# KNOWLEDGE, ATTITUDE, AND BEHAVIOR TO PREVENT COVID-19 INFECTION IN GENERATION Y IN PONOROGO REGENCY, EAST JAVA

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## Abstract

Generation Y has the highest rate of Covid-19 contaminated cases. This is due to frequent movements and activities outside the home. This study was intended to investigate the impact of individual characteristics, knowledge, and attitudes on behaviour to prevent infection with Covid-19 in Ponorogo. The sample in this study amounted to 100 people with an age range of 20-35 years, consisting of 16 people and 84 women. The sampling technique used is voluntary sampling. The questionnaire was made in a form, and the link was distributed online. Data analysis used descriptive tests and SEM-PLS. The results of the SEM-PLS show that there is a significant effect of gender on knowledge and behaviour in preventing infection with Covid-19, as well as attitudes towards behaviour in preventing infection with Covid-19. The results show no significant differences in knowledge, attitudes, and behaviours to prevent infection with Covid-19 in urban and rural individuals. Individual women have better knowledge and behaviour to prevent infection with Covid-19 than men, and good behaviour will increase behaviour to prevent infection with Covid-19. Socialization and behaviour to prevent infection with Covid-19 must be increased, especially for men.

Keywords: attitudes, covid-19, information, generation Y, preventive conduct

## PENGETAHUAN, SIKAP, DAN PERILAKU MENCEGAH TERINFEKSI COVID-19 PADA GENERASI Y DI KABUPATEN PONOROGO, JAWA TIMUR

### Abstrak

Generasi Y memiliki tingkat kasus terkontaminasi Covid-19 paling tinggi. Hal ini disebabkan seringnya pergerakan dan kegiatan di luar rumah. Penelitian ini dimaksudkan untuk menyelidiki dampak karakteristik individu, pengetahuan, dan sikap terhadap perilaku untuk mencegah terinfeksi Covid-19 di Ponorogo. Sampel dalam penelitian berjumlah 100 orang dengan rentang usia 20-35 tahun, terdiri dari 16 orang dan 84 perempuan. Teknik penarikan sampel menggunakan *voluntary sampling*. Kuesioner dibuat dalam bentuk *gform* dan *link* disebarkansecara online. Analisis data menggunakan uji deskriptif dan SEM-PLS. Hasil SEM-PLS menunjukkan adanya pengaruh yang signifikan jenis kelamin terhadap pengetahuan dan perilaku mencegah terinfeksi Covid-19 serta sikap terhadap perilaku mencegah terinfeksi Covid-19. Hasil juga menunjukkan tidak adanya perbedaan yang signifikan mengenai pengetahuan, sikap, dan perilaku mencegah terinfeksi Covid-19 pada individu perkotaan dan perdesaan. Individu perempuan memiliki pengetahuan dan perilaku mencegah terinfeksi Covid-19 lebih baik dibandingkan laki-laki dan perilaku yang baik akan meningkatkan perilaku untuk mencegah terinfeksi Covid-19. Sosialisasi dan perilaku mencegah terinfeksi Covid-19 harus ditingkatkan, khususnya bagi laki-laki.

Kata kunci: covid-19, informasi, generasi Y, perilaku mencegah, sikap

## INTRODUCTION

The coronavirus was first discovered in Wuhan, People's Republic of China towards the end of 2019 (COVID-19 Task Force, 2020). Coronavirus is an infection that attacks the respiratory tract in humans. The coronavirus is transmitted through droplets of saliva or fluid from the nose of a person with Covid-19. Coronavirus is an infection with a high spread of transmission, terevidence most countries have announced high casualties. The rapid and widespread spread of Covid-19 infections in several countries has prompted

the expansion of the status into a pandemic. As the WHO report (2020) shows, a pandemic is an epidemic that occurs around the world or spreads to certain regions, crosses world borders, and affects a large number of individuals.

The number of Covid-19 cases in Indonesia as of July 9, 2021 was recorded at 2.455.912 cases with 367.733 dynamic cases. Indonesia is experiencing a sharp increase in cases every day with the addition of more than 15.000 cases since June 23, 2021. The most significant increase in cases in Indonesia occurred on July 8, 2021 with a total of 38,391 cases. The five regions with the largest number of Covid-19 cases in Indonesia are DKI Jakarta (623.271 cases), West Java (432.980 cases), Central Java (280.818 cases), East Java (187.175 cases), and East Kalimantan (82.741 cases) (Covid-19 Task Force, 2021).

The number of positive cases in Generation Y in Indonesia has the most significant level compared to other age groups with a total of 53,9 percent or 1.857.814 of the number of positive cases. In addition, it is also proven by the factthat the positive cases in Generation Y are very large compared to the number of positive cases in the boomer generation with an age of more than 60 years. The number of positive cases in the boomer generation is 11,4 percent of the total positive cases or 392.205 cases. The number of cases handled in Generation Y is 55 percent ofabsolute cases (BPS Covid-19 Statistical Task Force Team, 2020).

The large number of positive cases of Covid-19 in Generation Y is caused by versatility and high lifestyle dynamics (Hanggara, 2020). The high mobility is reflected in the recurrence of movement outside the home in the age group of 17-30 and 31-45 years which is routine during the Covid-19 pandemic with a range of 25,05 percent and 25,20 percent separately. The activities carried out include berolahraga regularly, leaving the house for a long time, for example due to work demand, recreational needs, and social needs (BPS Covid-19 Statistical Task Force Team, 2020).

