Do Students' Personality Characteristics Predict COVID-19 Safety Measures Compliance? Evidence from University Students at University of Dar es Salaam

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Abstract

The study aimed at investigating the predictability of personality characteristics on COVID-19 safety measures compliance. Specifically, the study aimed at examining the influence of agreeableness, conscientiousness, emotional stability, extraversion, openness to experiences on COVID-19 safety measures compliance. The study is based on cross-sectional research design whereby data were collected from university students. Through a questionnaire survey, data were collected from 450 university students at the University of Dar es Salaam. Based on SmartPLS estimates, it was found that four students' personality characteristics i.e. agreeableness, conscientiousness, extraversion and openness to experiences significantly predict COVID-19 safety measures compliance. The study revealed that agreeableness, conscientiousness and openness to experiences have a positive prediction on COVID-19 safety measures compliance. Moreover, the study revealed that extraversion personality has a negative prediction on COVID-19 safety measures compliance. However, the study failed to establish the predictability of emotional stability as one of students' personality characteristics on COVID-19 safety measures compliance. The study suggests a unique perspective on the predictability of personality characteristics on COVID-19 safety measures thus complementing previous studies based on university students' perspective. The positive predictability of agreeableness, conscientiousness and openness to experiences as well as the negative predictability of extraversion on COVID-19 safety measures compliance tend to increase the soundness of personality characteristics in complying with established standards. Thus, understanding personality characteristics of people such as university students is essential in determining the extent of COVID-19 safety measures compliance.

Key Words: Agreeableness; Conscientiousness; Extraversion; Openness to Experiences; COVID-19 Safety Measures Compliance

Introduction
The year 2020 will remain unforgettable due to the emergence of the corona-virus disease (COVID-19) caused by a novel corona virus (SARS-CoV-2). Since the world wide spread of the disease preventive measures for combating COVID-19 as well as inhibiting further spread of viruses have been identified. Some of the identified measures are keeping social distance to other people, avoiding crowded places, using hand sanitizers, wearing face masks, frequently washing hands, quarantining (isolating) and taking COVID-19 vaccine (Srivastava and Saxena, 2020). According to the World Health Organization (2020), people conduct especially in adhering to safety measures, inhibits further spread of COVID-19. It can be noted that the suggested safety measures tend to affect normal habits of people. Additionally, complying with safety measures in order to limit the spread of the disease has been accompanied with vulnerable and undefined economy. Due to the presence of COVID-19 disease, people have to select activities that they can afford in complying with COVID-19 safety measures while performing them. Moreover, some of the activities were postponed for sometimes while hoping COIVID-19 outbreak to seize after a short period. The expectations for the outbreak to last for a short period failed and people had to learn how to adopt with COVID-19 situation (Singh, 2020). In line with that, most activities were resumed while ensuring that all COVID-19 protocols are observed. For example, the University of Dar es Salaam resumed studies after postponing them for sometimes, and all COVID-19 protocols were insisted to be followed. One of the notably efforts taken by University of Dar es Salaam to help compliance with COVID-19 safety measures was ensuring that many places at University premises were installed with hand washing facilities with soap. Additionally, the University of Dar es Salaam management posted posters that aimed at providing awareness on protocols to be observed, including the wearing of face masks.

Notably, reactions to COVID-19 safety measures among people tend to differ. Therefore, several questions in this study have to be addressed such as: To what extent people tend to differ in complying with COVID-19 safety measures? What type of people abide with COVID-19 safety measures? What type of people do not abide with COVID-19 safety measures? Since this paper focuses on the predictability of personality characteristics on COVID-19 safety measures, it is important to distinguish between personality and personality characteristics. According to Kazdin

(2000) personality refers to individual differences in characteristic patterns of thinking, feeling and behaving while personality characteristics entail classification of personality into various groups such as agreeableness, conscientiousness, emotional stability, extraversion and openness to experiences as far as this study is concerned (John et al., 2008).

Thus, from the above questions it can be argued that personality characteristics are vital in responding to the above questions. Due to different personality characteristics, it becomes difficult to predict reactions of people on COVID-19 safety measures compliance (Caspi and Moffitt, 1993; Pinquart & Silbereisen, 2004). For instance, some people could assume that conscientious individuals tend to have higher chances of complying with safety measures while others can assume that extraverts tend to have lower chances in complying with safety measures. Adding on that, people characterized with openness to experience may be assumed to be adaptive to safety measures standards while people with agreeableness feature may be assumed to be believing in information regarding COVID-19 and believing in recommended safety measures enough to comply with.

