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Adaptation of the Residents in Bicol Region, Philippines to the COVID-19 Pandemic

Jaymund M. Floranza
Catanduanes State University - Panganiban Campus
Catanduanes, Philippines

Abstract *- The world is in crisis because of the COVID-19 Pandemic. Government officials and medical specialists enacted non-pharmaceutical interventions (NPIs) to restrain the spread of the Coronavirus. This scenario attracts researchers not only focused on medical and epidemiological aspects but also focused on other related social and applied sciences. Thus this descriptive-quantitative research gathered data through an online survey determined the adaptation of the residents in the Bicol Region, Philippines, to the COVID-19 Pandemic. The study revealed that the 328 resident-respondents 'moderately agree' to 'strongly agree' to the given statements adaptation-indicators to the COVID-19 Pandemic. Interestingly, the resident-respondents are not only are compliant with the authorities, but they are also observant with the precautionary measures to protect themselves from contamination of the virus. They also exhibited trust and confidence to the Government in the battle against COVID-19. Yet, they are aware of the limitations of the Government more so, with the medical services and facilities of the medical experts. And thus, the present study suggests capacitating healthcare, further reinforced and develop the availability of medical resources and public health to earn conviction among the people who are expecting from the Government and medical authorities particularly amid crisis. Lastly, policies to be formulated related to a pandemic may be inclusive across age, sex and educational levels.*

Keywords – Adaptation, Pandemic Preparedness, Philippines

INTRODUCTION

A severe acute respiratory infection (SARI) caused by 2019 novel coronavirus (SARS-CoV-2) started to expand from Wuhan to all of China as of December 2019 [1]-[2]. On March 3, 2020, the World Health Organization announces the COVID-19 outbreak a pandemic [3]. According to the official website of the World Health Organization, there were 3,272,202 confirmed cases and 230,104 deaths worldwide [4]. While in the Philippines, there are already 9, 223 confirmed COVID cases, 1,214 recovered, and 607 deaths [5].

This worldwide crisis imposed enormous pressure among government officials and medical specialists, and thus it is argued to make the best actions through organized execution by communities and countries to lessen the exponential increase of COVID-19 [6]. This tragedy has severely affected the delivery of essential care due to a lack of supplies, lack of forecast models, and of course, the lack of medication drugs [1].

With the micro to micro effects of this pandemic, it attracted more than a thousand researchers and writers across the globe and across disciplines to write given this COVID-19 pandemic. The writings published in high-end journals are focused not only on medical and epidemiological aspects but also concentrate on other related social and applied sciences where this author is more interested. With the bibliometric inquiry based on the platform databanks such as Scopus, Science Direct, to

those of scholarly papers in Google Scholar and with the aid of software Publish or Perish (PoP) [7], this writer accessed peer-reviewed academic articles that served as related literature and studies of this research. And therefore, it emphasized the necessity to conduct research related to the COVID-19 pandemic to address the research gaps and fill in the demand in the coming days and months [8].

Communication channels can be significant in this crisis. Media collaborations are needed to avoid public fear [9]. And it is suggested that a relayed message from national and international health specialists is verified information to evade fake news, gossips, and panic [6] because the Public gives importance to the information relayed by the media channels [10]. There have been discoveries that the spreading of questionable information is susceptible to misinformation circulation [11].

Further, there have been reports that social supports and behavioral policies do not only reduce the psychological pressure during the epidemics but also change the attitude that is essential during public health crises [12]. It can also lessen the depressing psychological effects of isolation [13] with the coronavirus disease 2019 that is formed by a novel virus for which there is no pharmaceutical treatment. In such a case, it overpowers the competence of health care systems. Therefore, governments chose to enact non-pharmaceutical interventions (NPIs) to hold the spread of the Coronavirus COVID-19 pandemic [14].

