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The Influence Of Socioeconomic Background On Community Behaviour In Face Mask Waste Management During The COVID-19 Pandemic In Kudat, Malaysia

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ABSTRACT

The outbreak of COVID-19 spread at the beginning of 2019, and the spread of COVID-19 became increasingly uncontrolled in December 2019, resulting in most countries being severely affected in terms of economy or health. A face mask is an alternative in reducing the spread of disease through the air, either through nasal or oral droplets such as sneezing and coughing. However, using disposable face masks has created a new problem in waste management concerning facemask after-usage handling. Therefore, the objective of this study on community behavior in facemask waste management during the COVID-19 pandemic is to identify the influence(s) of community background(s) on the handling of facemask waste. A probability sampling method was used involving 220 respondents who were selected at random. The research method is in the form of a survey, which is then analyzed using regression analysis. The study's results found that the variables such as gender, education level, and total income affected the community's behavior in managing face mask waste. Therefore, the effectiveness of implementing guidelines and policies should be more thorough so that issues related to the disposal of face mask waste can be reduced.

INTRODUCTION

The outbreak of *COVID-19* shocked the whole world. The *COVID-19* disease spread in early 2019, becoming uncontrollable by December 2019 when it affected many more countries in terms of economy or the population's health. The European Union (EU)'s call for an independent investigation into the origins of *COVID-19* is needed for a comprehensive understanding of the epidemiology of the *COVID-19* pandemic. to enable the authorities to make decisions in facing future challenges.[1] The *Novel Coronavirus*, often associated with severe acute respiratory (*SARS-CoV-2*), is classified in a new case: the *2019 Coronavirus*. The *2019 Novel Coronavirus* is a viral infection that started in Hubei Town in the Wuhan district, China. The widespread, large-scale, and unlimited transmission only to a community or a section is a pandemic.[2] *Genomic* analysis revealed that SARS-COV-2 is *Phylogenetically* related to the bat virus, confirming bats as the cause or initial source of the outbreak. This virus is classified under the *Coronaviridae* family in the *Nidovirales* group, which has a diameter of 65.125 nm and consists of alpha (a), beta (b), gamma (c), and delta (d) subgroups. The *SARS-CoV, H5N1 Influenza A*, *2009 H1N1 Influenza*, and *MERS-CoV* outbreaks are diseases that cause acute respiratory disorders, which might then devolve into pulmonary failure and result in death.

In Malaysia, the Ministry of Health mandated the use of face masks to control the spread of this disease. Face masks are an alternative to reduce the spread of diseases through nasal or oral droplets, such as sneezing and coughing. [3] This new norm has led to high demand for the production of face masks, which in turn has an impact on the environment, specifically concerning the increase of domestic and clinical waste such as face masks, gloves, and sanitizer bottles.

In most countries, such as Malaysia, the use of face masks during the *COVID-19* pandemic has been made mandatory to protect oneself and curb the spread of the virus. Increased facemask usage by the public during this pandemic has produced a new type of waste, and more appropriate disposal methods are required, such as throwing in provided bins. However, face mask waste is thrown away everywhere by the community, which is not sensitive to the cleanliness of the environment, resulting in an unhealthy environment. Therefore, it is essential to research community behavior to manage this kind of waste well. The research objectives are as follows:

i. Identify the community behavior on the use of face masks.
ii. Analyze the influence of the community background on the behavior of using face masks.

Literature Review

Community behavior, specifically regarding face masks, is considered important as proximity protection to other individuals and is supported. It can limit the spread of aerosols, either infecting or being infected by others.[4] The rate of compliance with the use of face masks helped to reduce active cases when it was found that the infection rate among individuals using face masks was low.[5][6] This explains that using face masks can protect oneself from the COVID-19 outbreak. The community's behavior to use it depends on its compliance. That safe face mask experience contributes to the community's compliance.[7] In addition to selling cheap face masks, panic buying behavior is also a factor in mask-wearing compliance.[8]

Furthermore, there is significant knowledge among men and young people with high education.[9][10] The study also discovered that socioeconomic background, such as gender, education level, and total income influences the community behavior in using and managing face masks. The married group has a better awareness because of the responsible attitude of the individual concerned, and the women are more accountable since they are less willing to accept disease complications. [11][12]

Besides that, a community behavior that uses face masks many times and does not get infected consists of groups aged 30-50 and 50-70 years[13]—added that the behavior of not practicing hygiene before, during, and after disposing of the face masks increases the risk of infection. At the same time, it found that the lack of water, soap, and sanitizers is also a factor in the spread of the virus in some countries.[14] These socioeconomic background factors lead to inevitable behaviors that increase the risk of infection to epidemics and non-compliance with the use and management of face masks.[15] Face masks are less optimally effective when gaps on the sides and top of the face mask potentially expose individuals to polluted air spaces. The habit of touching the face to adjust the position of the mask used also exposes the community to the risk of infection through contact. the socioeconomic background of the community influences the difference in the use of face masks when low-quality face masks need to be adjusted on the face regularly.[16] In addition, climate and humidity factors that cause discomfort encourage the use of face masks that are not well-received, especially in hot climates.