According to John, Naumann and Soto (2008), people's characteristics can be well explained with five giant spheres, namely agreeableness, conscientiousness, extraversion, openness to experience and emotional stability. Currently, though, scholars have put effort in investigating in supplement to the giant five spheres further explicit features of these broad spheres (for instance Mõttus, 2016; Soto & John, 2017). According to Danner et al. (2021) and Rammstedt, Lechner and Weiß (2021) this increasing investigation gives clues that not only shallow features of personality sphere have better projection muscle than universal spheres however, they portray disparity predictability with dissimilar dependent variables. For instance, the studies show existence of dissimilar features of conscientiousness, especially the feature of responsibility when related to health safety measures compliance (Roberts et al., 2005). Therefore, contradictory predictability of personality characteristics necessitates additional studies as this study do.

Previous studies conducted by Lechner, Obschonka and Silbereisen (2017) as well as Pavlova and Silbereisen (2013) have proven the personality functional in explaining abruptly changes in a society. However, studies based on personality functional in explaining the COVID-19 adaptive measures are yet limited. Additionally, most previous studies such as ones conducted by Brouard, Vasilopoulos and Becher (2020); Pavlova and Silbereisen (2013) and Zettler, Schild, Lilleholt, Kroencke, Utesch,

Moshagen, Morten, Böhm, Back and Geukes (2020) on personality and COVID-19 connection have based on qualitative studies while leaving a gap in quantitative studies. Secondly, with the exceptional of studies conducted by Aschwanden, Strickhouser, Sesker, Lee, Luchetti, Stephan, Sutin and Terracciano (2021) and Modersitzki, Phan, Kuper and Rauthmann (2020), most previous studies have focused on the universal giant five spheres of personality without taking into account likely variance effects of precisely additional features of the same universal giant five spheres of personality. Thirdly, previous studies on the role of safety measures in combating the spread of COVID-19 have considered only one characteristic of people such as washroom paper hoarding or hand cleanliness (Carvalho, Pianowski & Gonçalves,2020; Garbe, Rau & Toppe , 2020).

The Big Five Personality Dimensions
This article employed the big five personality dimensions to determine the predictability of COVID-19 safety measures. According to the WHO (2020), safety measures to be considered are not limited to keeping social distance, avoiding crowding, sanitizing, wearing masks, washing hands and being vaccinated. Peoples' responses to such measures depend on the big five personality dimensions which are extraversion, agreeableness, conscientiousness, emotional stability, and openness to experiences. According to Gosling et al. (2003) extraversion as one of personality dimensions, captures issues of how one considers himself/herself as extraverted, enthusiastic, reserved, and quite.

