Original Article

Check for updates

Investigating the Effect of Social Support, Healthy Behavior, and Religious Coping on Free COVID-19 Pandemic through Immunity in West Sumatera, Indonesia

Isramilda Isramilda [a,*], Lebrata Lebrata [a], Indrayani Indrayani [a] and Bambang Satriawan [a]

[a] Department of Management, Faculty of Economics, Universitas Batam, 29432 Kota Batam, Kepulauan Riau, Indonesia.

* Correspondence: isramilda@univ.batam.ac.id

Abstract

Coronaviruses are a large family of viruses that cause disease in humans and animals. Data from West Sumatra captures that until December 31, 2020, there were 23,441 confirmed cases of COVID-19 and 21,601 people recovered. Does the recovery from COVID-19 have anything to do with social support, health behaviors that are always recommended by Regional Leaders in West Sumatra, Religious coping for the people of West Sumatra which affects the free pandemic of COVID-19? To answer this phenomenon, it is necessary to investigate the effect of social support, healthy behavior, religious coping on COVID-19 Pandemic free through immunity in West Sumatra, Indonesia.as a population, with the Slovin formula sample Becomes 174 respondents. The recovery of COVID-19, whether it has to do with social support, religious coping in which West Sumatra, and health behaviors that are always recommended by the Regional Leadership in the West Sumatra, give rise to immunity so that it influences the pandemic COVID-19. The research model used is a mixed-method, by combining quantitative with SEM software AMOS-24 and qualitative with interviews with respondents and the community as well as the COVID-19 West Sumatera Cluster Team. The result indicates that changes in immunity are influenced by religious coping, healthy behavior and social support is 95.60%, the remaining 3.40% is influenced by other variables not included in this study. changes in the Free COVID-19 pandemics are influenced by 100% religious coping, healthy behavior, social support and immunity.

1. Introduction

The coronaviruses are a large family of viruses that cause disease in humans and animals (Wimalawansa, 2020). In humans, it usually causes respiratory infections, ranging from common influenza to serious diseases such as middle east respiratory syndrome (MERS) and severe acute respiratory syndrome (SARS). A new type of coronavirus that was discovered in humans since the outbreak occurred in Wuhan China, in December 2019. Then it was named Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-COV2), and it caused Coronavirus Disease-2019 (COVID-19). The transmission process between humans is quite high, causing this virus to quickly spread to various countries, including Indonesia].

The novel coronavirus is an extraordinary challenge for the welfare of every human being in the world (Wu et al., 2020). There are various negative effects caused by the spread of the novel coronavirus to various countries in the world. Individuals infected with the novel coronavirus can experience damage to the cardiovascular system (Madjid et al., 2020), pneumonia (Jin et al., 2020), and death (Barro et al., 2020). Another effect of the novel coronavirus is the mandatory physical distancing which causes various socio-economic and psychological effects (Rishi et al., 2021).

The Ministry of Health reported that on August 16, 2020, there were 137,468 confirmed cases of COVID-19 with 6,071 cases of death with CFR 5.81% in Indonesia. As of September 8, 2020, WHO reported 27,032,617 confirmed cases, with 881,464 deaths, 3.3% of the

death rate worldwide The United States has increased and is the country with the most confirmed cases of 6,189,488 people, and 187,541 deaths soul in the case of COVID-19. Followed by Brazil and India which occupy the countries with the second and third most confirmed cases. Indonesia is in the 24th position with 196,989 confirmed cases, 140,652 recovered cases (71.4%), and 8,130 deaths (4.1%) (World Health Organization, 2020).

Data from West Sumatra states that until December 31, 2020, Does the recovery of COVID-19 have anything to do with social support, health behaviour that has always been recommended by Regional Leaders in West Sumatra, religious coping for the people of West Sumatra which affects the freedom of the COVID-19 Pandemic? Thus, it is important to investigate the effect of social support, healthy behavior, religious coping on COVID-19 Pandemic free through immunity in West Sumatra, Indonesia.