A large population can increase the spread and number of deaths due to Covid-19. Efforts to stem the increase in the spread of Covid-19 are by following the policies issued by the government. Community support on the policies needed to achieve effectiveness in the spread of the virus. This is important to do to reduce the spread of the virus in pandemic conditions with vaccines that are not yet widespread (Czeisler *et al.,* 2020). The next effort is the existence of a good attitude and behavior from the community (Abdelhafiz et al., 2020). This is also in line with the research of Sholihat and Djamaludin (2017), behavior is influenced by the knowledge and attitudes possessed by individuals. Furthermore, according to Schrader and Lawless (2004), knowledge, attitudes, and behavior influence each other. The high number of Covid-19 cases in Generation Y can be emphasized by good behavior to prevent infection with Covid-19 (Betsch, 2020). Based on research from Reuben, Danladi, Saleh, and Ejembi (2020) good behavior and public response can suppress the spread of Covid-19. Behavior to prevent being infected with Covid-19 is due to the knowledge and attitudes possessed and vice versa (Schrader & Lawless, 2004).

Behavior is the response action of a person, organism and individual to a certain situation and can be seen by the senses (Schrader & Lawless, 2004). Behavior is also defined as the result of all forms of processes caused by the presence of internal and external stimuli and a response to the individual. Behavior is influenced by various factors such as the presence of emotions, perceptions, motivations, learning and intellectuals (Pieter & Lubis, 2017). Behavior Influenced by two factors, namely endogenous and exogenous. endogenous, namely the type of race, sex factors, physical traits, personality traits, innate talent, and intelligence. Exogenous factors are environment, education, education, religion, socioeconomic, culture, and other factors (central nervous system, perception, and emotion) (Sunaryo, 2004). According to Sumarwan (2011), behavior/conative is an important component in attitudes other than knowledge or cognitive possessed by individuals.

Gender, place of residence, and level of education influence behavior to prevent infection with Covid-19 (Saefi *et al.,* 2020). In addition, age affects behavior in individuals (Sholihat & Djamaludin, 2017). Knowledge, attitudes, and behavior to prevent infection with Covid-19 are influenced by individual characteristics, especially gender, age, place of residence, income, and education. According to Abdelhafiz *et al.* (2020), knowledge among young people and metropolitan residents is in stark contrast to that of older age groups. According to Saefi *et al.* (2020), knowledge is influenced by the level of education. Furthermore, gender affects knowledge in individuals (Sun, Yang, Zhang, & Cheng, 2020).

Knowledge is the result of being caught in individuals resulting from sensory organ recordings and becomes a determinant in producing overt behavior (Sunaryo, 2004). Knowledge, attitudes, and behavior to prevent infection with Covid-19 are influenced by individual characteristics, especially gender, age, place of residence, income, and education level. Knowledge has two types, namely declarative knowledge and procedural knowledge. Declarative knowledge is subjective knowledge possessed by individuals while

procedural knowledge is knowledge possessed by individuals about how to use a number of facts (Sumarwan, 2011).

Knowledge is also divided into two, namely subjective knowledge and objective knowledge (Astuti & Hartoyo, 2013). Based on the research results of Reuben *et al.* (2020), good knowledge of Covid-19 will affect attitudes and perceptions of individuals. Sources of knowledge information can be retrieved through social media and the internet. The knowledge in question is general knowledge, how to spread, and how to prevent Covid-19. Knowledge of Covid-19 can be measured by various aspects, namely the signs and symptoms of being infected with Covid-19, the mode of transmission of Covid-19, and protection to avoid Covid-19 (Lin *et al.,* 2020).

The high level of knowledge of Covid-19 among young people is inversely proportional to efforts to prevent the transmission of Covid-19. According to (BPS Covid-19 Statistical Task Force Team, 2020), individuals aged 17-30 years and 31-45 years have lower Covid-19 infection prevention behavior compared to those aged 46-60 years and over 60 years.

According to Thurstone in Schrader and Lawless (2004), attitude is something that is subjective by looking at all feelings and dispositions towards a concept, idea, or action. Attitude is a form of someone who has prepared and prepared to do an action and not to do a motive. Attitude is a factor that determines a person to behave (Pieter & Lubis, 2010). Attitude formation factors can be connected with individual personality traits inherited by various previous generations. Attitudes can be influenced by repeated exposure of messages or slogans to individuals and can relate them to someone who is credible at something (Wade & Tavris, 2007).

Age, gender, education level, and place of residence affect a person's attitude (Saefi *et al.,* 2020). Age is a determinant of a person's attitude in carrying out preventive behavior from being infected with Covid-19. Attitude is related to the level of individual knowledge about Covid-19 (Saqlain *et al.,* 2020). This can be a consideration for the government in increasing the willingness of individuals to have a good attitude towards preventing infection with Covid-19 (Daoust, 2020).