Likewise, agreeableness as another form of personality trait captures issues of how one considers himself/herself as critical, quarrelsome, sympathetic and warm (Gosling et al., 2003). Additionally, conscientiousness as one of personality dimensions captures issues of how one considers himself/herself as dependable, self-disciplined, disorganized and careless (Gosling et al., 2003). Furthermore, according to Gosling et al. (2003), emotional stability entails explaining how one considers himself/herself as anxious, easily upset, calm and emotionally stable. Lastly, openness to experiences entails explaining how one considers himself/herself as open to new experiences, complex, conventional and uncreative (Gosling et al., 2003).
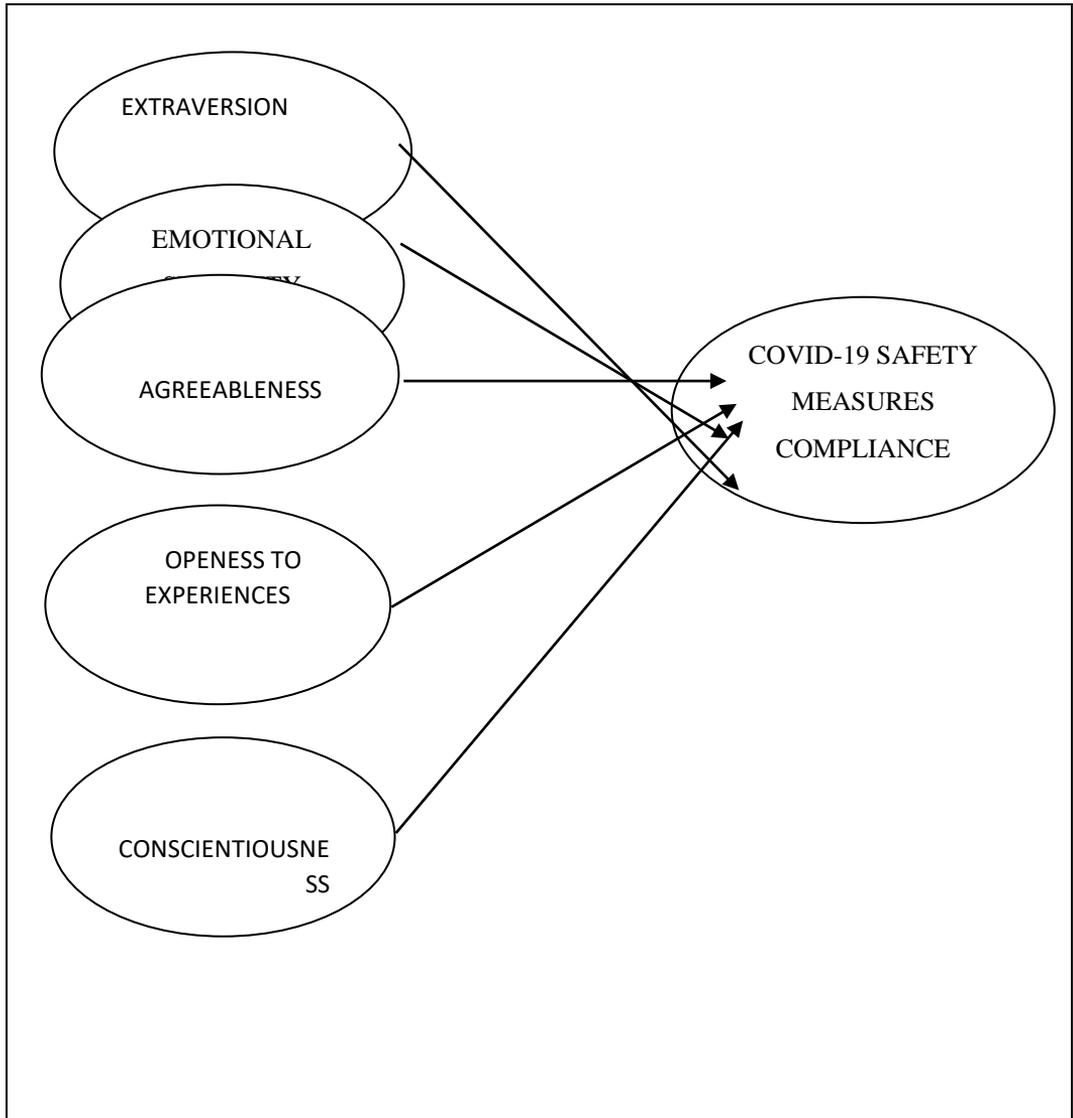
Figure 1: Researcher's Conceptual Model

Research Model and Hypotheses

Generally, previous research has shown that peoples' characteristics are related with COVI-19 safety measures adherence. However, based on five personality dimensions previous studies have shown contradictory results that need more research to find additional justification. Starting with the extraversion dimension, it can be noted that a study conducted by Blagov (2021), Brouard et al. (2020), Carvalho et al. (2020), Chan et al. (2021) and Modersitzki et al. (2020) revealed that extraversion is negatively related with COVID-19 safety measures compliance. In contrast, studies conducted

by Aschwanden et al. (2021), Modersitzki et al. (2020) and Zettler et al. (2020), have revealed that extraversion personality has a positive association with COVID-19 safety measures. Such contradictory results have necessitated a search for further evidence on the negative side of COVID-19 safety measures compliance and thus, hypothesis one is formulated as:

H1: People characterized by extraversion personality are negatively associated with COVID-19 safety measures compliance.

Emotional stability personality has also shown contradictory results on COVI-19 safety measures compliance. For instance, Gubler et al. (2021), Kroencke et al. (2020) and Lippold et al. (2020), have emphasized the fact that emotional stability is negatively related with COVID-19 safety measures compliance while Abdelrahman (2020), Aschwanden et al. (2021), Blagov (2021) and Garbe et al. (2020) have emphasized that emotional stability is positively related with COVID-19 safety measures compliance. Thus, since people with emotional stability are assumed to be reluctant to change, then the study is tailored on seeking further justification for negative relationship with COVID-19 safety measures. As a result, this study hypothesizes a linkage of emotional stability and COVID-19 safety measures compliance.

H2: People characterized by emotional stability personality are negatively associated with COVID-19 safety measures compliance.

Moreover, according to Abdelrahman (2020), Aschwanden et al. (2021), Blagov (2021), Brouard et al. (2020); Carvalho et al. (2020); Clark et al. (2020); Garbe et al. (2020) and Zettler et al., 2020) people characterized by conscientiousness traits are said to be affirmative to COVID-19 safety measures compliance. However, according to Shook et al. (2020) people with conscientiousness traits were found to be negatively related with COVID-19 safety measures compliance such as wearing face masks and being vaccinated. Such contradictory results have necessitated to search further evidence on positive side and thus, hypothesis three is formulated as follows:

H3: People characterized by conscientiousness personality are positively associated with COVID-19 safety measures compliance.

