# THE INFLUENCE OF INFORMATION SOURCES TOWARD KNOWLEDGE, ATTITUDE, AND STUDENT ACTION UNDER COVID-19

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## ABSTRACT

**Background:** This purpose of this research is to determine the effect of Covid-19 information sources on student's knowledge, attitudes and actions. **Methods:** This research is Quantitative research and used cross-sectional method with Google Form questionnaire. Respondents were 303 active students in some universities in Indonesia. The variable independent of this study is the Covid-19 information source, which can be identified by providing several sources of information received by respondents. The variable dependent of this study are knowledge, attitudes, and actions. Data collected was analysed using Structural Equation Modelling (SEM) analysis on IBM® SPSS AMOS version 23.0. **Results:** The result of this research is social media has the highest value of information access ease of all information source options provided with a percentage of 97% of the total 303 respondents, then the source of information from the government with a percentage of 93.7% and information sources from tv 86.1%. The value (P) explains the influence of social media on significant student knowledge. Estimate explains the weight of influence (Regression Weights) where social media negatively affects the level of student knowledge. Grades (P) also explains the effect of government information knowledge significant student. Estimate explains the weight of influence (Regression Weights) where government information has a positive effect on the level of student knowledge. The value (P) explains the influence of attitude towards student actions significantly. Estimate explains the weight of influence (Regression Weights) where attitudes have a positive effect on the level of student action. The most accessible source of information is social media. **Conclusions:** Social media information sources have a negative effect on the level of student knowledge. Government information sources have a positive effect on the level of student knowledge. Attitude has a positive effect on student actions. it needed that student's collage are expected to be able to access information about Covid-19 through the official website provided by the government.

**Keywords:** Information Sources, Knowledge, Attitude, Covid-19

## INTRODUCTION

Plague is an outbreak of an infectious disease in a society where the number of sufferers increases significantly more than normal in times and certain regions and can cause havoc. A pandemic is a plague that covers a large area [1]. Since 11 March 2020, WHO has determined that Covid-19 is a global pandemic case [2]. The designation of a pandemic refers to a disease that spreads to many people in several countries at the same time. Disease coronavirus (Covid-19) is an infectious disease caused by a corona virus, a new

virus was first discovered in Wuhan, China [3]. Most people infected with this virus. Older people and those who have basic medical problems such as cardiovascular disease, diabetes, chronic respiratory diseases, and cancer are more likely to develop serious illnesses. The number of Covid-19 deployments has increased significantly and is continuing globally. As of May 9, 2020 there were 3.862.676 positive cases of Covid-19 had been confirmed in 215 countries, including Indonesia [4]. In Indonesia, on May 9, 2020, there were 13.695 positive cases of Covid-19, with 2.607 patients recovering, and 959 death [5].

The education sector is one of the fields affected by this global pandemic. The impact leads to the closure of schools and universities. On 4 March 2020, UNESCO (United Nations Educational, Scientific, and Cultural Organization) suggested using distance learning and using platform educational that schools and teachers could use to reach students from a distance and limit disruption in education [6]. The Indonesian Ministry of Education and Culture is taking the policy as a guide in dealing with the ongoing global pandemic in the education sector [7]. In addition, the increase in Covid-19 cases has been accompanied by increased public misinformation regarding the basic facts of the corona virus [8][18]. The impact that occurred was within a week after the confirmation of the first patient positive Covid-19 in Indonesia, the news from various media was full of the development of the virus, including prevention efforts, patient identity, to the possibilities that might occur either health, economic and social aspects. The news will indirectly influence, cause panic and public concern [9]. In Indonesia Coronavirus data transparency was still insufficient as seen from the information and data on the official Covid-19 website. Therefore, people feel confused in finding information about the pandemic [10]. The news

circulating could mix between valid news and hoax news. It would make miss information to society. In the case of Covid-19, this misinformation comes in many forms [11]. Sources of information that are valid and do not contain hoaxes are needed in this global pandemic. For this reason, this study was conducted to determine the effect of sources Covid-19 information on students' knowledge, attitudes and action.