As in Bangladesh, people living in rural areas have lower levels of behavior to prevent infection with Covid-19 than people living in urban areas (Ferdous *et al.,* 2020). This is because people in provincial areas have a lower level of information about Covid-19 than people in metropolitan areas (Abdelhafiz *et al.,* 2020). There is a significant influence between place of residence and attitudes regarding Covid-19. Individuals who live in urban areas have a better attitude than individuals who live in rural areas. According to Sun *et al.* (2020), there is a significant influence on the knowledge and behavior of preventing infection with Covid-19 on the place of residence. Individuals living in rural areas have lower knowledge and behavior to prevent infection with Covid-19 than individuals living in urban areas.As is the case in the country of Bangladesh, orang living in rural areas have a lower level of behaviour to prevent being infected with Covid-19 than people living in urban areas(Ferdous *et al.*, 2020). This is because people in the provincial area have a lower level of information about Covid-19 than people in metropolitan areas (Abdelhafiz *et al.*, 2020). There is a significant influence between residence and attitudes regarding Covid-19. Individuals residing in urban areas have a better attitude than individuals residing in rural areas. According to Sun *et al.* (2020), there is a significant influence on the knowledge and behavior of preventing being infected with Covid-19 on residences. Individuals living in rural areas have lower knowledge and behaviors of preventing being infected with Covid-19 than individuals living in urban areas.

Ponorogo Regency has the second highest transmission score for Covid-19 in East Java with a score of 2,06. The Covid-19 transmission score indicates that the lower the score, the higher the Covid-19 transmission. This is shown by the death rate of Covid-19 cases in Ponorogo Regency of 8,91 percent with a recovery rate of 88,67 percent. The number of victims in Ponorogo Regency is above the normal case of East Java by 7,30 percent and the recovery rate is below normal in East Java by 88,67 percent (East Java Provincial Government, 2021).

Research related to knowledge, attitudes, and behavior to prevent infection with Covid-19 has generally been carried out by several researchers both at home and abroad. However, research specifically on Generation Y in Ponorogo Regency, East Java is still rarely done. Therefore, the author conducted a study entitled "Knowledge, attitude, and behavior to prevent infection with Covid-19 in Generation Y in Ponorogo Regency, East Java". The objectives of this study are: 1) to analyze differences in knowledge, attitudes, and behaviors to prevent infection with Covid-19 in Generation Y who live in urban and rural areas; 2) analyze the relationship between individual characteristics and knowledge, attitudes, and behaviors to prevent infection with Covid-19; and 3) analyze the influence of individual characteristics, knowledge and attitudes on behavior to prevent infection with Covid-19.

## METHODS

This study uses an explanatory design with quantitative methods. Based on data from the East Java Covid-19 Dashboard, Ponorogo Regency has the second highest potential transmission score in East Java (East Java Provincial Government, 2021). The population of the study is generation Y individuals with a birth year range between 1980-2000. Non-probability sampling technique with voluntary sampling method used in selecting samples. The total number of respondents who filled out the questionnaire was 123 respondents. However, after the data cleaning process, the total respondents used in the study were 100. The type of data used was primary data from questionnaires distributed boldly through Whatsapp and Instagram. In addition, interviews were conducted with several interviewees. The data collected are individual characteristics, knowledge, attitudes and behaviors to prevent being infected with Covid-19.

The variable preventing Covid-19 infection uses the reference from Sun *et al.* (2020) which is defined as behavior to prevent being infected with Covid-19 is a behavior in individuals in dealing with Covid-19. The instrument for preventing Covid-19 infection has thirteen question items. Aspects that are measured on behavioral variables include preventive measures, preventive measures that have not been scientifically proven, and positive measurements (Sun *et al.*, 2020). The Cronbach alpha value of the behavioral instrument to prevent infection with Covid-19 is 0,799. The scale used is a Likert scale with four measurement scales, namely never, rarely, sometimes, and always (Sun *et al.*, 2020).

The knowledge variable uses the reference of Saefi *et al.* (2020) which is a form of individual understanding, especially regarding Covid-19. Measurement variables with several indicators, namely etiology, preventive measures, hazard groups, ways of spreading, and symptoms (Saefi *et al.*, 2020). The Cronbach alpha value of the knowledge instrument is 0.635. The Covid-19 knowledge instrument has thirteen questions. The scale used is a Likert scale with three measurement scales namely true, do not know, and false (Saefi *et al.*, 2020).

The attitude variable uses Saefi *et al.* (2020), which is a form of assessment of individuals regarding Covid-19. Attitude variables are measured by several indicators such as information acceptance, social interaction, and self-motivation (Saefi *et al.*, 2020). The attitude instrument has six question items. The Cronbach alpha value of the attitude instrument is 0,704. The scale used is a Likert scale with five measurement scales namely disagree, not sure, and agree (Saefi *et al.*, 2020).

Data processing and analysis first begins with data collection, inserting, sorting, coding data, and analyzing data. The process of processing and analyzing data in this studyused microsoft Excel, Smart PLS and Statistical Package for the Social Sciences application. The knowledge variable is measured using the value of 0 if it is false and does not know, then the value of 1 if it is true. The attitude variable is measured by using the value of 1 if disagreed, the value 2 if not sure, and the value 3 if agreed. The behavior variable is measured by using the value of 1 if never, the value of 2 if it is rare, the value of 3 if occasional, the value of 4 if it is frequent, and the value of 5 if always. The score obtained by each variable is then composted by being transformed into an index. Data processing analysis uses descriptive statistical analysis, independent t-test difference test, correlation test, and SEM analysis.

## RESULTS

### Individual Characteristics

The number of respondents involved in this study were 100 respondents, dominated by female respondents (84%). The age of the respondents is spread from the age of 20-35 years with the most respondents aged 22 years (43%). The average age of the respondents was 22.41 years. Nearly three quarters (73%) of respondents live in rural areas and 27 percent of respondents live in urban areas. More than half (57%) the last education level completed by respondents was Senior high school, 57 percent and 43 percent of respondents having completed undergraduate education. Finally, two thirds (66%) of respondents had a final income of IDR1.000.000.

