teachers are recipients of this funding. They may have limited access to international conferences because of these conferences were attended by private schools. In DepEd Order 16, series 2017 entitled Research Management Guidelines states that Department of Education continues to promote and strengthen the culture of research in basic education. The department establishes the **Research Management Guidelines** (RMG) to provide guidance in managing research initiatives in the national, regional, schools division, and school levels. The enclosed policy also improves support mechanisms for research such as funding, partnerships, and capacity building. International conference is not mentioned. Consistent to this, the department launched the monthly research forum as a venue where teachers can have their research presentation (deped.gov.ph).

**Table 11:-** Performance of Teacher-Respondents in Research.

Number of Research	Research Parameter				
	Proposed	Completed	Presented	Published	Utilized
	( Count, %)	( Count, %)	( Count, %)	( Count, %)	( Count, %)
One	82, 9.10	47, 5.20	51, 5.70	15, 1.70	15, 1.70
Two	17, 1.90	12, 1.30	9, 1.00	2, 0.20	5, 0.60
Three	8, 0.90	2, 0.20	1, 0.10	--	1, 0.10
Four	1, 0.10	--	--	--	--

Teachers' performance in research in the city schools in Laguna is presented in table 11 in terms of research proposed, completed, presented, published and utilized. With regards to the proposed researches, it is indicated in the table that 82 or 9.10 percent of the teacher-respondents have one research proposed but only one of them or 0.10 percent has four proposed researches. Moreover, 47 or 5.20 percent of the total teachers have one completed study but then only 0.20 percent of them have three completed studies. In terms of presented researches, 51 or 5.70 percent of them have one thesis presentation in different venues but only one or 0.10 percent has three presentations. Also, 15 or 1.70 percent of the teachers have one research published in a research journal while only two or 0.20 percent have two research published. Among those researches, 15 or 1.70 percent were utilized and 5 or 0.60 percent have two utilized researches.

It can be seen from the result that there are several researches proposed but most of them did not prosper and remained to be just a proposal. With this result, teachers have to be encouraged and motivated so that proposed studies will successfully be presented and later on utilized considering that teachers are the most significant contributors in promoting research culture (Mills, 2012). Researches will only be useful when they will be put into practice. Challenges and other reasons for not continuing the researches proposed should be solved so that research culture will be established within the school. Research enables educators to follow their interests and their needs as they investigate what they and their students do. Teachers who practice teacher-research find that it expands and enriches their teaching skills and puts them in collaborative contact with peers that have a like interest in classroom research (Hine, 2013). Teacher research can change a teacher's practice, but it can also have a profound effect on the development of priorities for school-wide planning and assessment efforts as well as contribute to the profession's body of knowledge about teaching and learning.

**Table 12:-** Relationship Between Teacher-Related Factor to Research Culture.

Research Culture	Teacher-Related Factors			
	Self-Efficacy	Motivation	Attitude	Skills
Research Behavior	0.450**	0.461**	0.447**	0.546**
Research Climate	0.371**	0.400**	0.415**	0.484**
Research Policy	0.254**	0.299**	0.307**	0.382**
Research Policy	0.320**			Moderate Relationship

The relationship of teacher-related factors to research culture is shown in table 12. As indicated in the table 12, teacher-related factors such as self-efficacy, motivation, attitude and skills are significantly related to research behavior, research climate and research policy which are the indicators of research culture. The result implies that the teachers' factors have affected the research culture in the schools. When the teachers have high self-efficacy, high attitude towards research, with very good skills in writing their research and high motivation, then, that can surely build higher research culture.

**Table 13:-** Relationship Between School-Related Factor to Research Culture.

Research Culture	School-Related Factors				
	Financial Support	Work Load	Adequacy of Facility	Lack of Materials	Admin Support
Research Behavior	0.516**	0.497**	0.497**	0.253**	0.278**
Research Climate	0.447**	0.435**	0.439**	0.240**	0.258**
Research Policy	0.393**	0.376**	0.347**	0.248**	0.268**

Table 13 shows the relationship between school related factors to research culture. The school factors such as financial support, workload, adequacy of facility, lack of materials and administration support are significantly related to research culture as described by the research behavior, research climate and research policy. The result also implies that the school factors have affected the research culture in the schools.

The result only supports what had been found out by Nguyen (2015) in his study that research self-efficacy, research self-competence, financial support for research, and research grants were the significantly related to research culture. Moreover, Kutlay (2012)[20] investigated the influences of personal factors of the teachers in Argentina, Australia, Brazil, Canada, China, Finland, Germany, Hong Kong Italy, Malaysia, Norway, the UK, and the USA to research. The researchers found out that the higher their personal get, the higher the research productivity of academics is.