## METHODS

This research was conducted using quantitative methods with cross-sectional. Filling out the questionnaire was done online through Google Form. Respondents were active students in some universities in Indonesia who were taking active in course. The variable independent of this study was about Covid-19 information source, which can be identified by providing several sources of information received by respondents. The options consist of TV, radio, social media, printed media, heads of household / family, friends, government, religious leaders, and leader community. The variable dependent of this study were knowledge, attitudes, and actions. Knowledge was gained from giving 10 questions question with true answer value = 1 and wrong answers= 0. Attitude was obtained from giving 10 statements with four scales, 1,2,3,4 consisting of strongly agree, agree, disagree and strongly disagree. The more positive in the context of the answer was the greater the value. The action was obtained from giving 26 questions with good answer value = 1 and bad = 0. Total respondents were 303 respondents. Data analysis in this study used Structural Equation Model (SEM) which is operated through the IBM® SPSS AMOS version 23.0 program. SEM had the ability to display a comprehensive model together with its ability to confirm the dimensions or factors of a concept through in an empirical indicator and its ability to measure the influence between factors that theoretically exist. Some reasons for using

the SEM program as an analysis tool were that SEM was suitable for: (a). Confirming the unidimensionalization of various indicators for a construct / concept / factor; (b). Testing the suitability / accuracy of a model based on the empirical data examined; (c). Testing the suitability of the model as well as the causal relationship between factors built / observed in the research model.

**RESULTS**

The level of respondent's knowledge of Covid-19 can be seen in Table 1. As a result, the level of knowledge from the TV source with the highest value of 145 respondents of the total 261. The value of ease of access to information sources received from total respondents was 86.1%. The level of knowledge of respondents about Covid-19 from radio sources with the highest value of 16 respondents from a total of 22 respondents. The value of ease of access to information sources received from the total respondents was 7.3%. The level of knowledge of respondents about Covid-19 from social media sources with the highest value of 157 respondents from a total of 294 respondents. The value of ease of access to information sources received from total respondents was 97%. The level of knowledge of respondents about Covid-19 from print media sources with the highest value of 157 respondents from a total of 294 respondents. The value of easy access to information sources received from the total respondents who chose was 13.2%. The level of knowledge of respondents about Covid-19 from

household sources with the highest value of 37 respondents from a total of 60 respondents. The value of easy access to information sources received from the total respondents who chose was 19.8%. The level of knowledge of respondents about Covid-19 from Family Sources with the highest value of 106 respondents from a total of 193 respondents. The value of ease of access to information sources received from the total respondents who chose was 63.7%. The level of knowledge of respondents about Covid-19 from the source of friends with the highest value of 84 respondents from a total of 147 respondents. The value of ease of access to information sources received from the total respondents who chose was 48.5%. The level of knowledge of respondents about COVID-19 from sources Government with the highest value of 158 respondents from a total of 284 respondents. The value of accessibility of information sources received from the total respondents who chose was 93.7%. The level of knowledge of respondents about Covid-19 from toga sources with the highest value of 16 respondents from a total of 24 respondents. The value of ease of access to information sources received from the total respondents who chose was 7.9%. The level of knowledge of respondents about Covid-19 from Head of household/neighbourhood chief sources with the highest value of 16 respondents from a total of 34 respondents. The value of easy access to information sources received from the total respondents who chose was 11.2%.