2. Literature Review

2.1. Social support

Social support is various forms of care, support and assistance provided by other individuals or groups to individuals (Sarafino & Smith, 2014). Social support can make individuals feel loved, appreciated, respected, and involved (Foster et al., 2017; King et al., 1993). Social support is a reciprocal interaction. which is done by some individuals who care for and love each other (Feldman, 2015). Sarafino & Smith (2014) state that there are four aspects to social support, namely: (1) Emotional support, namely support in the form of care, attention, motivation, empathy and encouragement to individuals; (2) Instrumental support, namely real support provided directly to help individuals; (3) Informative support, namely support in the form of advice, directions, information and advice on what individuals should do; and (4) Friendship or togetherness support, namely support in the form of time spent giving a sense of togetherness

2.2. Religious coping

Religious coping behaviors, such as praying, are usually carried out for managing distressing and stressful situations (Jong, 2020). Many research studies have confirmed the effectiveness of such religious coping behaviors in helping people manage their feelings of distress and anxiety, as they allow people to cope with guilt, submit totally to God's will, view affliction in a positive light, and control their fear (Chatard et al., 2020; Musa et al., 2016). Religious coping has been found to be a buffer against death anxiety and may work as a mechanism that interrupts the cycle of the negative consequences of death anxiety (Hoelterhoff & Chung, 2013). Religious coping enhances optimism and hope, which in turn inhibit death anxiety (Vishkin & Tamir, 2020).

2.3. Healthy behavior

There are still many Indonesian people who do not obey the government's call to tackle the coronavirus pandemic, caused by one concept in psychology called cognitive bias. Cognitive bias is a systematic error in thinking that influences the decisions and judgments a person makes (Olaborede & Meintjes-Van der Walt, 2020; Weinstein, 2002). The right types of cognitive biases to explain this phenomenon are optimism bias, emotional bias, and the Dunning-Kruger effect (Charman et al., 2019). To be able to overcome this cognitive bias the steps that Indonesian people can take are: not to decide in an urgent time; avoid making decisions when someone is cognitively doing more than one job; do not decide at night if someone is an active person or a work that starts in the morning (and vice versa); be careful in making decisions when you are happy and think based on data and facts. In addition to maintaining mental well-being, the aspects that can be done concerning the first, a happy person is someone who understands the meaning in his life. These two people maintain themselves in positive emotions. The third is a person who continues to hone his spiritual self. The first happy person is someone who understands the meaning in his life, the second person who keeps himself in positive emotions, and the third is the person who continues to hone his spiritual self (Asutay et al., 2021).

2.4. Immunity

Maintaining immunity or endurance is one way that can be done to avoid viral infections and diseases, including COVID-19. The body's immunity is critical, especially in the middle of the coronavirus pandemic (Mishra & Patel, 2020). Humans have two kinds of immunity, innate immunity, and adaptive immunity. Innate immunity is a natural immunity that acts as the body's first defence system against all germs (antigens) that enter the body. At the same time, adaptive immunity is a more specific body defence system that arises from the stimulation of specific pathogens like flu, pneumonia, and others. Both become the essential part of the human immune system that protects against pathogens; there are many things that can be done to enhance the body's immunity.

Also, to comply with government recommendations related to COVID-19 prevention efforts such as physical distancing, thorough handwashing with soap, and wearing masks, other steps can be taken by stopping smoking. Smoking can damage physical barriers such as the mucosa, which keeps harmful substances from the outside. Also, avoid using materials that can irritate the skin because it can damage the body's physical barrier. Enhancing immunity can also be done by paying attention to nutrition intake. Several nutrients that can improve the work of macrophages or cells that function as the body's defenses. Foods that contain vitamins A, C, E, and D can improve the work of immune cells and

natural immune work. Adding the consumption of supplements is also recommended if you feel the vitamin needs have not been fulfilled from daily food. At the same time, immunostimulant consumption may be given to those who need increased endurance. For example, in people with excessive physical activity, they are forced to work outside the home or people with weak immune systems such as comorbidities (comorbidities). Managing stress is also essential.

Because stress affects the body's immunity, if someone is stressed, then the body will release hormones to relieve stress. However, this condition has the effect of reducing the body's immunity. Therefore, people are not easily stressed to face this uncertain situation amid the COVID-19 pandemic. They were doing physical activities such as sports is also essential to maintain immunity. Exercise should be done for 30 minutes at least three times a week with moderate intensity. By exercising will help improve immunity and maintain physicality. Miller et al., (2020) state that exercise should be done for 30 minutes at least three times a week with moderate intensity. By exercising will help improve immunity and maintain physicality. There are still many knowledge gaps in this field, so further studies are needed.

