

HOW DOES COVID-19 INFLUENCE CUSTOMER BEHAVIOUR IN ONLINE SHOPPING IN INDONESIA?

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Abstract - E-Commerce is the distribution, purchase, sale, marketing of goods and services through electronic means such as the internet or television, or other computer networks. As a digital application, a company must have its own advantages and uniqueness that can attract consumers to use its platform continuously. This study analyzes the factors of consumer behavior towards e-Commerce during COVID-19. In this study, research was carried out using a questionnaire technique that was distributed to target respondents, namely users who actively use e-Commerce. The research model used in this study adopted the model that had been done on previous study. The data analysis method used in this research is descriptive statistics and quantitative test using SPSS 25. The results of the study with the number of samples obtained in this study were 151 samples showing that the factors that influence Consumer behavior are attitudes and awareness of behavior.

Keywords: Consumer Behavior; COVID-19; Digital Application; E-Commerce; Quantitative Test.

1. INTRODUCTION

1.1. Research Background

As was widely known in January 2020, COVID-19 emerged as a global health emergency. This case was initiated by data released by the World Health Organization (WHO) on December 31, 2019, which documented a cluster of pneumonia in Wuhan City, Hubei Province, China, with an unknown cause. As the investigation progressed, reports of fatalities and imports beyond the borders of China surfaced. The World Health Organization classified COVID-19 as a Public Health Emergency of International Concern (PHEIC) on January 30, 2020. The World Health Organization formally designated this novel coronavirus disease in humans as Coronavirus Disease (COVID-19) on February 12, 2020. Indonesia disclosed two confirmed instances of COVID-19 on March 2, 2020. The WHO classified COVID-19 as a pandemic on March 11, 2020 (KEMENKES, 2020). Amidst such a pandemic, every individual requires materials to fulfill their daily necessities. Individuals who depend on food, drink, and other essentials for survival and are accustomed to visiting the market or supermarket for their purchases must refrain from doing so out of concern for potential exposure to the virus. Consumers who make purchases of essential items ultimately favor electronic commerce to fulfill their requirements, including but not limited to food, beverages, toiletries, and culinary

supplies. E-commerce encompasses the marketing, purchase, and distribution of products and services through electronic channels, including but not limited to the internet, television, and computer networks (www). Electronic commerce may encompass various processes such as data exchange, automated inventory management, automated data collection, and electronic funds transfer. E-Commerce activities are classified as e-business applications and applications associated with commercial transactions by the information technology industry. Examples of such applications include electronic marketing, SCM (Supply Chain Management), online transaction processing, electronic data interchange (EDI), and funds transfer. As stated by Harmani (2020).

In 2019, Indonesia has the highest e-commerce penetration rate globally, with nearly 90 percent of internet users aged 16 to 64 having made an online purchase of goods or services. The research findings identify a number of e-commerce trends that proprietors of businesses must proactively anticipate. To begin with, augmenting consumer engagement and purchasing power among non-Javanese clients. According to data obtained from Harbolnas (National Online Shopping Day) 12:12 ago, regions beyond Java, including West Nusa Tenggara, Bengkulu, and even Papua, have experienced a substantial surge. This upward trend is anticipated to persist in 2020, according to Kominfo.go.id (2019). This circumstance demonstrates the economic value of electronic commerce enterprises; therefore, business actors, particularly micro, small, and medium-sized enterprises (MSMEs), must utilize them (Republika, 2019). 12 million new e-Commerce users have joined since the beginning of the nearly nine-month-long COVID-19 pandemic, and at least 40 percent, according to a survey by Sirclo Insight, will develop an online purchasing habit during the course of the outbreak. In contrast to initial projections of a 54 percent expansion, the growth of electronic commerce surpassed 90 percent (Detik, 2020).

Consumer behavior is the examination of the ways in which organizations, groups, or individuals select, acquire, utilize, and position products, services, experiences, or concepts in order to fulfill their desires, as well as the consequences of these actions for consumers and society at large (Hawkins, 2012). Consumer behavior is a study of the processes that occur when individuals or groups of people select, utilize, or discard a product, service, concept, or experience in order to fulfill their needs and desires (Solomon, 2020). As such, its scope is extensive. Therefore, consumer behavior can be defined as an examination of the manner in which an individual or group's disposition influences their entitlements to select, purchase, utilize, and substitute a product or service with the intention of attaining desired outcomes from said product or service. Consumer behavior is defined by Kotler in Sangadji (2014) as the study of purchasing units, including organizations, groups, and individuals. These units will establish markets, resulting in the formation of consumer or individual markets, collective purchasing units, and business markets by organizations. As a result, consumer behavior concerning the advantages of e-commerce during the COVID-19 pandemic will be the focus of this study. Extensive investigation was undertaken to ascertain the determinants that impact electronic commerce amidst the COVID-19 pandemic.