**Table 14:-** Relationship Between Contextual Variables to Research Culture.

Research Culture	Contextual Variable	Magnitude of Relationship
Research Behavior	0.439**	Moderate Relationship
Research Climate	0.351**	Moderate Relationship
Research Policy	0.320**	Moderate Relationship

Table 14 presents the relationship between contextual variable to research culture. It can be seen that contextual variable is moderately related to research culture as illustrated by the research climate, research behavior and research policy. The result also suggests that there is significant relationship between these variables as suggested by the computed Pearson values. The constraints encountered during the research activity have affected the research culture. The more problems they encountered, there is likely that they will not continue their research work. Conducting research in the country, especially in the public secondary schools, may be limited since only a few teachers have tried to do it because of the different problems they experienced during the process of doing their studies (Ullah, 2016). Their tight teaching timetables and heavy teaching workloads are some of these problems. Although educational institutions in the Philippines have encouraged their teachers to be involved in research, as it is seen to be useful for their professional development, teachers are confronted with many issues that affect their motivation to undertake research (Morales, 2016).

**Table 15:-** Predictors of Teachers' Research Culture as to Research Behavior.

<b>Teacher-related Factors and Research Behavior</b>			
Variable	Reg Coefficients	Std. Error	t-value
Constant	0.970	0.099	9.923
Skills	0.355	0.040	8.992
Attitude	0.130	0.032	4.013
Motivation	0.127	0.034	3.717
Self-efficacy	0.062	0.024	2.609
Multiple R = .594; $R^2 = .352$ ; Adj $R^2 = .349$			
<b>School Factors and Research Behavior</b>			
Variable	Reg Coefficients	Std. Error	t-value
Constant	1.622	0.080	20.188
School Factors	0.486	0.026	18.604
R = .528; $R^2 = .279$ ; Adj $R^2 = .278$			
<b>Contextual Variable and Research Behavior</b>			
Variable	Reg Coefficients	Std. Error	t-value
Constant	1.999	0.076	26.149
Contextual	0.376	0.026	14.608
R = .439; $R^2 = .192$ Adj $R^2 = .191$			

Predictors of research culture as to research behavior in the city schools in Laguna are presented in table 15. In terms of teacher-related factors, school-related factors and contextual variable, all of these are predictors of research behavior, however, of the three variables, teacher-related factors have the highest effect as indicated by its overall effect of 35.2 ( $R^2$ ) percent or 34.9 (Adj.  $R^2$ ) percent predicts the research behavior while contextual variable has only 19.2 ( $R^2$ ) percent effect or 19.1 (Adj.  $R^2$ ) percent predicts schools research behavior. This implies that when teachers are equipped with these factors, better is the chance that they will have the initiative to do research. It is the

will of the teacher which has the greater chance that influences the research desire in the school. Among the skills, attitude, motivation and self-efficacy of the teachers, the most influential factor is the skills of the teachers as implied by its regression coefficient of 0.355 which has an effect to the schools' research behavior while self-efficacy has the least effect of 0.062 only. The result is the same with that of Nguyen (2015). The findings showed that research self-efficacy, research self-competence, financial support for research, and research grants were the significant predictors of the allocation of effort to research. Among them, research self-efficacy, research self-competence which can be considered as teacher-related factors were the most significant predictors indicated by all respondents.

**Table 16:-** Predictors of Teachers' Research Culture as to Research Climate.

<b>Teacher-related Factors and Research Climate</b>			
Variable	Reg Coefficients	Std. Error	t-value
Constant	1.236	.100	2.317
Attitude	.154	.033	4.665
Motivation	.092	.035	2.627
Skills	.324	.040	8.044
R = .527; $R^2 = .278$ Adj $R^2 = .274$			
<b>School Factors and Research Climate</b>			
Variable	Reg Coefficients	Std. Error	t-value
Constant	1.800	0.080	22.371
School Factors	0.418	0.026	16.005
R = .472; $R^2 = .222$ ; Adj $R^2 = .221$			
<b>Contextual Variable and Research Climate</b>			
Variable	Reg Coefficients	Std. Error	t-value
Constant	2.223	0.077	28.943
Contextual	0.123	0.022	11.228
R = .351; $R^2 = .123$ ; Adj $R^2 = .122$			

Table 16 indicates the predictors of research culture as to climate. It can be seen that in terms research climate in the school, teacher-related factors, school factors and contextual variable are significant predictors, but then again, teacher-related factors have the greatest effect as suggested by its overall effect of 27.8 ( $R^2$ ) percent or 27.4 (Adj.  $R^2$ ) percent that the research climate can be predicted through the teacher related factors while contextual variable has the least effect which is 12.3 percent or research climate can be predicted by 12.2 percent. With regards to the teacher-related factors such as attitude, motivation, self-efficacy and skills, skills have the greatest effect which is indicated by its computed regression coefficient of 0.324 percent whereas motivation has the least effect that is 0.092. It can be inferred from the result that teachers' skills are what matter most in many research activities. Some other factors like motivation, attitude are present and yet their research skills are important factors in building a supportive and collaborative research climate within the school because it gives an edge over those who have difficulty in such endeavour (Lertputtarak, 2008)[21]. Moreover, the result is the same with what was found out by Vasquez (2017)[22] that five predictors such as academic degree, rank, administrative position, motivation to develop knowledge and learning from research findings and skills and problems encountered, contributed significantly to predicting the research culture.

