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# **Regression Model for the Professional Engagement Among High School Teachers in Disaster Risk Reduction Management**

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## **Abstract**

Recent studies on Disaster Risk Reduction Management dwell much on preparedness, adaptation, perceptions, and awareness of the risks inflicted by disasters. Most of which highlighted the importance of partnership and collaboration of effort involving the teachers' as transmitters of knowledge in the community as a whole. Partnership, collaboration and teamwork is the best translation of the vision, mission, goals and objectives to reality and ensures success of all organizations and parties. While this study investigates the most significant factors affecting teachers' professional engagement in disaster risk reduction management. The purpose of this study is to identify significant factors for the continuing professional development of high school teachers both in the junior and senior high schools of the division of Agusan del Sur, Philippines that influence their professional engagement in disaster risk reduction management (DRRM). Descriptive type of research design was employed involving 318 teachers in the division. Regression analysis applied to independent variables which are reasonable and significantly correlated to the overall mean rating of professional engagement. Results show a linear regression model and variance of teachers' professional engagement in DRRM positively influenced the number of related training, DRRM knowledge, DRRM skills, and DRRM values. Hence, the regression model revealed that related training is the best predictor for the professional engagement of teachers. In consonance to this, continuing professional development for teachers needs to anchor on concepts of DRRM and their application in the community.

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The implication of this study is that “strengthening the capacity enhancement program in Disaster Risk Reduction Management for teachers is necessary for them to engage, impart and transmit knowledge to its best for the country's overall vision "Safer, adaptive, and disaster resilient Filipino communities towards sustainable development.

**Keywords:** Disaster risk reduction management (DRRM); professional profile; professional competence; professional engagement in DRRM .

## **1. Introduction**

The environmental problem faced globally has led and generated more severe problems like earthquake, floods, fires, and others that losses human lives, animals, and properties [1,2].” These phenomena become an existing pattern of hazard and exposure amongst human. Moreover, according to [3], that these losses are likewise mean loss of the nation's human and financial resources. Consequently, as cited by [4] that the adoption and implementation of RA No. 10121 known the Philippine Disaster Risk Reduction Management Act of 2010 was circulated to address the said current pattern of hazard confronted globally, mandating all the agencies to act and respond to the violence of nature due to human activities. One of these agencies is the Department of Education. It is clearly stated in Section 2 the involvement of the Department of Education sector to mainstream Disaster Risk Reduction Management and Climate Change Activities in development processes, budgeting, and governance and section 14, cited that children and youth should be involved in DRR and integration of DRR education in the school curricula. This mandate is strengthened further by the Department of Education Orders. Such as DepEd Order No. 55 s. 2007 directed the prioritization of the mainstreaming of the DRRM in the School System & Implementation of Program and Projects. DepEd Order No. 276 s. 2010 indicated the consolidation of school plan on DRR and CCA. DepEd Order 82 s. 2010, cited the reiteration of detailed implementing guidelines on CCA and DRR at the school levels. DepEd Order No. 83 s. 2011 pointed out the Disaster Preparedness Measures for schools and DepEd Order No. 50 s. 2011 emphasized the creation of Disaster Risk Reduction Management Office. Moreover, Section 21 of RA No. 10121 cited the provision of the Local government's budget allocation of 5% of the total IRA set aside for the Local Disaster Risk Reduction Management Fund of which (70% for the disaster preparedness and 30% lump sum for a quick response). The National and the local government activated for the implementation as mandated by RA 10121. However, despite the government's effort on the implementation of the Disaster Risk Reduction Management still, numbers of cases are recorded as to victims of calamities naturally and unnaturally that need to be acted urgently. The reported cases of calamities internationally to locally from 2013-2018 are as follows; total frequency and impacts of natural disaster in Southeast Asia 19, 113, 335 total killed, 139818 no. of injured, 71,244946 no. of affected, 182,420 no. of homeless, 71567184 total affected and 6,610,421 total damage in US Dollars [5].” Moreover, most of the school areas in Agusan del Sur strategically situated along the riverbanks and areas are prone floods and the fact that the expansion of the schools especially in senior high schools built and expanded vertically and these structures become vulnerable of an earthquake. What has done for eight years from the promulgation of RA 10121? Moreover, the fact that DepEd mandated the quarterly conduct of drills as part of monitoring on the DRRM in school, the Province of Agusan del Sur reported 110 barangays, 21,754 families, 104,313 persons affected population, 1659 totally damaged houses, and 2,950 partially damaged