1.2. Research Questions

Along with COVID-19, many people are unable to carry out activities outside the home to meet their needs. With e-Commerce, all the needs of society can be met. These factors influence consumer behavior towards using e-Commerce applications. Based on the problem formulation above, the following is the problem formulation in this discussion:

1. How significant attitudes will influence consumer behavior?

2. How significant subjective standards will influence consumer behavior?
3. How significant behavior awareness will influence consumer behavior?
4. How significant shopping intention will influence consumer behavior?
5. How significant buying behavior will influence consumer behavior?

1.3. Literature Review

1.3.1 Previous Research

The following is previous research related to this research.

Table 1. Previous Research

Author(s)	Jahagir Alam
Journal	Chinese Business Review, Mar. 2020, Vol. 19, No. 3, 82-90 doi: 10.17265/1537-1506/2020.03.002
Title	Buying Behavior Under Coronavirus Disease (COVID-19) Pandemic Situation: A Online Perspective Case in Bangladeshi.
Method	Data collected from 155 valid questionnaires was analyzed using Descriptive Analysis. With SPSS 25.0
Result	Several hypotheses are accepted. Based on the calculation results, the variables Health Aspect, Place Aspect, Price Aspect, Product Aspect have a positive effect on online shopping. Meanwhile, Trust Aspect has a negative effect on online shopping.
Author(s)	Meher Neger, Burhan UddinYong Qi
Journal	Chinese Business Review, Mar. 2020, Vol. 19, No. 3, 91-104 doi: 10.17265/1537-1506/2020.03.003
Title	Factors Affecting Consumers' Internet Shopping Behavior During the COVID-19 Pandemic: Evidence From Bangladesh
Method	Data collected from 230 valid questionnaires were analyzed using Descriptive Statistics Analysis, Reliability Statistics Analysis, and Multiple Regression Analysis. Using SPSS 25.0.
Result	The existing hypotheses are accepted. Based on the calculation results, users feel that Product Factor, Time Saving Factor, Payment Factor, Administrative Factor, Psychological have a very significant effect, while Price Factor and Security Factor have no effect on Internet Shopping Behavior.
Author(s)	Nguyen Thu Ha, Hoang Dam Luong Thuy
Journal	VNU Journal of Science: Economics and Business, Vol. 36, No. 3 (2020) 11-21
Title	Consumer Behaviour Towards Vietnamese Online Shopping Websites in the Covid-19 Pandemic
Method	Data collected from 170 valid questionnaires was analyzed using Descriptive Analysis, Regressions Analysis.
Result	Several hypotheses are accepted. Based on the calculation results, it shows that the TPB model in this area is statistically significant and the results confirm that the three factors have a positive impact on people's intentions and behavior, ranked in order of influence. Attitudes, Subjective Standards and Perceived Behavioral Control.

According to Table 1, this research shares several commonalities. These include a focus on Consumer behavior, the use of data collecting methods involving questionnaires, the presence of Consumer behavior variables, and a specific emphasis on e-Commerce. These parallels are evident in the works of Alam (2020), Neger and Uddin (2020), and Nguyen Thu Ha (2020). Moreover, there exist several disparities in the studies, specifically: Various research models are employed in the field. For instance, two studies conducted by Alam (2020) and Nguyen Thu Ha (2020) utilize the Descriptive Statistics model. Additionally, other research employs different models. Suggest a research model centered on Perceived Organizational Readiness (POER) and Perceived Environmental E-Readiness (PEER) as