In some countries, the embarrassment in using face masks and difficulty communicating also contributed to the lack of face masks in the community. This poor perception and knowledge level affect compliance with measures to curb the spread of the virus.[17] Individuals with knowledge are women because they are more interested in current information.[18] However, the dissemination of online communication is less effective, especially for migrants, due to a lack of understanding of the local language and the long period of information translation which causes the spread of inaccurate information.[19] Such situations help to highlight that the level of education affects the community's behavior toward compliance with the use and management of face masks.

RESEARCH METHODS

This study was carried out through a survey method using a questionnaire as the main instrument. The selection of this sample size is based on the determination that a total of 220 respondents were selected. The questionnaire was distributed and completed by the selected respondents. One of the reasons questionnaires become the preferred medium is because the data or information collected in the field is clearer to analyze, and the results can be displayed in a form that is easy to understand. The information obtained is analyzed by showing the results in tables and graphs. Quantitative data analysis was processed using the *Statistical Package for the Social Sciences* (SPSS) software. The study results will be analyzed using a regression equation to see how much influence there is between the two variables involved. In addition, observational methods are used in support. Effects and experiences from long-term observations can help revise research problems and potentially create a need for additional procedures and theoretical perspectives to complement research. The observation approach is made by collecting the necessary information through field notes.[20]

This study was conducted in Sabah, a state located in the Eastern part of Malaysia Sabah is divided into five parts: Kudat, Sandakan, Tawau, Interior, and West. Sabah was also classified into six (6) zones: Northeast Zone, Southeast Zone, Southwest Zone, Interior Zone, Northwest Zone, and Midwest Zone. *Kudat* is a district located in the northern tip of Sabah covering 1,287 square km, including *Kudat, Pulau Banggi, Pulau Balambangan, Pulau Malawali, Matunggong*, and other nearby islands. To the west of *Kudat* is the South China Sea, and to the east is the Sulu Sea. [21] [22] [23] The study area covers Kampung Tanjung Kapor with an estimated population of 400-450 houses as follows:

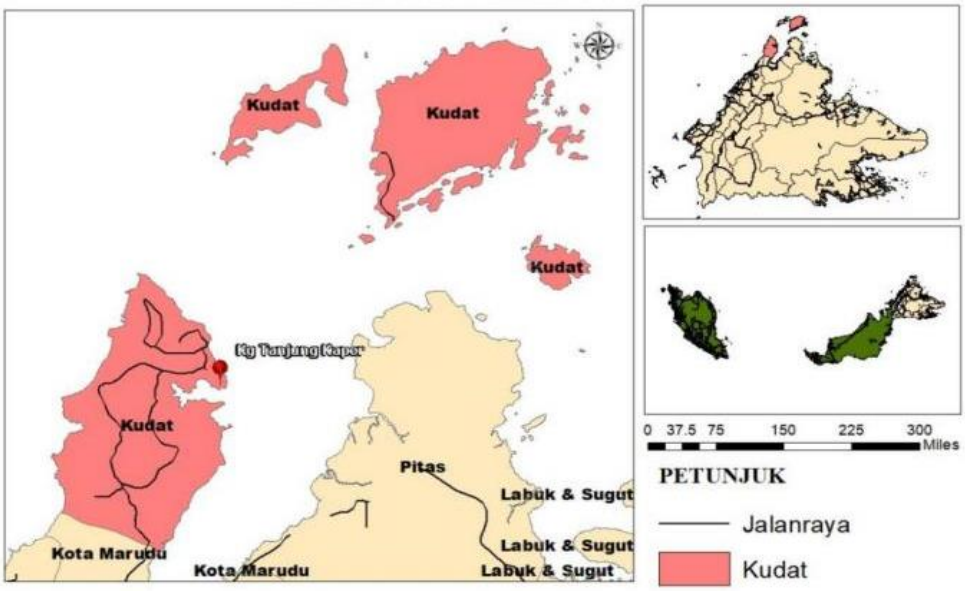

Figure 1.
Map of Kudat district
Source: modified from DIVA-GIS and Google Earth Pro, 2021

FINDINGS AND DISCUSSION

Two types of research variables are used, namely dependent/bound variables and independent/independent variables. Dependent variables refer to variables influenced by other variables such as gender, education level, and total monthly income. Separate/independent variables refer to values that do not depend on different variables or variables that affect other variables, in which community behavior is the dependent variable in this study.