**Table 1**. Knowledge of respondent about Covid-19.

| Source of Information | Knowledge Value | | | | | |
|---|---|---|---|---|---|---|
| | 5 | 6 | 7 | 8 | 9 | 10 |
| **Television** | | | | | | |
| Yes | 1 | 1 | 5 | 39 | 70 | 145 |
| No | 0 | 0 | 1 | 8 | 13 | 20 |
| **Radio** | | | | | | |
| Yes | 0 | 0 | 0 | 3 | 3 | 16 |
| No | 1 | 1 | 6 | 44 | 80 | 14 |
| **Social Media** | | | | | | |
| Yes | 1 | 1 | 6 | 44 | 83 | 157 |
| No | 0 | 0 | 0 | 1 | 0 | 8 |
| **Print Media** | | | | | | |
| Yes | 0 | 0 | 0 | 8 | 8 | 24 |
| No | 1 | 1 | 6 | 39 | 75 | 141 |
| **Head of household/ neighbourhood chief** | | | | | | |
| Yes | 0 | 0 | 0 | 11 | 12 | 37 |
| No | 1 | 1 | 6 | 36 | 71 | 128 |
| **Family** | | | | | | |
| Yes | 1 | 1 | 4 | 29 | 52 | 106 |
| No | 0 | 0 | 2 | 18 | 31 | 59 |
| **Friends** | | | | | | |
| Yes | 1 | 1 | 1 | 18 | 42 | 84 |
| No | 0 | 0 | 5 | 29 | 41 | 81 |
| **Government** | | | | | | |
| Yes | 1 | 1 | 4 | 42 | 78 | 158 |
| No | 0 | 0 | 2 | 0 | 5 | 7 |
| **Religious Leader** | | | | | | |
| Yes | 0 | 0 | 1 | 2 | 5 | 16 |
| No | 1 | 1 | 5 | 45 | 78 | 149 |
| **Community Leader** | | | | | | |
| Yes | 0 | 0 | 0 | 5 | 13 | 16 |
| No | 1 | 1 | 6 | 42 | 70 | 149 |

The following figure is the result of graph analysis after doing calculations and the data can be accepted for analysis using SPSS AMOS 23:
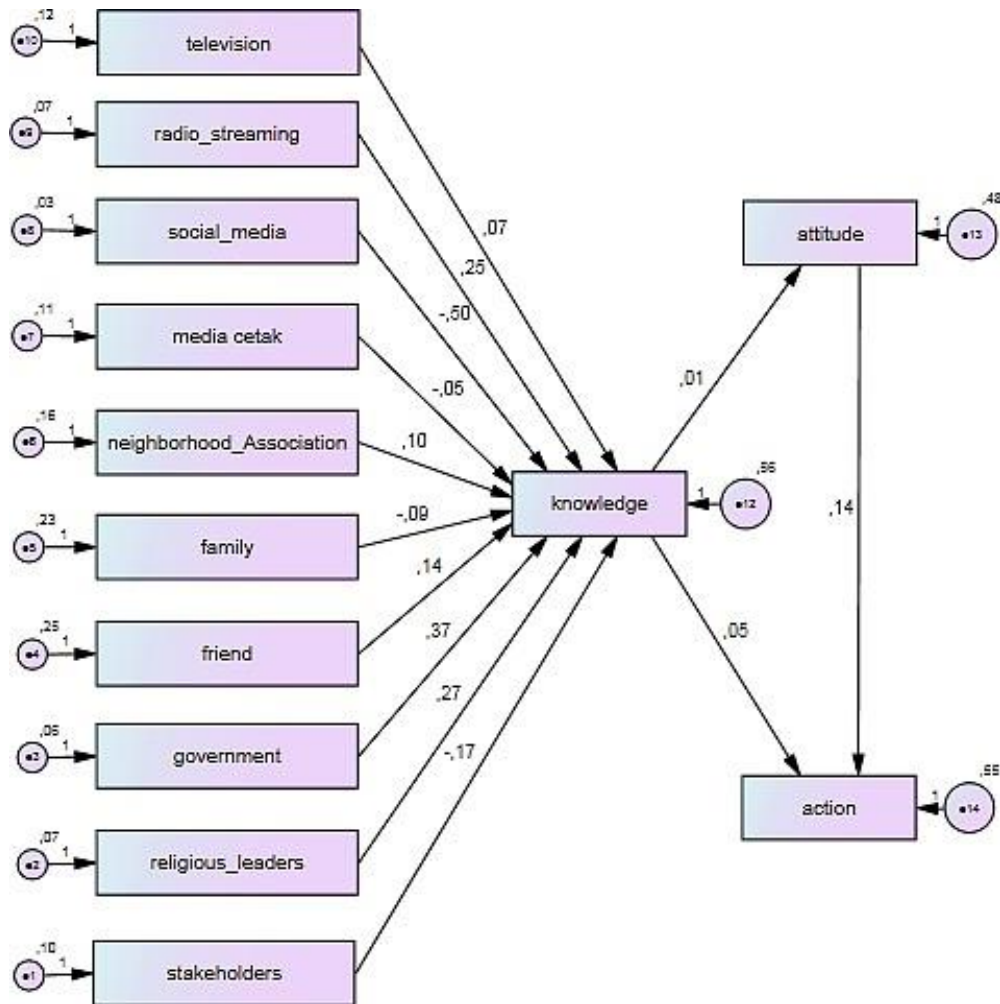
**Figure 1.** Model analysis