2.5. Free COVID-19 pandemics

The description of a country that is good, just, prosperous, and free from all kinds of plague in the redza of Allah, is mentioned in the Qur'an: "Verily for the Saba ', there is a sign (God's power) in their dwellings, two gardens on the right and the left. (to them it was said): "Eat by you from the blessings (bestowed) of your Lord and give thanks to Him. (Your land) is a good country and (your God) is God the Most Forgiving ". (Surat Saba: 15in the Ministry of Religious, 2016) The State of Saba '(occupying an area which in modern geographic maps is now Yemen and Oman) is known as a prosperous country, occupying a green area with abundant agricultural output.

The Koran calls it "Baldatun Toyyibatun wa Rabbun Ghofur,"; a country full of goodness, prosperity, peace, security, and forgiveness from Allah SWT. This prosperity cannot be separated from the new leadership of Queen Bilqis, who later formed a coalition with the advanced kingdom of Solomon in around 900 BC. Hence, it became a kingdom of faith and thanks to Allah SWT. Faith and gratitude intend to build leading civilizations with advanced technology for the welfare of society. This can be seen with the completion of large dam construction in the year 800-700 BC called the Ma'arib dam. The most sophisticated and in ancient times recorded by history. The technology for building the dam was likely supported by engineers from the kingdom of the Prophet Sulaiman.

A high level of political integration involves the leading political figures (Prophet Sulaiman and Ratu Bilqis), technocrats, bureaucrats, and the use of advanced science and technology for the welfare of the people who need to be emulated. Selfless integration of worldly passions. Meiyanto (2013). The phenomenon of the coronavirus outbreak (COVID-19) that emerged in early 2020 is increasingly making concern around the world. How not, the virus that first appeared in the city of Wuhan in China's Hubei province has taken its toll. As a result of this virus, besides casualties that continue to fall, which numbers have approached nearly hundreds of thousands of lives, both dead and infected, millions of other people are threatened by this deadly plague. Recorded isolated, thousands of flight routes were closed, and the State of Saudi Arabia temporarily halted the arrival of pilgrims to anticipate the spread of the plague in two holy lands. (Jabbar, 2020) Responding to this global epidemic, as Muslims, we must return to the teachings of our religion. Moreover, here are some tips that we can take as a Muslim in responding to the coronavirus outbreak that is currently endemic.

3. Materials and Methods

3.1. Research design

The mixed method consists of a sequential explanatory model, a sequential exploratory model, a concurrent triangulation design, and a concurrent embedded model. The sequential explanatory model is a combination of quantitative and qualitative research sequentially, firstly done quantitative research, then conducted qualitative research. After analysis, the results of quantitative and qualitative data will be entered into the matrix to see the comparison obtained. The sequential 26 exploratory model is a combination of the two research methods sequentially starting with qualitative research, and the second stage is quantitative research. The concurrent triangulation design is a balanced combination of two research methods using quantitative and qualitative methods. These methods are used together, at the same time, but independently to answer research problems. The concurrent embedded model is a merging of quantitative and qualitative research methods Wijaya (2019).

The method used is a qualitative interpretive approach explanatory to the topic of research methods (Zaluchu, 2018). Research procedures are the steps carried out in research in the form of research methods, population and sample (quantitative) or sample data sources (qualitative), research instruments, data collection techniques, and data analysis techniques (Sugiyono, 2014). The qualitative data analysis procedures are collecting data sourced from books, and research journals that are focused on the topic of research methods; Grouping the data into types of research (quantitative, qualitative, R&D); Discussion of the type of research method, and its suitability with the idea / title of the research to be discussed accompanied by examples of methods.

3.2. Population and sample

The population is a collection of the whole object measured in a study (Blumberg et al., 2014). This study was conducted on patients exposed to COVID-19 declared cured by December 10, 2020, when there was no significant addition of new COVID-19 cases, existing cases in West Sumatra, with a cure rate of 307 cases or 87.5%. The sampling technique is used in the category of non-probability sampling (Black & Champion, 2001; Blumberg et al., 2014). Following the specific sample, the characteristics are required, namely the features of the entire worker. The sampling technique selected is a non-probability technique that is judgmental (purposive). This is an example of a fact that has been established by those who will be taken as samples (Black & Champion, 2001).