houses and tallied cost of damages a total of 34, 629, 660.00 as effects of the Typhoon "PABLO" on December 7, 2012, 5:00 AM. Furthermore, reported result on the Monitoring and Evaluation of Local Disaster Risk Reduction Management in the Municipality of Esperanza, Agusan del Sur, among the 14 high schools, only four schools rated "Very Satisfactory" and nine schools out of 47 schools from Elementary. Esperanza National High School got the lowest rate of 70% or "Fair." This data means that internal stakeholders in the school are deficient in terms of competencies (knowledge, skills, and attitude) in this aspect. These effects of disasters and results of the monitoring have a bearing on the school performance indicator. Teachers competence predicts students' performance. This further implies that "The higher is the competence of the teachers, the higher is the performance of the students [6]. Hence, the transmission of knowledge from teachers to students and the community in general about the disaster is deemed necessary. [7] shared the fundamental habits he has learned as a leadership educator to help one becomes more personally and professionally fulfilled "You cannot give what you do not have." Making the life the very best in the service to others and realizing that self-replenishment and mindfulness is essential in order to continue to give one's best and in order to live life meaningfully. The more gained knowledge, the more histories of engagement, the more the life worth living. This is the deeper thought of teachers' professional engagement and community linkages as pointed in the DepEd Order No. 42, s. 2017 domain 6 of the Professional Standards of Teachers. The extent of professional engagement of teachers depends on their acquired extent of competence (knowledge, skills, and values).

Furthermore, to determine the extent of teachers' engagement in Disaster Risk Reduction Management is of prime importance since they are entrusted not only to shape the minds and character of the learners, more significantly to take care of their safety as well while in school. Learners are the most vulnerable and potential for hazards and victims of disasters, and learners should also be also conversant of the importance of DRRM knowledge and skills in saving oneself, family, and community. To make this happen, far more important that teachers should equip with knowledge, skills, and values for them to share and impart knowledge about disasters optimally. As an agent of change, the researcher felt the need to do an investigation as to how the effects of disasters as basis lessened if not ceased or prevented. Thus, the study determined the extent of Professional Engagement among High School Teachers in Disaster Risk Reduction Management a basis for further inputs on DRRM training- workshop. Other inputs including the Institutionalization or Policy Making on DRRM Competencies & skills to all teachers, development of DRRM resources, organization of DRRM trainers team from the Department of Education and to create DRRM Theory/Model out of the result of the study. The researcher hopes that this endeavor will lead somehow the attainment of the country's overall vision a "Safer, adaptive, and disaster resilient Filipino communities towards sustainable development.

## **2. Materials and Methods**

This study was delimited to the teachers of Junior and Senior High Schools in the Division of Agusan del Sur, Philippines. There were 318 participants in the study, specifically, those assigned as members of the committees in the Schools Disaster Risk Reduction Management and Senior High School Teachers who integrated Disaster Risk Reduction in their classes. The proponent used purposive sampling in the selection of the participants of 318 focal persons or heads from committees Disaster Risk Reduction Management in schools within the division. They were the object of the study since they are the front liners in the dissemination of knowledge

about Disaster Risk Reduction Management in the school. Furthermore, this study utilized the questionnaire survey instrument crafted by the researcher based on the collection of different research studies and works of literature in investigating DRRM knowledge. Some of the criteria in the survey questionnaire based on the ideas from the Philippine Professional Standards for Teachers. These indicators are community linkages, professional competence, and professional engagement. Moreover, for the data gathering procedure, the researcher sought permission to the Schools Division Superintendent, allowing her to conduct the study. Upon the permission from the Division of Agusan del Sur superintendent, school administrators, and teacher- participants regarding the conduct of the study, the researcher left the survey questionnaires to the department heads, and after three weeks the survey questionnaires were retrieved. The statistical treatment employed was descriptive measures and correlational tests in analyzing data gathered. The following techniques employed in the analysis of data; frequencies and percentages utilized in describing the characteristics among High School teachers in the Division of Agusan del Sur in terms of a personal profile, the extent of training. The extent of professional competence, community linkages, professional engagement obtained by computing the weighted mean per indicator. Regression analysis was also employed to determine teachers' profile, professional competence, and community linkages predict significantly to teachers' professional engagement and Likert scale ' scoring and quantification of data employed in this study.