**Table 2.** Ouput of model analysis

| Computation of degrees of freedom (Default model) | |
| --- | --- |
| Number of distinct sample moments | 91 |
| Number of distinct parameters to be estimated | 26 |
| Degrees of freedom (91 - 26) | 65 |
| Result (Default model) | Minimum was achieved |
| Chi-square | 304,121 |
| Degrees of freedom | 65 |
| Probability level | 0,000 |

Table 2 showed the results output of analysis multivariate in the table Result (Default model) showing the words Minimum was achieved and degrees of freedom worth 65 positive then the processes in the model can be done. This is in accordance with Santoso's statement (2015: 61) because of the positive df and the sentence "Minimum was achieved" in the software output test, the testing Figure 1. Model analysis. process has been carried out, with a probability level = 0,000 can use the Just identified identification type. In SEM terminology it is called saturated [19].

Estimate explains the weight of influence (Regression Weights) where government information has a positive effect on the level of student knowledge. It can be seen from the value of Estimate 0, 373. The value (P) explains the influence of attitude towards student actions significantly. Can be seen from the (P) significance indicates 0.028 <0.05. Estimate explains the weight of influence (Regression Weights) where attitudes have a positive effect on the level of student action. Can be seen from the value of Estimate 0.136.

**Table 3.** Output of model analysis

**Scalar Estimates (Group number 1- Default model)**
**Maximum Likelihood Estimates**
**Regression Weight: (Group number 1- Default model)**

|  |  |  | Estimate | S.E | C.R. |  | P |
|---|---|---|---|---|---|---|---|
| Knowledge | ← | Televison | ,074 | ,125 | ,592 | | ,554 |
| Knowledge | ← | Radio | ,252 | ,167 | 1,515 | | ,130 |
| Knowledge | ← | Social Media | - ,500 | ,255 | -1,965 | | ,049 |
| Knowledge | ← | Print Media | -,046 | ,128 | -,363 | | ,716 |
| Knowledge | ← | Head of household/ neighbourhood chief | ,104 | ,108 | ,960 | | ,337 |
| Knowledge | ← | Family | ,145 | ,086 | 1,676 | | ,094 |
| Knowledge | ← | Friends | -,089 | ,090 | -,990 | | ,322 |
| Knowledge | ← | Government | ,373 | ,178 | 2,090 | | ,037 |
| Knowledge | ← | Religious Leader | ,273 | ,160 | 1,706 | | ,088 |
| Knowledge | ← | Community Leader | -,165 | ,137 | -1,206 | | ,228 |
| Attitude | ← | Knowledge | ,008 | ,051 | ,158 | | ,874 |
| Action | ← | Attitude | ,136 | ,062 | 2,190 | | ,028 |
| Action | ← | Knowledge | ,046 | ,055 | ,838 | | ,402 |

Table 3 is a descriptive translation to find out the significance value (P) and regression of weight (estimate) of each variable and indicator. From Table 3, it can be seen that the value (P) explains the influence of social value (P) of significance indicates 0.049 < 0.05. Estimate explains the weight of influence (Regression Weights) where social media negatively affects the level of student knowledge. Can be seen from the value of Estimate -0,500. Grades (P) also explain the effect of government information knowledge significant student. the value (P) of significance indicates 0, 037 <0.05.