The communities should remain to be quarantined or isolated is one of the best non-pharmaceutical interventions that involved personal hygiene methods, termination of mass gatherings and public affairs, school and workplace stoppage, and travel restrictions [15]. We learned this strategy from the previous pandemic that non-pharmaceutical involvements are at least as essential as drugs or vaccines in restraining an epidemic when there is no pharmaceutical treatment [15]. Non-pharmaceutical engagements created on continuous physical distancing have a definite possibility to lessen the extent of the epidemic height of COVID-19 [16]. Let this pandemic brings us lessons so that we could apply them in the future outbreaks by knowing the different non-pharmaceutical interventions, their blended advantages and disadvantages, and the best scheduling for their application [15]. Nevertheless, one study about a subgroup of subjects that are generally detached, unaware, and not practicing protective actions and being generally disengaged in news updates and being individually unaffected [17]. On the contrary, it is considered unacceptable for Turkish society [10], and in other cases, noncompliance is subject to social judgment [13]. In such situations, operating policy plans during contingency pandemic cope with disruptions may be seriously considered and be imposed [18] and protective measures should be observed completely [10].

In the Philippine setting, our country is also fighting hard for this pandemic. And as part of the mitigating measures, the whole Luzon and other areas of the Philippines have been placed in an enhanced community quarantine on March 16, 2020. The community quarantine is even stretched up the mid-month May 2020 with different classifications of the community quarantine, depending on the number of the COVID-19 cases. Philippine Republic President Duterte signed the 'Bayanihan to Heal as One Act' on March 25, 2020, to ensure the full authority of the Philippine Government to implement courses of action to combat this pandemic. And one of the strategies is, those who have a history of travel to places with COVID-19 infection but displaying no symptoms undergo self-quarantine for 14 days. Individuals who have a fever and cough but have no history of exposure may also seek medical attention and comply with the necessary infection control rules [19].

As of this writing, The Department of Health (DOH) Center for Health Development – Bicol (CHD-Bicol) accounts 43 COVID-19 cases in Bicol: composing: twenty-three recovered, one quarantined, seven admitted and three deaths in Albay; six recovered, one admitted and one death in Camarines Sur; and one recovered in Catanduanes [20]. And the DOH-CHD-Bicol is appealing to the Public to follow community

quarantine processes as well as protective measures strictly and to stay at home. Everybody's support is indeed vital in this time of pandemic because local news reports also show violations of some individuals against the community quarantine measures that are being applied by the local government officials. Accordingly, comprehensive studies depicted the different issues of COVID-19 pandemic in their respective places. The research on the adaptation of the residents to COVID-19 epidemics in our region or our province is significant since there was no study yet concerning it.

The pandemic involves wide-range behavioral issues, and therefore personal insights from the social and behavioral context can be considered to improve human behavior during this crisis [8]. The present study is essential in understanding the adaptation of the residents to the COVID-19 pandemic. The results of the survey are useful in the formulation of guidelines in fighting an epidemic in the lens of social and behavioral sciences that may help lessen the potentially harmful effects in the community.

OBJECTIVES OF THE STUDY

This study considered the adaptation of the residents in the Bicol Region, Philippines, to the COVID-19 Pandemic. Also, the research identified the Profile of the residents who participated in the study in terms of A) Age; B) Sex; and C) Educational Attainment. The online-survey-respondents' response will serve as a database for policymaking and other relevant government and non-government actions related to a pandemic in the region.

Research Locale

Region 5 – Bicol is one of the 17 areas of the Republic of the Philippines that constitutes six provinces, i.e., Albay, Camarines Norte, Camarines Sur, Sorsogon, and the island-provinces of Catanduanes and Masbate. The entire land area of the Bicol Region is 6,807.9 sq. mi. or 5.9% of the whole land and aquatic zone of the country.

MATERIALS AND METHOD

Nature of Research

The study used a descriptive-quantitative research design to describe and consider the adaptation of the residents in the Bicol Region, Philippines, to the COVID-19 Pandemic.

Sampling Design

The universe of the research consists of Bicolanos that is affected by this pandemic and presently undergoing community quarantine in Bicol Region, Philippines, as of this writing in observance with the measures of the Philippine Government in a fighting pandemic. The circumstances required that the data gathering can be carried on the internet only. This writer obtained the research data through a survey created using Google Forms. For the voluntary participation of the respondents for this survey in the core of community quarantine implementation, the study uses text messages using a cellphone, email, and social media accounts. And since the researcher could not determine the participants in the digital environment, convenience sampling and snowball sampling were used in data collection because they are the appropriate sampling procedures in this study in the event of community quarantine operation.