Table 1.
Results of the regression validity test

Variables	Total Corrected Variable Correlations	Validity
Socioeconomic Background	0.141	Valid
Community behavior	0.169	Valid

The results of this regression validity test table are based on the following equation,

$$r = \frac{t}{\sqrt{df + 2}}$$

where,
r = value of table *r*
t = value of table t
df = degrees of freedom
* *r*-value refers to the number of corrected variables

In determining the validity of the regression in this study, the value of *r* is positive and more significant than the value of t with the assumption;

H_o : The validity of the study shows that there is a relationship between the study variables
H_1: The validity of the study shows that there is no relationship between the study variables

A total of 5% (df) = n-2; therefore *r* value = 0.1323, and the *t* value, respectively 0.141 (socioeconomic background) and 0.169 (community behavior) shows that the t value is

greater than the *r*-value, which means H_o is accepted. Therefore, the results show that the questions or items in the study regarding the socioeconomic background and community behavior have an influence and validity on this study. The regression analysis determines how much a variable can influence other variables. It is determined based on a percentage value where the higher the value obtained, the more substantial the influence of the variable on the variable in the study and vice versa. The lower the value accepted standards, the weaker the variable is to influence other variables in the study.

Table 2.
Results of Regression Analysis between Background and Level of Knowledge

Variables	Regression coefficient	t	Sig.
Education	-0.139	-2.078	**0.039**
Constant	99.929		
R Square	0.019		
Varibables	Koefisien regresi	t	Sig.
Monthly Income	-0.145	-2.159	**0.032**
Constant	99.262		
R Square	0.021		

The influence of socioeconomic background on behavior has been studied many times, especially in domestic waste disposal. In this study, research has been done on several locations. The research results are shown in Table 2 above. The table above shows the linear equation of some of the respondents' backgrounds on community behavior which was analyzed using SPSS software. Not all background variables significantly influence the respondent's behavior toward managing face mask waste.

From the table above, it was found that the respondents' education and income influenced the respondent's behavior toward the management of face mask waste. For example, a significant value of 0.001 < 0.05 for the education variable means that there is a meaningful linear relationship with community behavior. However, there is still a meaningful relationship between education and the level of community knowledge because the critical value of the t distribution and the t value in the table is 0.674 > -2.078. The R^2 value is 0.039 showing that 0.5% of the influence of education contributes to community behavior, and other factors influence the rest. An amount as small as 0.5% still impacts even though it is only considered a minor contributor in controlling something. These research findings support the study, which found significant knowledge among men and young people who are highly educated. The lack of education explains how the role of the mass media that uses the local language as a vehicle for exposure to the risk of the virus has created problems when inaccurate speculations erupt in the community and that the behavior in managing face masks is considered unimportant. (10)

For the income variable, the critical value of the t distribution and the t value in the table is 0.674 > -2.159; therefore, H_o is rejected with the conclusion that there is a significant relationship between income and community behavior and the considerable value shows 0.032 < 0.05 which means the relationship between the variables is linear. The R^2 value explains that as much as 0.2% of this income variable influences the level of knowledge in the use and management of face mask waste during the COVID-19 pandemic. Face masks were sold at inconsistent prices, either cheap or expensive, so the community did not face the problem of face mask shortage as each could buy the face masks. However, some countries that experienced issues with water, soap, and sanitizers, as stated, have encouraged non-compliance with the use and management of face masks. This shows that access and income influence community behavior during the COVID-19 pandemic.(14)

Overall, the level of education with community behavior shows a weak positive correlation. However, it also means that the better a person's level of education is, the more positive or better behavior can be built. For example, individuals with a higher level of education are more likely to have better behavior in society. This is because, with a better level of education, individuals act more following the needs based on sound values. A poor

level of education will encourage bad behavior and hinder the effective management of face masks.

Meanwhile, a high amount of income also affects individual behavior. This study shows a weak positive correlation where the advantage of having a better income opens up more access to individuals through access to social media or formal and informal education. This situation, in turn, has a good effect on the community's behavior when the amount of income opens up opportunities for them to obtain more available information.

CONCLUSIONS

This study aims to explain the influence of socioeconomic background and its impact on the population's behavior in taking care of the remaining half-face masks during a pandemic. The study concludes that socioeconomic backgrounds, such as income and education, influence the behavior of managing face mask waste. Although the use of face masks is less emphasized from a practical point of view, the behavior and awareness of respondents in managing are at a satisfactory level. In this regard, public understanding is fundamental to overcoming this problem. Following these efforts, local governments have introduced policies and procedures to resolve the mask waste issue.

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