**DISCUSSION**

In this study, social media has the highest value of information access ease of all information source options provided, namely with a percentage of 97% of the total 303 respondents, then the source of information from the government with a percentage of 93.7% and information sources from tv 86.1%. In line with the research of Giao, et al, 2020, which showed that health workers were more interested in social media to gather knowledge about emerging infectious diseases such as Covid-19 than the official government website [12]. This has become important for the Indonesian government

to consider various channels in terms of updating knowledge and material about this epidemic.

Knowledge is a prerequisite for building preventive beliefs, forming attitudes positive, promoting positive behaviour, cognition and individual attitudes towards illness that affect the effectiveness of coping strategies and behaviour to some extent [13]. The weight of the influence (*Regression* Weights) of information from social media in this study has a negative effect on student knowledge. This can occur because there is an information bias that can reduce student knowledge so that several possibilities that can occur on social media, including information on social media is hoax information, information from social media is not trusted, and information from social media is still theoretical or untested. scientifically. In addition, the information obtained from social media can also have political interests and benefits for some parties. Reporting from Annur, 2020, that the Ministry of Communications and Information Technology of Indonesia noted the hoax related to the Covid-19 pandemic reached 600 per Monday, April 27, 2020. One of the chain messages circulated through whatsApp by embedding the Covid-19 transmission news link but the narration delivered not in line with the news [14]. This can cause fear excessive, even some unscrupulous people take advantage by hoarding masks, to the handsanitizer. In line with another research, although the increase in internet communication largely increases the availability and dissemination of knowledge, the internet also has the potential for the development and dissemination of false information or false news [15].

While the weight of influence *(Regression Weights)* information from the government in this study have a positive influence on the level of student knowledge. This can happen because

information from the government is valid and can be accounted for, so that it can increase the knowledge of students. This study is in line with the research of Bhagavathula, et al which states that accessing information sources from the government through the official government health website online has positive implications for increasing the level of knowledge among health workers [16].

Obtaining information from authentic sources is very important to disseminate unbiased data and reliable, especially with regard to Covid-19 which is currently in pandemic status global. In this study, the weight of influence (*Regression Weights*) attitudes have a positive effect on positive actions of students. This can occur because the attitude is the context of the response of knowledge that comes from information sources. Thus, the higher the level of knowledge, the more positive the attitude and the more positive the attitude, the better the action taken by the student. In addition, the source of information indirectly influences the actions of students in responding to the Covid-19 outbreak. In line with the research of Eachan, Taylor, et al which states that knowledge about an illness can affect the attitudes and actions of a health worker. When the attitude and actions taken are wrong, it can directly increase the risk of infection [13]. In the research of Zhou, et al was also found that the results of the analysis of the knowledge of health workers and the factors influencing attitudes and actions could be used as references to prevent further spread of the epidemic among health workers [17].

**CONCLUSION**

Covid-19 information sources that are most easily accessed by students are social media. Social media has a negative effect on the level of student knowledge. Information Covid-19 sources from the government have a positive effect on the

level of student knowledge. Attitude has a positive effect on student actions. For the next, it needed that Students are expected to be able to access information about Covid-19 through the official website provided by the government so that the information obtained is valid and accountable information. The government is expected to always update the latest information through the official website so that it can be accessed by the public, especially students who are looking for information related to Covid-19.

## ACKNOLEDGMENT

## REFERENCES

[1] Ministry of Health of https://www.kemkes.go.id/index.php?lg=LN02. [accessed Mei, 31 2020]

[2] Widiyaningrum, D. L. 2020. WHODefines Covid-19 As a Global Pandemic, What Does It Mean? *National Geographic Indonesia*. https://nationalgeographic.grid.id/read/132059249. [accessed March, 12 2020].

[3] WHO. 2020. *Coronavirus*. Health Topic. https://www.who.int/health-topics/coronavirus#tab=tab_1. [accessed, May 31, 2020].