The sample is an element of the population selected to represent the research (Cooper and Schindler, 2003: 82). In this research, the sample size is adapted to the analysis model used is the Structural Equation Model (SEM). In this regard, the sample size for SEM is used the model estimating the maximum likelihood estimation (MLE) 100-200 samples (Hair et al., 2017), or as much as 5 to 10 times of the number of parameters estimated (Ferdinand, 2006: 44). In this research, the number of respondents obtained was 307 respondents from COVID-19 patients in West Sumatra. Slovin used got names qualified to be used as samples are 174 respondents.

The data used in the procedure of collecting data in this research consists of primary data and secondary data. The primary data are obtained directly from the object of research, namely by sending questionnaires directly to potential respondents. Data score of respondents' answers to any further processed with statistical indicators Full Structural Equation Modeling (SEM) using AMOS software for Windows version 24 (Wibisono, 2017).

3.3. Data analysis

Data analysis was performed using the Structural Equation Model (SEM) method. The software used for structural analysis is AMOS * version 24 (Adi, 2019), namely:

1. Development of a theory-based model.
2. Making flowcharts (path diagrams).
3. Convert flowcharts into a series of structural equations.
4. Selection of input matrices and estimation techniques models built.
5. Assess the possibility of identification problems.
6. Evaluate the criteria for the goodness of fitness.
7. Model of interpretation and modification.

3. Results and Discussions

Quantitative research is independent to build objectivity and causal relationships, tend to generalize, and be free of values. At the same time, qualitative methods are interactive with data sources to obtain meaning.
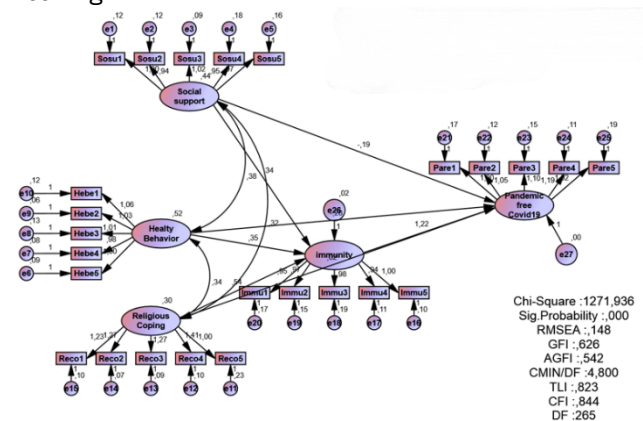

Figure 1. Result of structural equation model

Table 1. Result of hypothesis testing

Path analysis			Estimate	SE	CR
Immunity	<---	Religious Coping	0.536	0.105	5.085***
Immunity	<---	Social support	0.340	0.069	4.943***
Immunity	<---	Health Behavior	0.349	0.062	5.665 ***
Pandemic_Free_Covid19	<---	Social support	-0.186	0.112	-1.656
Pandemic_Free_Covid19	<---	Health Behavior	-0.275	0.108	-2.543**
Pandemic_Free_Covid19	<---	Religious Coping	0.017	0.167	0.102
Pandemic_Free_Covid19	<---	Immunity	0.217	0.258	4.714***

Table 1 shows the result of hypothesis testing. This study found that religious coping, social support, and healthy behavior have a significant relationship with immunity. The estimated value of religious coping is 0.536, standard error is 0.105 and critical ratio is 5.085 and significant at the level 1 percent. It means that by assuming an increase of 1 percent religious coping and the immunity would be increase as much as 53.6 percent. Further, the estimated value of social support is

0.340, standard error is 0.069 and critical ratio is 4.943 and significant at the level 1 percent. It means that by assuming an increase of 1 percent social support and the immunity would be increase as much as 34 percent.

Then, the estimated value of healthy behavior is 0.349, standard error is 0.062 and critical ratio is 5.665 and significant at the level 1 percent. It means that by assuming an increase of 1 percent healthy behavior and the immunity would be increase as much as 34.9

percent. Also, this study found that healthy behavior has a significant relationship with free COVID-19 pandemic. the estimated value of healthy behavior is -0.275, standard error is 0.108 and critical ratio is -2.543 and significant at the level 5 percent. It means that by assuming an increase of 1 percent healthy behavior and the free COVID-19 pandemic would decrease as much as 27.5 percent. Besides that, this study confirms that immunity mediates the relationship between religious coping, healthy behavior, and free COVID-19 pandemic.