proposed by Neger and Uddin (2020). However, it should be noted that while each study includes a consumer behavior variable, the other variables employed in each study differ, as indicated by Alam (2020), Nguyen Thu Ha (2020), and Neger and Uddin (2020). In addition, the number of data points utilized in each study varies. One study employed 155 data points (Alam, 2020), another study utilized 230 data points (Neger & Uddin, 2020), and yet another study utilized 170 data points (Nguyen Thu Ha, 2020). Furthermore, the analysis methods employed in these studies also differ. For instance, some studies utilized SPSS 25.0 (Alam, 2020; Neger & Uddin, 2020), while another study employed AMOS 20 (Nguyen Thu Ha, 2020). Furthermore, the data calculation methods employed in each study vary. Some studies utilize KMO and Bartlett's Test (Alam, 2020), while others employ Descriptive Statistical Analysis (Neger & Uddin, 2020) or Regression Analysis (Nguyen Thu Ha, 2020). Similarly, the hypotheses in each study differ due to the distinct objectives pursued by the respective authors (Alam, 2020), (Nguyen Thu Ha, 2020), (Neger & Uddin, 2020). Upon analyzing the resemblances and disparities in each study, this research will employ a research model in a study (Nguyen Thu Ha, 2020). The adoption was conducted to establish the correlation between Attitudes, Subjective Standards, Behavioral Awareness, Shopping Intentions, Buying Behavior, and Consumer Behavior factors among new participants, namely user respondents in Jakarta with e-Commerce objects.

2. RESEARCH METHODOLOGY

2.1. Research Object

The research object of the Descriptive Statistics analysis is the marketplace-based e-Commerce users that are used by the users who are most affected by COVID-19, namely users who live in DKI Jakarta. The data that will be obtained are users who have been affected by COVID-19 from the January 2020 to December 2020.

2.2. Research Model

Based on the literature review, this study was decided to use the descriptive statistic and quantitative method with 5 variables, namely Attitude, Subjective Standards, Behavioral Awareness, Shopping Intentions, Buying Behavior.

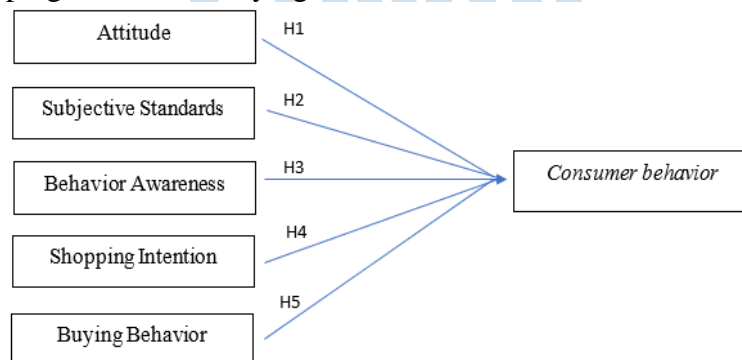


Figure 1. Research model

2.3 Research Hypothesis

The following is the hypothesis used in this study:

Hypothesis 1: Attitudes will affect consumer behavior

Hypothesis 2: Subjective standards will influence consumer behavior.

Hypothesis 3: Behavior awareness will influence consumer behavior.

Hypothesis 4: Shopping intention will influence consumer behavior.

Hypothesis 5: Buying behavior will influence consumer behavior.

2.4. Research Method

2.4.1. Descriptive Statistics

Research methods are procedures or scientific methods for obtaining data with a specific purpose; descriptive research is research that uses observation, interviews, or questionnaires regarding the current situation regarding the subject we are researching (Resseffendi 2022). Through questionnaires and so on, we collect data to test hypotension or answer a question. Through descriptive research, the researcher explains the actual occurrences of the current situation under investigation. Sugiyono (2017) said that research methods are basically scientific characteristics for obtaining data with certain purposes and uses. The method used in the quantitative approach. The research approach in this thesis uses a quantitative research approach, as stated (Sugiyono 2017): quantitative research methods are defined as research methods based on the philosophy of positivism, used to research certain populations or samples, collect data using research instruments, and analyze the data, which is quantitative or statistical in nature, with the aim of identifying predetermined hypotension. Researchers use this quantitative approach to measure the level of acceptance and non-acceptance of marketplaces in society during a pandemic. Descriptive statistics is a part of statistics that studies how to collect and present data so that it is easy to understand. Descriptive statistics only relate to describing or providing information about data or circumstances. In other words, descriptive statistics function to explain conditions, symptoms, or problems. Drawing conclusions from descriptive statistics (if any) is only aimed at the existing data collection. Numerical measures are one way of describing data; here is the explanation. Numerical measures are divided into two, namely data centering measures, including mean, median, mode; as well as measures of data spread, including range, variance and standard deviation (Lee & Wella, 2018).