[4] WHO. 2020.*Public Statement for Collaboration on Covid-19 Vaccine Development.* https://www.who.int/news-room/q-a-detail/coronavirus-disease-(covid-19)-vaccines?adgroupsurvey={adgroupsurvey}&gclid=CjwKCAiA8Jf-BRB-EiwAWDtEGnvztqesiBKJ9DALWhS8ba0CuKfIdKziLaFtMgknhyK9hT1QpincNhoC1aQQA vD_BwE. [accessed October, 20 2020].

[5] Indonesian Task Force for the Acceleration of Handling COVID-19. 2020. Distribution of TheCovid-19 Maps. COVID-19 developments in Indonesia. [accessed December, 1 2020].

[6] UNESCO.2020. *Coronavirus School Closures*. https://en.unesco.org/covid19/educationresponse. May, 25 2020].

[7] The Indonesian Ministry of Education and Culture. 2020. *Circular Number 3 of 2020 Regarding Covid-19 Prevention at the Jakarta Education Unit.*

[8] Nasir N M, Baequni and Nurmansyah MI. 2020. Misinformation Related To Covid-19 In Indonesia. *Jurnal Administrasi Kesehatan Indonesia*, 8(1) p 51-59

[9] Triyaningsih H. 2020. *The Effect of Mass Media Coverage on Public Perceptions of Corona Virus (Case Study: Community in Pamekasan). J IAIN Madura* p 1-15

[10] Farizi S A and Harmawan B N. 2020. Data Transparency And Information Sharing: Coronavirus Prevention Problems In Indonesia. *Jurnal Administrasi Kesehatan Indonesia* 8(1) p 35-50

[11] Penycook G, McPhetres J, Zang Y, Lu J G and Rand D G. 2020. FightingCOVID-19 Misinformation on Social Media: Experimental Evidence for a Scalable Accuracy-Nudge Intervention. *Psychological Science 2020* 31(7) p 770–780

[12] Giao H, Ngoc N T, Khanh T V, Ngan V K, Tam V V and An P L. 2020. Knowledge and attitude toward COVID-19 among healthcare workers at District 2 Hospital, Ho Chi Minh City. *Asian Pac J Trop Med* p 6-11

[13] McEachan R, Taylor N, Harrison R, Lawton R, Gardner P and Conner M. 2016. Meta-Analysis of the Reasoned Action Approach (RAA) to Understanding Health Behaviors. *Ann Behav Med*. 50(4) p 592-612.

[14] C M Annur. 2020. Hoaxes Around Covid-19 Translucent 600, Starting

from Gibran to Bansos. https://katadata.co.id/. [accessed April, 27 2020].

[15] Lai C C , Shih T P, Ko W C, Tang H J and Husueh P R 2020. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and coronavirus disease-2019 (COVID-19): The epidemic and the challenges. *Int J Antimicrob Agents* p 1-9

[16] Bhagavathula A, Aldhaleei W A, Rahmani J R, Mahabadi M A and Bandari D A. 2020. Novel Coronavirus (COVID-19) Knowledge and Perceptions: A Survey of Healthcare Workers (Preprint). *JMIR Public Heal Surveill* 6(2) p 1-9

[17] Zhou M, Tang F and Wang Y. 2020. Knowledge, attitude and practice regarding COVID-19 among health care workers in Henan, China. *J Hosp Infect* p 1-10.

[18] Dewi Rokhmah, Ricko Pratama Ridzkyanto, Khoiron. 2020. Analysis of Government Budgeting for Health: Case Study of COVID-19 in East Java Province, Indonesia. Rokhmah. Kesmas: Jurnal Kesehatan Masyarakat Nasional (National Public Health Journal). 2020; Special Issue 1: 54-59. DOI: 10.21109/kesmas.v15i2.3986.

[19] Santoso, S., 2015. AMOS 22 for Structural Equation Modeling. Jakarta: PT. Elex Media Komputindo.