Table 2. Result of squared multiple correlations.

Endogenous variables	Estimate
Immunity	0.956
Free COVID-19	0,984

Table 2 captures the result of square multiple correlation (SMC) for immunity and free COVID-19 pandemics. The result found that SMC for immunity is 0.956. It means that the variable of social support, health behavior and religious coping explained its relationship on immunity as much as 95 percent. The remaining of 0.044 or 4.4 percent is explained by other variables. Also, this study found that social support, health behavior and religious coping and immunity explained its relationship to free COVID-19 pandemic is 0.984. The remaining 0.016 or 1.6 percent is explained by other variables which are not included in this model.

Table 3. Result of goodness of fit model testing

GoF	Cut-Off Value	Results	Decision
Chi-square ($\chi2$)	Expected to Be Small	1271,936	Good
Relative Chi-square ($\chi2/$ df)	≤ 3:00	2,562	Good
Probability	> 0.05	0.00	Marginal
RMSEA	≤ 0:08	0.148	Not Good
GFI	≥ 0.90	0.626	Not Good
AGFI	≥ 0.90	0.542	Not Good
CFI	≥ 0.95	0.844	Marginal
TLI	≥ 0.95	0.823	Marginal

Table 4 describes that by observing the cut-of-value and goodness of fit of the model. The result indicates that only three criteria were fulfilled, and there are four margins, and one is less good from eight criteria used. Criteria fulfilled is Chi-square ($\chi2$) is good, Relative Chi-square ($\chi2/$ df) is good, and RMSEA, which is marginal GFI n AGFI, is not good, TLI, and CFI, probability is marginal. Because two criteria are fulfilled, and five margins of the eight criteria are required, the above model can be expressed as a good model.

4. Conclusions

This study concludes that religious coping, social support, and healthy behaviour have significant relationship with immunity. Also, healthy behaviour has significant relationship with free COVID-19 pandemic.

Besides that, this study confirms that immunity mediates the relationship between religious coping, healthy behaviour, and free COVID-19 pandemic. Of these, the authors recommend improving the hand hygiene behavior by combining public awareness campaigns by placing hand sanitizers prominently and asking politely can signal to patients or clients that using hand sanitizers is desirable.

Also, preventing touching facial behavior alone is not enough - change the physical and social environment to change people's behavior, for example, by creating new norms as substitute behavior such as touching the face with arms or always providing tissue. Helping others to engage in long-distance social networking and maintaining a daily routine tends to help people to overcome the adverse psychological effects of isolation. However, providing additional mental health support is still needed. Emphasizing the nature of togetherness in dealing with problems and highlighting the risk of transmitting the virus to the most vulnerable groups can promote cooperative behavior - but do not let the behavior get out of control and balance anxiety with optimism that individual behavior will be useful in overcoming the spread of the coronavirus - COVID-19 (Timmons, 2020).

References

Asutay, M., Buana, G. K., & Avdukic, A. (2021). The impact of Islamic spirituality on job satisfaction and organisational commitment: exploring mediation and moderation impact. *Journal of Business Ethics*, *181*(4), 1–20.

Barro, R. J., Ursúa, J. F., & Weng, J. (2020). *The coronavirus and the great influenza pandemic: Lessons from the "spanish flu" for the coronavirus's potential effects on mortality and economic activity*. National Bureau of Economic Research.

Black, J. A., & Champion, D. J. (2001). Methods and problems of social research. In *Bandung: Refika Aditama*. Refika Aditama.

Blumberg, B., Cooper, D., & Schindler, P. (2014). *Business Research Methods*. McGraw Hill.

Charman, S., Douglass, A., & Mook, A. (2019). Cognitive bias in legal decision making. *Psychological Science and the Law*, 30–53.

Chatard, A., Renoux, M., Monéger, J., & Selimbegovic, L. (2020). *Physical warmth attenuates ethnocentric bias under mortality salience: An embodied terror management perspective*. https://doi.org/10.31234/osf.io/x6m8u.

