**TIME SERIES ANALYSIS OF DENGUE CASES IN REGIONAL**

**HEALTH UNIT, SOLANO, NUEVA VIZCAYA**

A Research

Presented

The Research and Evaluation Committee

College of Teacher Education

NUEVA VIZCAYA STATE UNIVERSITY

Bayombong, Nueva Vizcaya

In Partial Fulfillment of the Course Requirement

In Research 1

(Action Research in Mathematics)

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**APPROVAL**

This research entitled, The Series Analysis of Dengue Cases in Regional Health Unit, Solano, Nueva Vizcaya, prepared and submitted by Allegna Kail L. Corpuz, Shahanie L. Abbat, Reycchelle B. Gonzales and Divina Dumayas, in partial fulfilment of the course requirements in Action Research 1 (Action Research in English), is hereby recommended for approval.

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Approve by the Panel of Examiners on May 2019, with a grade of PASSED.

Approved and accepted in partial fulfilment of the requirements in **Action Research I (Action Research in Mathematics)**

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Date signed

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**DEDICATION**

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**Abstract**

In tune to the purpose of the dengue cases of Solano, Nueva Vizcaya– the study looked into modelling the periodic monthly frequency of dengue cases in Solano, Nueva Vizcaya using the data from January 2010 to December 2018. By fitting the Time series to the computed monthly frequency of dengue cases, Time series analysis was performed using backward elimination stepwise time series regression. Eleven models were generated and their statistics show that the model with the mean term and the sine term of the first harmonic – accounting to the 12-month period – both of which are significant having p-values lesser than 0.05 – is the most parsimonious making it the best-fit model. The best-fit model was then used to describe the periodic monthly frequency of dengue cases in Solano. From the results of the study, it can be inferred that the periodic monthly frequency in Solano can be described and represented by a Time series analysis.

**Keywords:** Time Series Analysis, Time Series Regression, Backward Elimination