### Knowledge

Knowledge of Covid-19 is used to measure various indicators such as etiology, preventive measures, risk groups, ways of spreading, and symptoms of Covid-19. Based on Table 1, the answer choices of urban and rural respondents are dominated by correct answers. Most of the respondents answered correctly on the eleven statement items on the knowledge variable. Almost all rural respondents answered incorrectly on the statement item on the body's resistance to Covid-19 infection and the spread media. The average index

results show that urban respondents have a higher knowledge index than rural respondents. However, the results of the different test show that there is no difference in the level of knowledge in urban and rural respondents.

Table 1 Average respondents' scores based onn knowledge of Covid-19 and domicile

| Statement | Urban (n=27) | Rural (n=73) |
|---|---|---|
| Groups prone to being infected with Covid-19 | 0,94 | 0,90 |
| Body resistance to infections | 0,45 | 0,60 |
| Ways of spreading through the respiratory system | 0,94 | 0,95 |
| Media of dissemination | 0,79 | 0,16 |
| Symptoms of the sufferer | 0,93 | 0,93 |
| Individuals with OTG (asymptomatic people) | 0,96 | 0,96 |
| Various places of risk of spread | 0,33 | 0,66 |
| The use of masks in preventive measures | 0.99 | 0,99 |
| Ways of handling infected individuals | 1,00 | 1,00 |
| Handling of infected remains | 0,74 | 0,71 |
| Endurance of the body in children and adolescents with infections | 0,85 | 0,14 |
| Etiology | 0,98 | 0,97 |
| Healing steps in sufferers | 0,85 | 0,82 |
| Number of Scores | 10,7 | 9,8 |
| Index (Average) | 82,50 | 75,34 |
| Index Categories | High | Medium |
| *P-value* | 0,203 | |

**Attitude**

Attitudes about Covid-19 measure various indicators such as information acceptance, social interaction, and self-motivation. Based on Table 2, most of the urban and rural respondents answered agree and strongly agree on the items of interest in receiving Covid-19 information and as a preventive measure against Covid-19. Most of the urban and rural respondents agreed that self-isolation for Covid-19 sufferers is a responsibility not to transmit the virus to the surrounding environment and there is no bad view of Covid-19 sufferers and the feeling of fear of the Covid-19 pandemic. Most of the urban respondents answered that they were unsure of the statement item that all Covid-19 sufferers were violators of the Covid-19 health protocol, while most of the rural respondents did not agree that all Covid-19 patients were violators of the Covid-19 health protocol. The average index results show that urban respondents have a higher attitude index than rural respondents. However, the results of the different test show that there is no significant difference in attitudes between urban and rural respondents.

Table 2 Average score of respondents based on attitudes about Covid-19 and domicile

| Statement | Urban (n=27) | Rural (n=73) |
|---|---|---|
| The importance of receiving information | 4,16 | 4,07 |
| Feelings of fear at the reception of information | 2,79 | 3,18 |
| Reception of information as a preventive measure | 4,11 | 4,08 |
| The sufferer is an individual who violates the health protocols | 3,31 | 2,66 |
| Bad view of the sufferer | 4,68 | 4,67 |
| Self-isolation and responsibility reduces spread | 4,44 | 4,37 |
| Number of Scores | 23,50 | 23,00 |
| Index | 72,86 | 70,95 |
| Score Categories | Keep | Keep |
| *P-Value* | 0,418 | |

**Behaviors to Prevent Being Infected with Covid-19**

Behavior to prevent infection with Covid-19 is measured by various indicators such as preventive measures, preventive measures that have not been scientifically proven, and positive measurements. Based on Table 3, most of the urban and rural respondents always wear masks when traveling and open the room windows regularly to maintain smooth air circulation. Most of the urban respondents often follow Covid-19 information in various media, eat healthy food, and avoid traveling to crowded places and never think

about the Covid-19 pandemic. Most urban respondents rarely discuss Covid-19, consume herbs and vitamins/supplements, avoid meeting relatives or friends from afar, disinfect Covid-19 at home, and check body temperature to detect early symptoms of Covid-19.

Most of the rural respondents often avoid traveling to crowded places and consume healthy food/drinks. Most of the rural respondents rarely discuss Covid-19, check body temperature to detect early symptoms of Covid-19, avoid meeting distant friends/relatives, discuss Covid-19, consume herbs and vitamins/supplements, follow Covid-19 information in various media, and disinfecting the home environment. The results show that the average index of urban respondents is higher than that of rural respondents. However, the results of the different tests showed that there was no significant difference in behavior to prevent infection with Covid-19 between urban and rural respondents.