2.4.2 Centering Measure

Data centralization measures are any size that indicates the center of a cluster of data, which has been ordered from smallest to largest or vice versa from largest to smallest. Centralization measures or location sizes are several measures that indicate where the data distribution is centralized. The centrality measure is a single value that can represent a data set and its characteristics (shows the center of the data value). Types of centering measures include (Lee & Wella, 2018):

- Average (Mean). The average is a very frequently used measure of centrality. The advantage of calculating the average is that this number can be used as an illustration or representative of the observed data. The average is sensitive to the presence of extreme values or outliers.
- Middle value (Median). The middle value is a centering measure value that occupies the middle position after the data is sorted. The middle value has the advantage that it can be easily calculated.
- Mode. The mode is the value that occurs most frequently in a series of data. The mode cannot be used as a description of the data.

2.4.3 . Measures of Data Spread/Dispersion

The measure of data dispersion is a measure that shows how far the data is spread from the average (Lee & Wella, 2018). Through the dispersion measure, it can be seen how far the data spreads from its point of concentration. Types of distribution measures include:

- Range (=R). The range is denoted as R, expressing a measure that shows the difference in value between the maximum and minimum. The range is quite good for measuring the distribution of data that is symmetrical and the data values are spread evenly. This measure becomes irrelevant if the maximum and minimum data values are extreme values.
- Variance (=s² or σ^2). Variance, denoted as s² or σ^2 , is a measure of data spread that measures the average squared distance of all observation points from the mean value.
- Standard Deviation (=s or σ). Standard deviation is denoted as s or σ , indicating the average distance between the measurement results and the average value.

3. RESULT AND DISCUSSION

3.1. Questionnaire Filling Results

3.1.1. Respondent Demographic Report

From the results of the demographic summary of the respondents in Table 2, it can be seen that the majority of respondents are male, the majority of the age is 18 - 25 years. The majority of online shopping is > 4 times.

Table 2. Respondent's Demographic Summary

Gender	Man	87 (57,6%)
	Women	64 (42,4%)
Age	18 - 25	101 (66,9%)
	25 - 40	49 (32,5%)
	41 - 55	1 (0,7%)
Online Shopping	1 time	19 (12,6%)
	2 - 4 times	52 (34,3%)
	> 4 times	80 (53%)

3.1.2. Research Variables and Indicators

The research variables and indicators raised in the distributed questionnaire are as listed in Table 3 below.

Table 3. Variables and Indicator Questionnaires

No	Variable	Code	Indicator	Source
1	Attitude	TD1	Lower Price	(Nguyen Thu Ha, 2020)
		TD2	The number of couriers	
		TD3	Provide convenience in finding goods	
		TD4	Can exchange goods	
		TD5	Activities become safer	
2	Subjective Standards	CM1	Be more active in the marketplace	(Nguyen Thu Ha, 2020)
		CM2	Must be shopping online	
		CM3	Influence of people around	
		CM4	Based on government recommendations	
		CM5	Moral messages in social media	
		CM6	Social stress or illness	
3	Awareness Behavior	NT1	Reduce infection	(Nguyen Thu Ha, 2020)
		NT2	Reducing the crowd	
		NT3	Limitation of social scale	

No	Variable	Code	Indicator	Source
		NT4	Feel comfortable shopping online	
4	Shopping Intentions	YD1	Very necessary goods	(Nguyen Thu Ha, 2020)
		YD2	Online shopping plan	
		YD3	Buy online	
		YD4	Buy in the future	
		YD5	Give online shopping advice	
5	Buying Behavior	HV1	Always shop online	(Nguyen Thu Ha, 2020)
		HV2	Prioritize online shopping	
		HV3	Shop online regularly	
		HV4	Buy more items in the future	

Here are the result of questionnaire.