Emerson [21] and Sedgwick [22] said that Convenience sampling is the identification of individuals who are appropriate for the criteria of being a respondent of the study identified in any way possible. Further, Snowball sampling is also applied in this research since the researcher asked the participants to identify friends and share the link of the electronic questionnaire and contribute to the study to assist the researcher in getting the desired number of respondents.

The data collection process started on 4/22/2020 at 13:03:38 and ended on 4/27/2020 at 5:33:34 with a 6-day duration. In this interval of time, it obtained 328 valid online responses. The considered number of online reactions is enough for the population of the research.

Survey Instrument

A research tool item-statements from previously conducted researches on COVID-19 surveys [10]; [23] were customized, simplified, and adapted to harmonize the level of understanding among the targeted respondents. The final version of the electronic research instrument is available online during the 6-day gathering of the data with the link https://forms.gle/SmGDWErJTu7768kj8. The survey instrument starts with a letter to the respondents explaining the reason for the research and assuring them about the confidentiality of the gathered data observing the ethical considerations of research. Followed by the Part-I of the questionnaire that is composed of the profile of the respondents in terms of A) Age; B) Sex; and C) Educational Attainment. The second part of the questionnaire is the 12 statements describing their level of agreement and disagreement about their Adaptation to the COVID-19 Pandemic.

To ensure the reliability of the questionnaire, this researcher used the method of measuring the internal consistency known as Cronbach's Alpha Coefficient. The actual data gathered from the 328 respondents through the survey was estimated using Cronbach's Alpha Coefficient. The usually approved lower limit is 0.77 [24]. The Cronbach's Alpha Coefficient results of the 12-items questionnaire are 0.82, which is higher than the threshold of 0.77, and therefore the research instrument was believed to be reliable.

Statistical Treatment

The researcher weighted the profile of the respondents using mean averages and percentages. In the determination of the adaptation of the residents in the Bicol Region, Philippines, to the COVID-19 Pandemic, this writer used mean averages and the standard deviation.

In describing the degree of agreement and disagreement about the indicators for Adaptation to the COVID-19 Pandemic, this paper used a 5-point Likert scale of *Strongly Disagree* (1), *Moderately Disagree* (2), *Neutral* (3), *Moderately Agree* (4), and *Strongly Agree* (5).

RESULTS AND DISCUSSION

Respondents

Table 1 shows that most of the respondents were aged ranged from 29 years old and below. In terms of their sex, the female is higher in number than male. And most of them are with college-level education attainment.

Table 1: Profile Distribution of the Respondents

Profile	n	%
Age		
-29 and below	187	57.01
-30 to 39 age range	75	22.87
-40 to 49 age range	43	13.11
-50 to 59 age range	18	5.49
-60 and above	5	1.52
Sex		
-Male	122	37.20
-Female	206	62.80
Educational Attainment		
-Elementary Level	11	3.35
-High School Level	59	17.99
-College Level	164	50.00
-TESDA Certificate Holder	5	1.52
-Post-Graduate	89	27.13
Total	328	100

Table 2. Indicators for the Adaptation of the Residents in Bicol Region, Philippine to the COVID-19 Pandemic

Item No.	Indicators	Mean	Standard Deviation
1	I consider the warnings of the authorities about COVID-19.	4.73	0.59
2	I make myself informed about the COVID-19 pandemic.	4.69	0.63
3	I have personal protective materials/equipment.	3.65	1.13
4	I follow hygienic rules to protect me from COVID-19.	4.68	0.64
5	I practice social distancing when I am in public places.	4.73	0.58
6	I stay at home to evade COVID-19 infection.	4.71	0.71
7	The people I live with also comply with sanitary measures.	4.60	0.74
8	I am not dependent on the relief given by the government and non-government agencies.	4.17	1.01
9	I still have the means and resources to buy foodstuff for me and my family to survive in this COVID-19 pandemic.	3.84	1.03
10	I can still afford to extend my help to others by giving them food packs and other needed items.	3.55	1.20
11	I have access to medical services if needed amid the COVID-19 Pandemic.	3.50	1.07
12	I have the necessary gadgets to communicate with my family, relatives, and friends and to access digital information for COVID-19 updates.	4.57	0.75

Table 2 presents the adaptation of the residents in the Bicol Region, Philippines, to the COVID-19 Pandemic. Mean averages, and the standard deviation from the answers to 12 statements showed that the respondents 'moderately agree' to 'strongly agree' to the given statements.