Table 3 Average score of respondents based on behavior to prevent infection with Covid-19 and domicile

| Statement | Urban (n=27) | Rural (n=73) |
|---|---|---|
| Wearing a mask | 4,78 | 4,78 |
| Avoiding crowded places | 3,91 | 3,90 |
| Consumption of herbs | 2,46 | 2,37 |
| Take vitamins/ Supplements | 3,16 | 3,15 |
| Follow information in various media | 3,40 | 3,45 |
| Disinfectants at home | 3,18 | 3,10 |
| Opening windows for smooth air circulation | 4,55 | 4,52 |
| Body temperature measurement in checking the initial symptoms | 2,74 | 2,74 |
| Avoiding meeting individuals from distant areas | 3,08 | 3,08 |
| Consumption of healthy foods/drinks | 3,98 | 3,99 |
| Avoiding discussions about Covid-19 | 3,36 | 2,44 |
| Not thinking about the existence of a pandemic | 3,94 | 2,08 |
| Number of Scores | 42,5 | 39,6 |
| Score Categories | Keep | Low |
| Index | 63,59 | 57,51 |
| *P-Value* | 0,318 | |

**The Relationship between Individual Characteristics and Knowledge, Attitudes, and Behaviors to PreventBeing Infected with Covid-19**

Based on Table 4, gender has a significant positive relationship with knowledge and preventing infection with Covid-19. This can be interpreted that individual women have better knowledge and behavior to prevent infection with Covid-19. The relationship test also showed that education had a significant positive relationship with the behavior of being infected with Covid-19. The higher the education, the better the behavior to prevent being infected with Covid-19. Income has a significant positive relationship with attitudes and behavior to prevent infection with Covid-19. The higher the individual's income, the better the attitude and behavior to prevent being infected with Covid-19 will be. Attitude has a significant positive relationship with behavior to prevent infection with Covid-19. The higher the attitude, the better the behavior to prevent being infected with Covid-19.

Table 4 Relationships between individual characteristicsand knowledgeable people, attitudes, and behaviors preventing infection with Covid-19

| Individual Characteristics | Knowledge | Attitude | Behaviour |
|---|---|---|---|
| Gender (0=male; 1=female) | **0,008*** | 0,464 | **0,009*** |
| Domicile (0=urban; 1=rural) | 0,324 | 0,513 | 0,209 |
| Age | 0,187 | 0,444 | 0,622 |
| Education (1=Senior High School; 2= undergraduate) | 0,642 | 0,443 | **0,040*** |
| Revenue (1=≤Rp1.000,000; 2=IDR 1.000.001-2.000.000; 3=IDR2.000.001-3.000.000; 4= IDR3.000.001-4.000.000; 5= IDR4.000.001-5.000.000; 6= | 0,553 | **0,000**** | **0,042*** |

Table 4 Relationships between individual characteristicsand knowledgeable people, attitudes, and behaviors preventing infection with Covid-19 (continue)

| Individual Characteristics | Knowledge | Attitude | Behaviour |
|---|---|---|---|
| IDR>5.000.000) | | | |
| Knowledge | - | 0,852 | 0,375 |
| Attitude | 0,852 | - | **0,022\*** |

Note: *=significant p<0.05; **=significant p<0.01

### SEM-PLS analysis

In the evaluation analysis of the measurement model (outer model) it takes a loading factor value of ≤ 0,50 to reach a valid value. The initial equation model is presented in Figure 1.
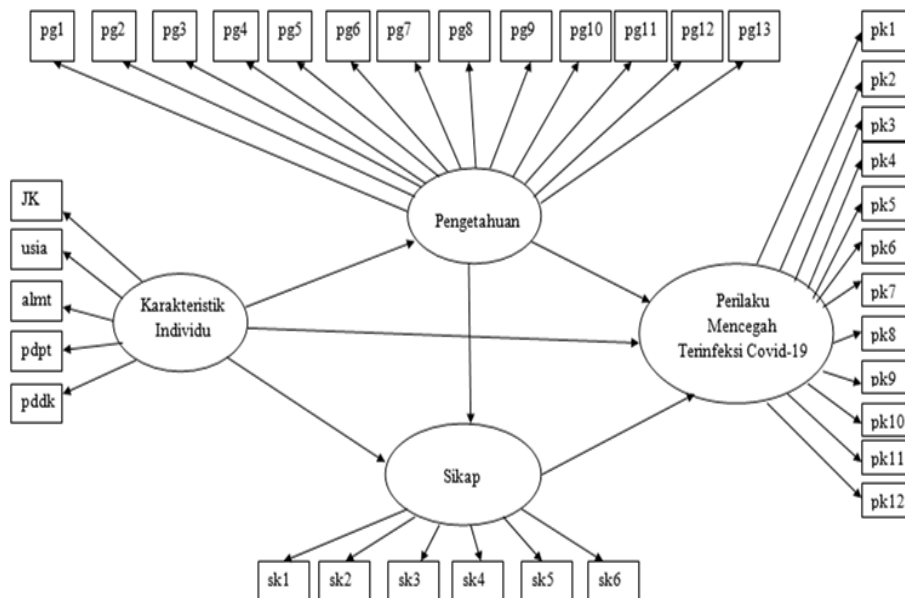