Feldman, R. (2015). Mutual influences between child emotion regulation and parent–child reciprocity support development across the first 10 years of life: Implications for developmental psychopathology. *Development and Psychopathology*, *27*(4), 1007–1023.

Foster, C. E., Horwitz, A., Thomas, A., Opperman, K., Gipson, P., Burnside, A., Stone, D. M., & King, C. A. (2017). Connectedness to family, school, peers, and community in socially vulnerable adolescents. *Children and Youth Services Review*, *81*, 321–331.

Hair Jr, J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, *1*(2), 107–123.

Hoelterhoff, M., & Chung, M. C. (2013). Death anxiety and well-being; coping with life-threatening events. *Traumatology*, *19*(4), 280–291.

Jin, Y.-H., Cai, L., Cheng, Z.-S., Cheng, H., Deng, T., Fan, Y.-P., Fang, C., Huang, D., Huang, L.-Q., & Huang, Q. (2020). A rapid advice guideline for the diagnosis and treatment of 2019 novel coronavirus (2019-nCoV) infected pneumonia (standard version). *Military Medical Research*, *7*(1), 1–23.

Jong, J. (2020). Death anxiety and religious belief: A critical review. *The Science of Religion, Spirituality, and Existentialism*, 21–35.

King, K. B., Reis, H. T., Porter, L. A., & Norsen, L. H. (1993). Social support and long-term recovery from coronary artery surgery: effects on patients and spouses. *Health Psychology*, *12*(1), 56.

Madjid, M., Safavi-Naeini, P., Solomon, S. D., & Vardeny, O. (2020). Potential effects of coronaviruses on the cardiovascular system: a review. *JAMA Cardiology*, *5*(7), 831–840.

Miller, C. T., Fraser, S. F., Selig, S. E., Rice, T., Grima, M., van den Hoek, D. J., Ika Sari, C., Lambert, G. W., & Dixon, J. B. (2020). Fitness, strength and body composition during weight loss in women with clinically severe obesity: a randomised clinical trial. *Obesity Facts*, *13*(4), 307–321.

Mishra, S., & Patel, M. (2020). Role of nutrition on immune system during COVID-19 pandemic. *Journal of Food Nutrition and Health*, *3*(2), 1–6.

Musa, A. S., Pevalin, D. J., & Shahin, F. I. (2016). Impact of spiritual well-being, spiritual perspective, and religiosity on the self-rated health of Jordanian Arab Christians. *Journal of Transcultural Nursing*, *27*(6), 550–557.

Olaborede, A., & Meintjes-Van der Walt, L. (2020). Cognitive bias affecting decision-making in the legal process. *Obiter*, *41*(4), 806–830.

Rishi, P., Acharya, S., Das, S., & Sood, A. (2021). Varying psychological impacts of COVID-19 and functional/dysfunctional coping strategies: a mixed-method approach. *Journal of Health Management*, *23*(2), 226–239.

Sarafino, E. P., & Smith, T. W. (2014). *Health psychology: Biopsychosocial interactions*. John Wiley & Sons.

Sugiyono, M. (2014). *Educational Research Methods Quantitative, Qualitative Approach and R&D*. Alfabeta.

Vishkin, A., & Tamir, M. (2020). Fear not: Religion and emotion regulation in coping with existential concerns. In *The science of religion, spirituality, and existentialism* (pp. 325–338). Elsevier.

Weinstein, I. (2002). Don't believe everything you think: Cognitive bias in legal decision making. *Clinical L. Rev.*, *9*(783), 783–834.

Wibisono, C. (2017). *Research methods (based quantitative and qualitative)*. K-Media,.

Wimalawansa, S. J. (2020). Global epidemic of coronavirus—Covid-19: what can we do to minimize risks. *European Journal of Biomedical and Pharmaceutical Sciences*, *7*(3), 432–438.

World Health Organization. (2020). *Coronavirus disease (COVID-19) advice for the public?* https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public

Wu, F., Zhao, S., Yu, B., Chen, Y.-M., Wang, W., Song, Z.-G., Hu, Y., Tao, Z.-W., Tian, J.-H., & Pei, Y.-Y. (2020). A new coronavirus associated with human respiratory disease in China. *Nature*, *579*(7798), 265–269.

Zaluchu, Z. (2018). *Systematic Research and Quantitative Data Analysis*. Golden Gate Publishing.