Similarly, the resident-respondents showed 'strong agreement' on the seven adaptation-indicators with their respective average mean and standard deviation. These are as follows: First, I consider the warnings of the authorities about COVID-19 ($\bar{x}$=4.73, σ=.59); Second, I practice social distancing when I am in public places ($\bar{x}$=4.73, σ=.58); Third, I stay at home to evade COVID-19 infection ($\bar{x}$=4.71, σ=.71); Fourth, I make myself informed about the COVID-19 pandemic ($\bar{x}$=4.69, σ=.63); Fifth, follow hygienic rules to protect myself from COVID-19 ($\bar{x}$=4.68, σ=.64); Sixth, The people I live with also comply with sanitary measures ($\bar{x}$=4.60, σ=.74); And the last, I have the necessary gadgets to communicate with my family, relatives, and friends and to access digital information for COVID-19 updates ($\bar{x}$=4.57, σ=.75).

While the remaining five statements got a 'Moderate agreement' about the adaptation-indicators, first, I have access to medical services if needed amid the COVID-19 Pandemic. ($\bar{x}$=3.50, σ=1.07); Second, I can still afford to extend my help to others by giving them food packs and other needed items. ($\bar{x}$=3.55, σ=1.20); Third, I have personal protective materials/equipment ($\bar{x}$=3.65, σ=1.13); Fourth, I still have the means and resources to buy foodstuff for me and my family to survive in this COVID-19 pandemic ($\bar{x}$=3.84, σ=1.03). Last, I am not dependent on the relief given by the government and non-government agencies ($\bar{x}$=4.17, σ=1.01).

The findings imply that the respondents are not only are compliant with the authorities, but they are also observant with the precautionary measures to protect themselves from contamination of the virus. They observe social distancing, and as much as necessary, stay at to avoid contamination. The study of Wang [25]

reported that more than half of the respondents cleaned their hands with soaps after touching impure objects, wrapped their mouth once coughing or sneezing, and wore masks as protection schemes as an adaption to avoid COVID-19 infection.

Relatedly, a study conducted in Turkey confirmed that the people trusted the government officials and health experts and believed in their accuracy of the decisions in the fight against pandemic [10]. And considering the response, resident-respondents exhibited trust and confidence to the Government in the battle against COVID-19.

Yet, they are not dependent on the relief given by the Government and non-government agencies because they are aware of the limitations of the Government. It is evident in the region through news reports and other social media information that despite the effort of the Government to assist, the economic needs of the people cannot be provided totally because of the limited resources of the Government and broad scope of the effect of this crisis. The Department of Social Welfare and Development (DSWD) recognizes its gaps and shortcomings in dispensing emergency funds. The 'Bayanihan to Heal as One Act' offers guidelines for financial sustenance to the poor and vulnerable Filipino families that are affected by this lockdown through Social Amelioration Program (SAP).

While the statement: I have access to medical services if needed amid the COVID-19 Pandemic, got the least average response with a 'moderately agree' response descriptor may also show that they have the least expectations on their capacity to access medical services during a pandemic. More so, it may imply their least confidence in the excellence of medical services and facilities of the medical experts.

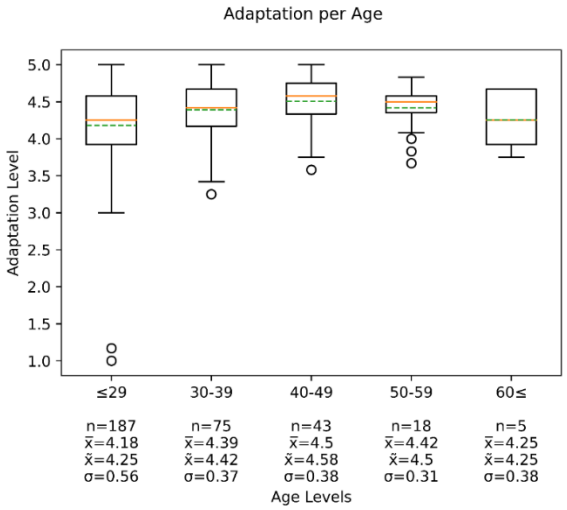

Figure 1. Boxplot for Adaptation per Age Levels

This paper presents the box plot in figure 1, visually showing the parallel groups of data. The box plot employs the median, the approximate quartiles, and the lowest and highest data points to convey the distribution of data values [26]-[27].