Figure 1 Early SEM model

The initial process of removing the loading factor value ≤0,50 in the model resulted in the first structural model in Figure 2.
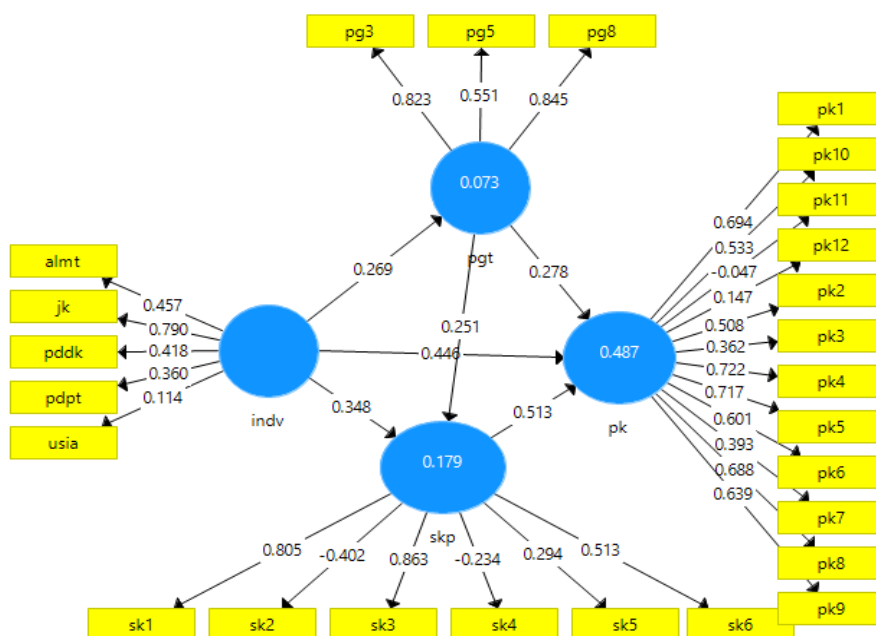


Figure 2 First outer result

The process of removing the value of the loading factor ≤0,50 is still needed, especially in the indicators of individual characteristics, attitudes, and behaviors. The process of erasure of the first structural model produces the second structural model in Figure 3.
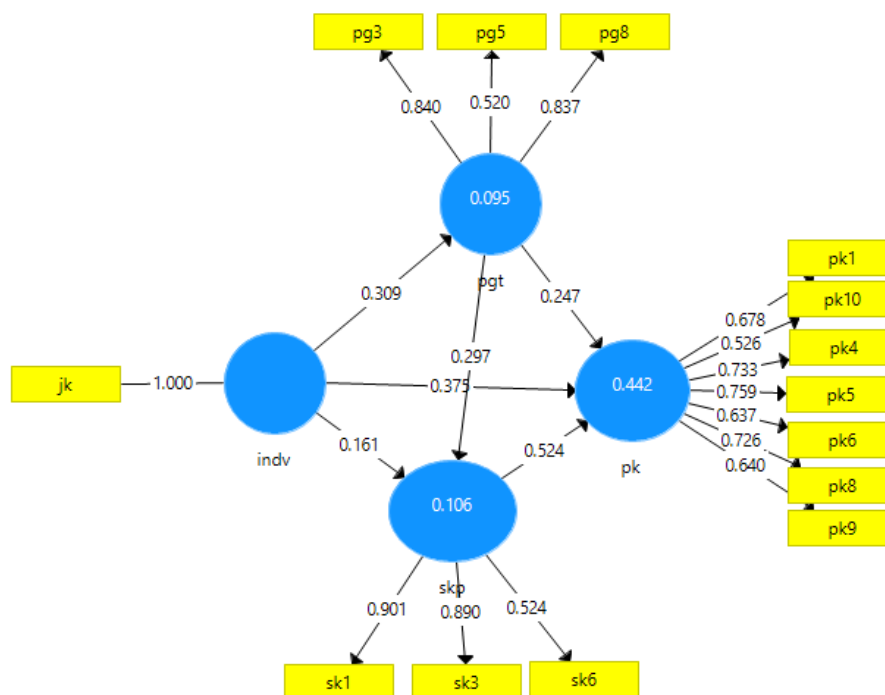


Figure 3 Second outer result

The next process is to do bootstrapping to test the value of the inner model path coefficient analysis. The results of the test of the effect of t-statistics>1,96 and p<0,05 then the hypothesis decision will be accepted. The results of the analysis of the inner model path coefficient are presented in Table 5.

Table 5 Results of the analysis of innermodel path coefficient

| Variable | Path Coefficient | T-statistics | P-values | Information |
|---|---|---|---|---|
| Individual Characteristics → Knowledge | 0,309 | 2,010 | 0,045* | Significant |
| Individual Characteristics → Compliance Behavior | 0,239 | 2,302 | 0,022* | Significant |
| Individual Characteristics → Attitude | 0,064 | 0,522 | 0,602 | Not significant |
| Knowledge → Preventative Behavior | 0,019 | 0,209 | 0,835 | Not significant |
| Knowledge → Attitude | 0,296 | 1,479 | 0,140 | Not significant |
| Attitudes → Preventative behavior | 0,563 | 8,221 | 0,000* | Significant |
| Individual characteristics → Knowledge → Attitude | 0,091 | 1,124 | 0,262 | Not significant |
| Knowledge → Attitude → Preventative behavior | 0,166 | 1,430 | 0,153 | Not significant |
| Individual characteristics → Knowledge → Preventative Behavior | 0,006 | 0,189 | 0,850 | Not significant |
| Individual Characteristics → Knowledge → Attitude Prevent behavior | 0,051 | 1,075 | 0,283 | Not significant |

Table 5 Results of the analysis of innermodel path coefficient

| Variable | Path Coefficient | T-statistics | P-values | Information |
|---|---|---|---|---|
| Individual Characteristics ➔ Attitude ➔ Preventative behavior | 0,036 | 0,529 | 0,597 | Not significant |

Note: significant if t-statistik <1,96 dan p-value <0,05

Based on Table 5, individual characteristics have a significant influence on knowledge and behavior in dealing with the Covid-19 pandemic and attitudes have an influence on behavior in dealing with the Covid-19 pandemic. It can be known by the value of t-statistic <1,96 and p-value <0,05. This means that female individuals have better knowledge and behavior in dealing with the Covid-19 pandemic than males. The high value of attitudes regarding Covid-19 will lead to high behavior in dealing with the Covid-19 pandemic.

