

Research Assignment 2

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- I. Write 15 different quantitative research titles. Follow the SMART process.
1. Analysis and implementation of the wave equation to model a reverberation in 3D space.
 2. Numerical simulation of end correction of cylindrical tube.
 3. Sound synthesis of acoustic guitar.
 4. Number of frogs and wasp in certain region in Zamboanga City (2021).
 5. Temperature fluctuations on the cities of the Philippines every year.
 6. Average time discharged of the SAMSUNG XYZ-123 during sleep mode.
 7. The distance every Zamboanga people have traverse every month.
 8. Mating season of humans.
 9. SCC student sleeping time.
 10. Sqaure meters of deforestation happened in Zamboanga.
 11. Number of student who have suferred abuses from parents causing long term effects on the behavior and psychological state of the student, each characterized by at what age it occured, how long it continued, and type of abuse.
 12. Watts consumed on different barangays in Zamboanga.
 13. Stamina of wind instrument players compared to athletics and non wind instrument players.
 14. Bubble acoustics, its formation and sound synthesis for use in 3D game engines.

15. Percentage of the entire SCC STEM student's parents willing to inflict physical injuries to their children due to religious beliefs.

II. Answer the following:

1. What is quantitative research?

A research containing variables relating to quantity. Example: Speed, probability, horsepower and etc.

2. What are the characteristics of quantitative research?

First is that collects data of quantity. It may also require large sample size which may help in detecting small anomalies never detected with smaller sample size.

3. Discuss the strengths of quantitative research?

One is (1) relatively easy to analyze without using abstract description with words, and instead relies on quantity. It can also be (2) consistent; conducting again the research with the same parameters as before at that same time, should give the same result, otherwise, time may have impact that observation.

(I do admit 1, 2 was taken from this resource¹ and added an explanation of my own.)

4. Discuss the weaknesses of quantitative research?

Though there are some limitations to these kinds of research, one is that a phenomenon may be hard to understand without the help of abstract words which exist in qualitative research; ethnicity, beliefs and habits are all cannot be acquired as quantity.

5. Give an example of correlational and experimental research in relation of the pandemic that we are struggling nowadays.

- a. Correlational:

Upon the birth of the virus, followed by its rampage, killing millions of people, heavy strict quarantine were implemented. This immediately resulted into the slowing the rampage of the virus on the areas it was implemented along with contact tracing to suppress any possible suspect who contracted this virus from going out and spreading even more.

- b. Experimental:

In an experimental simulation by Grant Sanderson^[1] of what would happen in an ideal epidemic with certain variable parameters change, the effective reproductive number (R) has considerably went down ≈ 1.7 to 1.3 , when the probability of infection is set to 0.10 .

¹<https://betterthesis.dk/research-methods/lesson-1different-approaches-to-research/strengths-and-limitations>

References

- [1] Grant Sanderson. Simulating an epidemic. <https://www.youtube.com/watch?v=gxAa02rsdIs&t=958s>.