Table 4. Questionnaire Results

Scale	1	2	3	4	5
Attitude					
TD1	0	2	19	82	48
TD2	0	0	49	84	18
TD3	0	2	38	87	24
TD4	1	1	48	70	31
TD5	0	1	31	86	33
Subjective Standards					
CM1	1	3	35	77	35
CM2	1	0	42	83	25
CM3	2	2	44	78	25
CM4	0	2	40	79	30
CM5	0	6	45	76	24
CM6	0	0	33	82	36
Awareness Behavior					
NT1	0	0	27	75	49
NT2	0	1	46	77	27
NT3	0	1	44	84	22
NT4	0	0	35	79	37
Shopping Intentions					
YD1	0	0	27	84	40
YD2	1	0	37	92	21
YD3	1	0	57	63	30
YD4	0	2	38	77	34
YD5	1	0	32	82	36
Buying Behavior					
HV1	0	2	21	80	48
HV2	0	1	41	82	27
HV3	1	2	40	76	32
HV4	1	0	31	89	30

Table 4 can be seen for the Attitude, Subjective Standards, Behavior Awereness, Shopping Intentions, and Buying Behavior, the majority of respondents' answers are spread on a 3-5 scale.

3.2. Descriptive Statistic

This study will use the descriptive statistic method based on questionnaire data that has been collected from the respondents. Data processing in this study will use IBM SPSS Statistic 25.

3.2.1. KMO and Barlet Test

In this study, the KMO and Barlet test will be tested with a total of 24 variables included in the factor analysis. Initially the correlation matrix was created and then the factor model suitability test was carried out. The KMO and Barlet test has been used to test the hypothesis whether these variables are correlated in the population or not. As shown in Table 5, KMO and Barlet reveal that the chi-square statistical estimate is 1061,521 with 276 degrees of freedom significant at the 0.05 level and the KMO statistical value (0.806) also greater than 0.5. Consequently, factor analysis should be considered as an approximate method for analyzing data. Using the varimax rotation, the test has developed five uncorrelated aspects that have an Eigenvalue greater than 1.

Table 5. KMO and Barlet Test

<i>Kaiser-Meyer-Olkin measure of sampling adequacy</i>		0.806
<i>Barlett's test of sphericity</i>	<i>Approx. Chi-Square</i>	1061.521
	<i>df</i>	276
	<i>Sig.</i>	0.000

3.2.2. Rotated Component Matrix

From the Rotated Component Matrix below, this study assimilates the following uncorrelated aspects and Cronbach's Alpha for the existing variables.

Table 6. Rotated Component Matrix

	<i>Component</i>					
	1	2	3	4	5	6
Lower price			0.686			
The number of couriers				0.583		
Provides convenience				0.642		
Exchange of goods	0.453					
Safer activities						0.733
Be more active marketplace					0.694	
Must be shopping online	0.603					
Influence of people around	0.483					
Government advice						0.558
Moral messages on social media	0.507					
Social stress or illness				0.594		
Reduce infection					0.635	
Reducing the crowd		0.623				
Limitation of social scale	0.572					
Convenient in shopping				0.408		
Very necessary goods				0.505		
Online shopping plan					0.613	
Buy online		0.612				
Buy in the future	0.691					
Give shopping advice		0.675				
Always shop online			0.691			
Prioritize online shopping	0.653					
Shop online regularly		0.518				
Buy more items			0.677			

3.2.3. Uncorrelated Aspect & Reliability Analysis

The uncorrelated aspects and the reliability analysis are shown in Table 7. Attitude of 0.650. The subjective standard aspect is 0.658. The behavioral awareness aspect is 0.514. The shopping intention aspect is 0.620. Likewise, the aspect of buying behavior is 0.538. Reliability

analysis was measured through Cronbach's alpha coefficient to examine the internal dependence of the constructs. All constructs have no reliability problems if the Cronbach's Alpha value exceeds the criteria 0.50 - 0.70 (Perry R. Hinton, 2014). The analysis results show that all Cronbach's Alpha values are greater than 0.50. Therefore, the survey instrument can be relied upon to measure all aspects.

Table 7. Uncorrelated Aspect & Reliability Test

<i>No</i>	<i>Aspect</i>	<i>Variable</i>	<i>Cronbach's Alpha</i>
1	Attitude	Lower price	0.650
		The number of couriers	
		Provides convenience	
		Exchange of goods	
		Safer activities	
2	Subjective Standards	Be more active marketplace	0.658
		Must be shopping online	
		Influence of people around	
		Government advice	
		Moral messages on social media	
3	Awereness Behavior	Social stress or illness	0.514
		Reduce infection	
		Reducing the crowd	
		Limitation of social scale	
		Convenient in shopping	
4	Shopping Intentions	Very necessary goods	0.620
		Online shopping plan	
		Buy online	
		Buy in the future	
		Give shopping advice	
5	Buying Behavior	Always shop online	0.538
		Prioritize online shopping	
		Shop online regularly	
		Buy more items	