The results of the indirect influence test of individual characteristics on attitudes through knowledge of the absence of influence. The indirect influence test is also knowledge on behavior to prevent infection with Covid-19 through attitudes showing no influence. The results of the indirect influence test of individual characteristics on the behavior of preventing Covid-19 infection through knowledge and attitudes, individual characteristics on the behavior of being infected with Covid-19 through attitudes, and individual characteristics on the behavior of preventing infection showed no significant effect.

## DISCUSSION

Knowledge of Covid-19 is needed to reduce the risk of being infected with Covid-19 (Betsch, 2020). Most of the individuals have high knowledge about Covid-19. This is inversely proportional to the fact that most individuals have poor knowledge about the body's resistance to Covid-19 infection and places with high potential for transmitting Covid-19. Based on the results of the average index, it shows that knowledge of urban individuals has a higher value than that of rural individuals. However, the results of the different test show that there is no significant difference in knowledge between urban and rural respondents. This is because individuals in rural and urban areas have good access to information regarding Covid-19 information (Sun *et al.,* 2020). The high access to information for Generation Y individuals is also caused by the high use of gadgets that make it possible to access Covid-19 information on social media and online news media. The high use of gadgets is also due to the inherent use of technology as a characteristic of generation Y (Budiati *et al.,* 2018).

A good attitude towards Covid-19 in individuals will have high guard behavior against Covid-19 infection (Abdelhafiz *et al.,* 2020). Most of the respondents have an agreeable attitude to the aspect of self-isolation for Covid-19 sufferers, have a feeling of fear of Covid-19, and have a good view of Covid-19 sufferers. There are differences in attitudes among the majority of urban and rural respondents regarding all Covid-19 sufferers as violators of the Covid-19 health protocol. Urban respondents have an attitude of uncertainty while rural respondents do not agree with this statement. However, the results of the different test show that there is no significant difference in attitudes between urban and rural respondents. According to Rahmawati, Sudargo, Paramastri (2009), attitude change in individuals can be classified as slow. This is due to the individual's rejection of a problem.

Good behavior to prevent being infected with Covid-19 is important to reduce cases of being infected with Covid-19 (Galvin, Li, Jack, Malwade, & Syed-Abdul, 2020). This is in accordance with the majority of respondents always wearing masks when traveling, regularly opening room windows to maintain smooth air circulation, and never thinking about the Covid-19 pandemic. Most respondents often avoid traveling to crowded places and eat healthy foods. Some respondents rarely have behaviors such as having discussions about Covid-19, checking body temperature to detect early symptoms of Covid-19, avoiding meeting distant friends/relatives, consuming herbs and vitamins/supplements, following Covid-19 information in various media, and doing disinfectants. in the home environment. There are differences in behavior to prevent being infected with Covid-19 between most urban and rural individuals such as urban individuals who often follow the development of information about Covid-19, while rural individuals rarely follow the development of information on Covid-19. Based on the results of the average index, it shows that urban individuals have better behavior to prevent infection with Covid-19 than rural individuals. However, the results of the different test showed that there was no significant difference in behavior between urban and

rural respondents. This is because individuals in urban and rural areas have high access to information about Covid-19. The similarity of access to information obtained between urban and rural individuals will affect the behavior of preventing infection with the same Covid-19 in individuals (Sun *et al.,* 2020).

The relationship test showed that there was a significant relationship between gender and knowledge of Covid-19. Individual women have better knowledge of Covid-19 than men. This is in accordance with Sun et al. (2020) that women have better knowledge of Covid-19. Based on research from Azlan, Hamzah, Sern, Ayub, and Mohamad (2020), individual women have a higher Covid-19 knowledge value than men. A high value is found in the statements of the distribution media and how to reduce the spread of Covid-19. Based on the results of interviews with female respondents accessing Covid-19 information on various online media to find out the development of cases and various preventive measures to avoid Covid-19.

Gender is significantly related to knowledge and behavior to prevent infection with Covid-19. This can be interpreted that female individual have better knowledge and behavior to prevent infection with Covid-19 than males. This is in accordance with Alatas and Linuwih (2013) that gender is significantly related to the knowledge possessed by individuals. Based on the research of Syadidurrahmah, Muntahaya, Islamiyah, Fitriani, and Nisa (2020) stated that gender is significantly related to behavior to prevent infection with Covid-19. Education is significantly related to behavior to prevent infection with Covid-19. The higher the individual's education, the better the behavior to prevent being infected with Covid-19 will be. This is in line with Sholihat and Djamaludin (2017) that education is significantly related to behavior. Income is also significantly related to attitudes and behavior to prevent infection with Covid-19. The higher the income, the better the attitude and behavior to prevent being infected with Covid-19 will be. This is in accordance with Putra, Taufiq, and Juliani (2013), income in individuals has a significant relationship with attitude. According to Rachman, Mustika, and Kusumawati (2017), individual income is significantly related to attitudes towards Covid-19.