Figure 1 shows that the plots for Adaptation per Age Levels that includes total number of resident-respondents, average responses, median and the standard deviation according to their respective age bracket: 29 and below (n=187, $\bar{x}$=4.18, $\tilde{x}$=4.25, σ=.56); 30-39 (n=75, $\bar{x}$=4.39, $\tilde{x}$=4.42, σ=.37); 40-49 (n=43, $\bar{x}$=4.50, $\tilde{x}$=4.58, σ=.38); 50-59 (n=18, $\bar{x}$=4.42, $\tilde{x}$=4.50, σ=.31); and 60 and above (n=5, $\bar{x}$=4.25, $\tilde{x}$=4.25, σ=.38).

Considering the data distributions excluding outliers, it portrays that when one gets older, the more they are consistent in their adaption to COVID-19 that substantiates with Zettler [28] study revealing that age predicts the high risks of elders suffering from COVID-19 pandemic. That's why they are more careful with health risks, while young individuals are likely to decrease from restriction to protect themselves.

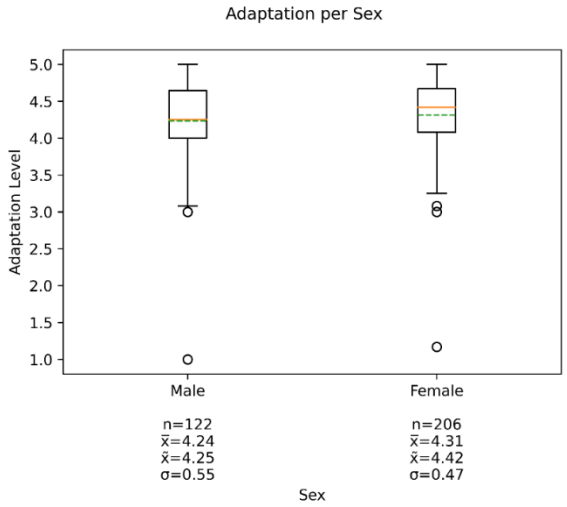

Figure 2. Boxplot for Adaptation per Sex

Figure 2 shows that the plots for male and female are more or less the same. It means that both male (n=122, $\bar{x}$=4.24, $\tilde{x}$=4.25, σ=.55) and female (n=206, $\bar{x}$=4.31, $\tilde{x}$=4.42, σ=.47) resident-respondents have almost the same adaptation level to COVID-19. This finding runs parallel with Alon [29] paper that also concluded with thoughts on policy options centered on reducing gender inequality and attend other challenges. It is therefore arguable that COVID-19 adaptation does not differ in sex.