### 3. Results

**Table 1:** Statistics on Regression Model for Teachers’ Disaster Risk Reduction Management Professional Engagement

Model	Unstandardized Coefficients	Standardized Coefficients	t	p-value	
	B	Std. Error	Beta		
(Constant)	0.397	0.175	-	2.267	0.024
Number of related trainings	0.687	0.049	<b>0.616*</b>	14.002	0.000
DRRM Knowledge level	0.076	0.037	<b>0.091*</b>	2.062	0.040
DRRM Skills	0.55	0.085	<b>0.494*</b>	6.460	0.000
DRRM Values	0.026	0.096	0.021	0.269	0.788

R coefficient = 0.625

R<sup>2</sup> = 0.390; Adjusted R<sup>2</sup> = 0.386

F-value = 100.807 ; p-value = 0.000

\*\* Influence is significant at the 0.01 level (2-tailed).

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

#### **4. Discussions**

Table 1 shows that the DRRM related training, knowledge, and skills significantly influence the professional engagement of teachers while values have little influence as shown. The result suggests that no matter how passionate and eager one to serve when the knowledge and skills are scarce or lacking, one may become reluctant and less useful to engage in community activities. Hence, knowledge and skills are high predictors that one will be engaged professionally. This idea further suggests that capacity building for teachers should be conducted to enhance knowledge and skills for teachers in Disaster Risk Reduction Management. Furthermore, data showed a regression model that is linear ( $R = 0.62$ ,  $F = 100.807$ ,  $p < 0.01$ ); that is, 39.0% of the variance of teachers' professional engagement in DRRM is positively influenced by the explanatory variables, namely, number of related trainings,  $X_1$  ( $\beta = 0.616$ ,  $p < 0.01$ ), DRRM knowledge,  $X_2$  ( $\beta = 0.091$ ,  $p = 0.040$ ), DRRM skills,  $X_3$  ( $\beta = 0.494$ ,  $p < 0.01$ ) and DRRM values,  $X_4$  ( $\beta = 0.021$ ,  $p = 0.788$ ). Hence, regression model for the teachers' professional engagement in DRRM ( $Y$ ) using the standardized coefficients is given as:

$$Y = 0.616 X_1 + 0.091 X_2 + 0.494 X_3 + 0.021 X_4$$

with  $X_1$  or related training as the best predictor the professional engagement of teachers. In consonance to this, continuing professional development for teachers needs from concepts of DRRM and their application in the community. As a whole, the number of related training and professional competence as to skills, knowledge, and values showed significant correlation as indicated by a beta coefficient ( $R = .625$ ). Data also show that these parameters or indicators have a significant influence of 39% variance of the professional engagement of teachers in Disaster Risk Reduction Management as evidence by ( $R^2 = 0.390$ ). Thus, the null hypothesis that states that the "there is no significant influence of personal profile and professional competence among High School teachers with their professional engagement" is rejected.

#### **5. Conclusions**

This study concludes that the significant factors for continuing professional development of high school teachers both in the junior and senior high schools of the division of Agusan del Sur, Philippines that influence their professional engagement in disaster risk reduction management (DRRM) are numbers of Disaster Risk Reduction related training, professional competence as to skills, knowledge, and values. As demonstrated by the authors in [8,9] that professional competence of teachers as to knowledge, skills, and values in Disaster Risk Reduction is potent at the level required to ensure that learners and the community they served receive competent services based on current practice, techniques and act diligently and following applicable technical and professional standards. Competent professional services need the exercise of sound judgment in applying professional knowledge and skill. Teachers should have a continuing awareness and an understanding of relevant information to develop and maintain the capabilities to perform the competently within the professional environment, and this can be made possible only for continuing professional development or series of training-workshops until those competencies needed for DRRM be mastered by teachers and be transferred/imparted to the learners.

Furthermore, the competent performance or effective action of teachers implies the mobilization of knowledge,

cognitive and practical skills, as well as social behavior components such as attitudes, emotions, and values and motivations [10].” From this investigation, this model is raised “The lower the continuing professional development attended, the lower the professional competence acquired, the lesser the professional engagement of teachers.” This study is limited only as to the most significant factor of teachers that influence their professional engagement in disaster risk reduction management (DRRM). The need to assess further on the effectiveness of the capacity training conducted to the teachers related to DRR is necessary so that intervention for improvement can be done. Thus, the continuing capacity enhancement program is strengthened and recommended for the attainment of the country's overall vision "Safer, adaptive, and disaster resilient Filipino communities towards sustainable development.

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