**Table 17:-** Predictors of Teachers' Research Culture as to Research Policy.

<b>Teacher-related Factors and Research Policy</b>			
Variable	Reg Coefficients	Std. Error	t-value
Constant	1.358	.127	10.687
Attitude	.133	.042	3.185
Skills	.355	.051	6.975
R = .407; $R^2 = .166$ Adj $R^2 = .162$ DV – Research Policy			
<b>School Factors and Research Policy</b>			
Variable	Reg Coefficients	Std. Error	t-value
Constant	1.669	0.097	17.164
School Factors	0.445	0.032	14.086
R = .426; $R^2 = .181$ Adj $R^2 = .180$			

Contextual Variable and Research Policy			
Variable	Reg Coefficients	Std. Error	t-value
Constant	2.112	0.092	23.060
Contextual	0.312	0.031	10.109
R = .320; $R^2$ = .102 Adj $R^2$ = .101			

With regards to research policy which is shown in table 17, teacher-related factors, school-related factors and contextual variable are significant predictors, however, school-related factors have the greatest overall effect among the given three variables which is 18.1 percent ( $R^2$ ) or it can be said that research policy can be predicted by school-related factors by 18.2 percent (Adj.  $R^2$ ). In terms of teacher-factor, skills affected school's research policy as suggested by the computed regression coefficient of 0.355. On the contrary, contextual variable has the least effect which is 10.2 percent ( $R^2$ ) or it could also mean that contextual variable can predict research policy by 10.1 percent (adj.  $R^2$ ). The result is understandable considering that the policy followed in research is given and being implemented by the school. The research funding, guidelines, research incentives and other policies are controlled by the school, therefore, in terms of research policy, the school has the full control of it. The teachers will only have to follow and comply with what is being asked for them.

**Table 18:-** Test of Significant Influence of Research Culture to Teachers' Performance.

Observed	Predicted		Percentage Correct		
	No Research	With Research			
No Research	837	0	100		
With Research	61	0	0		
Overall Percentage			93.2		
For Dependent Variable Encoding: 0 – No Research; 1 – With Research					
Variable	B	SE	Df	p-value	Exp(B)
Research Behavior	.384	.481	1	.425	1.468
Research Climate	-1.483	.781	1	.058	.227
Research Policy	.784	.580	1	.198	2.191

Table 18 shows the predicted values in relation to research completed based on the full logistic regression model. Specifically, this shows how many cases are correctly predicted: 837 of teachers with no research were observed and are correctly predicted to be with no research completed; similarly, none among the teacher-respondents observed with research and is correctly predicted with research as well. Teachers were observed with no research but are predicted with research; likewise, 61 teachers were observed with completed research but are still correctly predicted to be with no research. However, in the subsequent table of significant influence for teacher's research performance, not even a single predicting variable showed significance. But in consideration of the assumed predicted influence of each factors affecting teacher's research performance, the exponentiation of the coefficients (the odds ratio) is worth to look into.

Teachers' performance in research activities is not affected by the existing research culture in the school. Unlike what has been found out in the study of Vasquez (2017) where five predictors such as academic degree, rank, administrative position, motivation to develop knowledge and learning from research findings and skills and problems encountered, contributed significantly to predicting the research culture. These five predictors also accounted for a substantial amount (37.2%) of the variance in research culture. Administrative responsibilities may negatively affect research activities, because they reduce the time available for research. The other three components of motives were in fact rated higher than the desire to develop knowledge and to learn from research findings, yet their contribution to predicting research culture beyond the other variables turned out to be insignificant. It is, therefore, no wonder that the contribution of conducting research due to a commitment to the policy and to predicting research culture was found to be non-significant, although it was highly rated.

### Conclusions:-

In relation to the presented summary of findings, the following conclusions were derived: teacher-related factors, school-related factors and constraints variable have influenced research culture. Hence, the null hypothesis emphasizing non-significance between the aforementioned variables is rejected; of the three variables, teacher-related factors, school-related factors and constraints variable which are all predictors of research culture, teacher-related factors are the most influential and with the highest percentage of effect in research culture while school related factor only affect research policy which is a part of research culture. Hence, the null hypothesis is rejected; research culture have no significant influence teachers' research performance. Hence, there is no sufficient evidence to reject the null hypothesis.

### Recommendations:-

In the light of the given summary of findings and derived conclusions, the following recommendations were drawn: District supervisors and school heads may conduct different activities that will enhance teachers' attitude, motivation and skills in research like mentoring program, capability seminar, and enhancement seminar during teachers' meeting with invited speakers; the school head must encourage and require the teachers especially the master teacher to conduct basic/ action research; the school heads may look for institutions that will help in training teachers, funding research activities and in attending free local and international research conferences; School heads may give enticing incentives, rewards, and recognition to the greatest number of researches completed, presented, published and utilized; and the proposed action plan that is designed to enhance, sustain, and raise the bar of research culture is recommended for implementation.

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