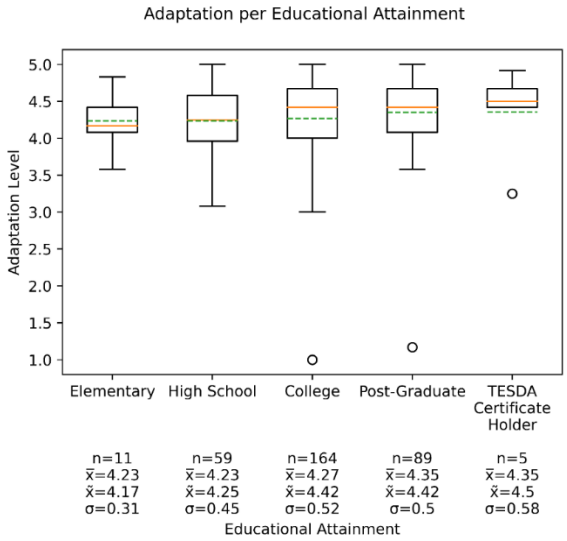

Figure 3: Boxplot for Adaptation per Educational Attainment

Figure 3 displays the plots for Adaptation per Educational Attainment that includes the needed data according to their respective category: Elementary (n=11, $\bar{x}$=4.23, $\tilde{x}$=4.17, σ=.31); High School (n=59, $\bar{x}$=4.23, $\tilde{x}$=4.25, σ=.45); College (n=164, $\bar{x}$=4.27, $\tilde{x}$=4.42, σ=.52); Post Graduate (n=89, $\bar{x}$=4.35, $\tilde{x}$=4.42, σ=.50); and TESDA Certificate Holder (n=5, $\bar{x}$=4.35, $\tilde{x}$=4.50, σ=.58).

Considering the data allocations excluding outliers, it portrays that when one gets a higher level in education, inconsistencies with the adaptation to the COVID-19 pandemic are evident. It implies that resident-respondents with higher education seem to be unstable in their adaptation, particularly economically, because they might lose their income because of the community quarantine. In contrast, the resident-respondents on TESDA have technical skills that might continue their source of revenue amid community quarantine, and that is why they stable in their adaptation to COVID-19. Further, the data denotes that the Educational Attainment under Elementary and High School Levels indicated a lower mark of adaptation, which could be because these respondents are mostly still dependent on parents and/or guardians who bear most of the responsibilities in their day to day lives. These responsibilities include buying supplies, and buying supplies means that they have to go out, and going out means that they have to conform to specific policies like social distancing. These policies do not apply to individuals who stay quarantined in their homes, and they, therefore, have the privilege to not worry about those specific rules. Cao [12] argued that students are still reliant on the support of their parents during the COVID-19 outbreak, and therefore, they are not worried about themselves.

CONCLUSION AND RECOMMENDATION

The outcomes of this baseline evidence study revealed that the 328 resident-respondents 'moderately agree' to 'strongly agree' to the given statements adaptation-indicators to the COVID-19 Pandemic. Interestingly, the resident-

respondents are not only compliant with the authorities, but they are also observant with the precautionary measures to protect themselves from contamination of the virus. They also exhibited trust and confidence to the Government in the battle against COVID-19. Yet, they are aware of the limitations of the Government more so, with the medical services and facilities of the medical experts. It is evident in the region through news reports and other social media information that despite the effort of the Government to assist, economic needs of the people cannot be provided totally because of the limited resources of the Government and broad scope of the effect of this crisis.

Considering the Adaptation per Age Levels, it depicts that when one gets older, the more they are consistent in their adaption to COVID-19. The advanced in age displays a more vigilant with health risks, unlike young individuals are tend to decrease from restriction to protect themselves. In terms of the sex of the residents-respondents revealed almost the same adaptation level to COVID-19. COVID-19 adaptation, therefore, does not differ in sex. Further, considering the data allocations in terms of educational attainment, it describes that when one gets a higher level in education, inconsistencies with the adaptation to the COVID-19 pandemic are evident. It is assumed their involved responsibility in their family that may cause variance in their adaptations to an epidemic. And thus, the present study suggests capacitating healthcare services not only to lessen the dangers of scarcities of PPE at critical times [9]; to further reinforced and develop the availability of medical resources and public health services [2] and increase production of medical supplies [6] because of the rising of the healthcare scheme assures faster immunity among people against pandemic [14] that may also earn conviction among the people who are expecting from the government and medical authorities, particularly during a crisis. Practical investing in public health infrastructure and medical competence is critical to respond effectively to epidemics like COVID-19. Continue to develop international coordination, and communication to be even better prepared to act on future recent public health risks [30]. Lastly, policies to be formulated related to a pandemic may be inclusive across age, sex and educational levels.

This study has limitations: First, the author did not systematically identify respondents according to their classifications but and instead used convenience and snowball sampling procedures which are also justifiable according to the design and environmental considerations of the study. Another limitation is, the interpretations of the gathered data rely purely on the online responses of the respondents where this writer may have no means to counter-validate their answers because community quarantine is still on-going as of this writing. In future research, this writer will consider aspects of the mitigation strategies among government officials and medical specialists as essentials for pandemic policies. Also, other community issues as part of more significant complexity is considered to lessen the exponential impact of a pandemic.

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