The SEM results state that there is a significant influence on gender on knowledge of Covid-19. Individual women have better knowledge of Covid-19 than men. This is in line with the research results of Sun *et al.* (2020) namely women have higher knowledge of Covid-19 than men. According to Azlan *et al.* (2020) female individuals have a higher Covid-19 knowledge value than males. A high value is found in the statements of the distribution media and how to reduce the spread of Covid-19. Based on the results of interviews, female respondents accessed Covid-19 information in various online media to find out the development of cases and the right way or preventive measures to avoid Covid-19 infection.

SEM results show that individual characteristics (gender) have a significant effect on behavior to prevent infection. Covid-19. According to Al-Hanawi et.al. (2020), male individuals have lower behaviors to prevent infection with Covid-19 than women. This result is also in line with Sun *et al.* (2020) female individuals have better behavior to prevent infection with Covid-19. This is due to the good knowledge of Covid-19 in individual women. Based on the results of interviews, female individuals have good behavior to prevent infection with Covid-19 by always wearing a mask, avoiding traveling far, and avoiding meeting individuals or distant relatives. Individual women have reasons to do this behavior to avoid the risk of spreading Covid-19. Individual women also regularly take vitamins/supplements during the COVID-19 pandemic to increase body resistance.

Attitudes about Covid-19 have a significant influence on behavior to prevent infection with Covid-19. This can be interpreted that the higher attitude regarding Covid-19 will affect the high behavior of preventing infection with Covid-19. This is in accordance with Sholihat and Djamaludin (2017) which states that attitudes have a significant effect on behavior. This is supported by the results of research by Yanti et al. (2020) namely attitudes, environmental factors, and self-confidence can influence behavior to prevent infection with Covid-19. The statement measured is the attitude about maintaining a safe distance which is one of the behaviors to prevent being infected with Covid-19.

SEM results show that individual characteristics (gender) do not affect attitudes. This result is not in accordance with Saefi *et al.* (2020) that gender influences attitudes about Covid-19 in individuals. Individual women have higher attitudes about Covid-19 than men. A good attitude regarding Covid-19 is in the aspects of receiving information, social interaction, and self-motivation.

The SEM results show that there is no influence on knowledge on behavior to prevent infection with Covid-19. This is not in accordance with Sun *et al.* (2020) that knowledge about Covid-19 in individuals will affect behavior to prevent infection with Covid-19. Higher knowledge will improve behavior to prevent infection with Covid-19. Knowledge that can be accessed from various reliable sources of information will improve behavior to prevent being infected with Covid-19 which is good for protecting yourself.

Based on the results of the analysis of the influence test, it shows that knowledge has no effect on attitudes about Covid-19. This is not in line with Schrader and Lawless (2004), namely knowledge and attitudes there can be an influence between the two. Knowledge will affect the attitude of the individual. The better knowledge will affect a good attitude. (Sunarko & Setyaningsih, 2016).

Based on the results of the indirect test, it was found that there was no influence on gender on behavior to prevent infection with Covid-19 through knowledge and attitudes. Individual characteristics (gender) on attitudes through knowledge and knowledge on behavior to prevent infection with Covid-19 through attitudes were not found to have a significant effect. According to Sipayung and Cahyonowati (2015), the absence of a significant effect on the indirect effect test is caused by various factors. The factor that causes this is the direct effect test results are better or significant so that the intervening variable used is not good for testing the indirect effect.

The limitation in this study is the unbalanced number of urban and rural respondents to distinguish the results of knowledge, attitudes, and behavior to prevent infection with Covid-19 in generation Y.

## CONCLUSIONS AND SUGGESTIONS

Most of the generation Y are in the early adulthood phase, have a secondary level of education, and have low incomes. Knowledge about Covid-19 in Generation Y in urban areas is at a high level, while Generation Y in rural areas is at a moderate level. Generation Y in urban and rural areas has a moderate attitude towards Covid-19. Behavior to prevent infection with Covid-19 in urban Y generation is at a moderate level, while Y generation in rural areas is at a low level. The results of the different tests prove that there are no significant differences in knowledge, attitudes, and behaviors to prevent being infected with Covid-19 in urban and rural respondents. The correlation test shows that gender is significantly related to attitudes and behavior to prevent infection with Covid-19 and education is significantly related to behavior to prevent infection from Covid-19. Another correlation test shows that income is significantly related to attitudes and behavior to prevent infection with Covid-19 and attitudes are significantly related to behavior to prevent infection from Covid-19. Gender has a significant effect on knowledge about Covid-19 and behavior to prevent infection with Covid-19 as well as attitudes towards behavior in preventing infection with Covid-19. This shows that female individuals have higher knowledge and behavior to prevent infection with Covid-19 than males. The high attitude about Covid-19 that individuals have will affect the high behavior of preventing infection with Covid-19.

Generation Y individuals, especially males, need to increase the information needed to increase knowledge about Covid-19. Good behavior to prevent infection with Covid-19 is also needed, especially for the male Y generation. Local governments need to conduct further socialization, especially information regarding Covid-19. This is due to overcoming excessive feelings of fear and individuals who have the potential to contract Covid-19. The existence of socialization to increase the consumption of herbal medicine is also needed in increasing the body's resistance. The behavior of measuring body temperature in Generation Y individuals is also needed to detect early symptoms of Covid-19. Further research is needed to explore differences in knowledge, attitudes, and behaviors to prevent infection with Covid-19 in Ponorogo Regency across generations, especially the elderly and other community groups who are not familiar with online data collection methods. This is done to obtain differences in knowledge, attitudes, and behaviors to prevent infection with Covid-19 in Ponorogo Regency between generations so that they can obtain good policies.

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