3.2.4. Model Summary

As shown in Table 8, the value of the correlation coefficient (R) is equal to the recommended 0.317. There is a moderate positive relationship between consumer behavior in the conditions of the coronavirus disease (COVID-19) pandemic with aspects of attitude, subjective standards, awareness of behavior, shopping intentions, buying behavior. However, only 10.1% (R-square value 0.101) The variation in consumer behavior in the coronavirus disease (COVID-19) pandemic situation was taken into account in the aspects of attitude, subjective standards, awareness of behavior, shopping intentions, buying behavior. The adjustment (R²) is 0.070 which indicates that these aspects can significantly account for 7.0% of the variation in consumer behavior in the coronavirus disease (COVID-19) pandemic situation.

Table 8. Model Summary

<i>Model</i>	<i>R</i>	<i>R square</i>	<i>Adjusted R Square</i>	<i>Std. error of the estimate</i>
1	0.317	0.101	0.070	0.679

3.2.5. ANOVA

As shown in Table 9, linear regression analysis was carried out to study the relationship between attitudes, subjective standards, behavioral awareness, shopping intentions, buying behavior and consumer behavior in the coronavirus disease (COVID-19) pandemic situation. Five hypotheses are proposed and the results calculated. The F-value is 3.249 with a significant level of 0.008 which is less than 0.01 with 5 and 145 degrees of freedom and ensures the suitability of the model for linear regression analysis.

Table 9. ANOVA

Model		Sum of square	df	Mean square	F	Sig.
1	Regression	7.492	5	1.489	3.249	0.008
2	Residual	66.866	145	0.461		
3	Total	74.358	150			

3.2.6. Coefficients

Table 10. Coefficients

Path	Coefficient	t-value	p-value	Impact
Attitude » Consumer behavior	0.188	2.031	0.044	Accepted
Subjective Standard » Consumer behavior	-0.105	-0.879	0.381	Rejected
Awareness Behaviour » Consumer behavior	0.281	2.377	0.019	Accepted
Shopping Intentions » Consumer behavior	0.055	0.443	0.685	Rejected
Buying Behaviour » Consumer behavior	-0.160	-1.378	0.170	Rejected

As shown in Table 10, the analysis includes all coefficients (β), t-values, and p-values. The six aspects were tested using a two-sided t-test with a significance level of 5% where the standard coefficient is significant if the t-value exceeds 1.96. The results showed that two of the five aspects were significantly related to consumer behavior in the coronavirus disease (COVID-19) pandemic situation. In contrast, three other factors do not have a significant relationship with consumer behavior in the coronavirus disease (COVID-19) pandemic situation. Attitude and behavioral awareness aspects have a significant relationship with consumer behavior in the coronavirus disease (COVID-19) pandemic situation at $p < 0.05$. Thus the aspects of attitude and behavioral awareness can be accepted. On the other hand, the subjective standard aspects, shopping intentions and buying behavior do not have a significant relationship with consumer behavior in the coronavirus disease (COVID-19) pandemic situation.

4. CONCLUSION

This study aims to find out what factors influence the level of e-commerce spending in Indonesia, and aims to determine how much influence these factors have on e-commerce during the COVID-19 pandemic in Indonesia. This study has variables such as attitudes, subjective standards, behavioral awareness, shopping intentions, and buying behavior. This measurement uses descriptive statistics, the application used is SPSS 25.0. Based on the analysis of the results of this study, it can be concluded that the level of significant influence occurs on attitudes and awareness of behavior, from the results obtained that attitude and awareness of behavior have an effect on consumer behavior in Indonesia. The results obtained are at fair value. Therefore, the significant results only show 2 variables, namely attitude and awareness of behavior. For the subjective standard variables, shopping intention and buying behavior, there is no significant effect on consumer behavior to shop online using the marketplace amid the COVID-19 pandemic. Given the following limitations, it is beneficial to proceed with caution when

analysing the findings of this research. First, this study was conducted online using a self-report scale to measure research variables. Second, geographically limited sample and cross-sectional research design. Nevertheless, results were consistent with other related research and thus enhanced confidence in the findings.

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