Furthermore, Shook et al. (2020) claimed that people with openness to experiences traits were found to be negatively related with COVID-19 safety measures compliance such as wearing face masks and being

vaccinated. Conversely, studies conducted by Aschwanden et al. (2021), Clark et al. (2020) and Zettler et al. (2020) have shown a positive association between openness to experiences personality and COVID-19 safety measures compliance. Such contradictory results have necessitated to search further evidence on positive side and thus, hypothesis four is formulated as follows:

H4: People characterized by openness to experiences personality are positively associated with COVID-19 safety measures compliance.

Lastly, according to Aschwanden et al. (2021); Blagov (2021); Clark et al. (2020) and Zettler et al. (2020) people characterized by agreeableness personality are said to respond positively on COVID-19 safety measures compliance. However, grounded on 80% contradictory results of personality dimension as discussed above it is wealth enough to find more positive evidence for agreeableness personality on COVID-19 safety measures compliance. Hence, hypothesis five is formulated as follows:

H5: People characterized by agreeableness personality are positively associated with COVID-19 safety measures compliance.

Method
Empirical Setting
This paper was carried over in Tanzania by focusing on students at university of Dar es Salaam. The chosen empirical setting is of essential due to several facts. First, in ensuring university students' compliance on COVI-19 safety measure. The issues of university students' personality traits is critical in limiting the spread of the pandemic and minimizing the effects resulting from it. For example, Aschwanden et al. (2021); Modersitzki et al. (2020) and Zettler et al. (2020) suggested that extraversion personality has a positive association with COVID-19 safety measures. This has meaning for governing matters of public policy in the area of ensuring effective eradication of negative impact resulting from COVID-19. Understanding students' personality dimensions and their response on COVID-19 measures will help management to come up with appropriate strategies that accommodate all five personality dimensions. Third a significant spread of the disease outside university compounds will be kept at minimal.

Data Collection
Prior to framing the questionnaire, discussions with some health experts were conducted to be aware of their views. It is argued that basing on mails

or emails in collecting data particularly in economic growing countries leads to a small number of participants. There are more than 2,000 university students at the University of Dar es Salaam coming from different parts of Tanzania. The students were selected based on their life experiences at the University of Dar es Salaam. The key informant approach as suggested by John and Reve (1982) to collect data by distributing questionnaires to university students who are familiar with the study problem was followed. In this research, the key informants were university students who were familiar with the routine university life. The questionnaires were distributed to 500 university students at the University of Dar es Salaam with a general reply rate of 92.2% (462 completed surveys) and effective response rate of 90% (450 perfectly filled questionnaire).

Table 1: Sample Characteristics (n=450)

Demographic Characteristics	Category	Frequency	Percent
Gender	Male	126	28.00
	Female	324	72.00
	<30	196	43.55
	30-40	150	33.33
Age	41-50	85	18.89
	>50	15	3.33

Measurement

The article model comprises six constructs with multiple measures. Measures were assumed from previous studies to adhere to content validity; but, the phrasing of each construct was reformed to fit this article. COVID-19 safety measures construct comprises six items that were assumed from World Health Organization (2020). The four questions for extraversion personality dimension were adapted from Gosling et al. (2003). Moreover, the four questions for the agreeableness personality dimension were adapted from Gosling et al. (2003). In addition, the four questions for conscientiousness; emotional Stability as well as openness to experiences as personality dimensions were adapted from Gosling et al. (2003). The measures, their originality, average, variation, and scores are as presented in Table 3. Moreover, two variables of age and gender (see table 1) were merely employed to describe characteristics of respondents.

Common Method Variance

Common method variance (CMV) assessment for this study was conducted as proposed by Jarvis et al. (2003) based on Harman's (1976) one-construct approach. The one construct that evolved from the unrotated construct solution based on principal component analysis method accounted for 33.745% (< 50%). The assumption is, if one factor scores above 50% of the variation, there exist sufficient chances of CMV occurrence (Podsakoff and Organ, 1986). Thus, based on Harman's (1976) single-factor method, it can be concluded that there is no possibility of CMV bias to impair the outcomes of this article.

Findings

With the help of SmartPLS 3.3.3 version, this article used structural equation modeling basing on variance as an analytical technique proposed by (Ringle et al., 2015). At the start, the preliminary assessment of items was performed on examining constructs. The Kaiser-Meyer-Olkin (KMO) score of selection suitability was .871 while that of Bartlett's test of sphericity was substantial (X^2 = 7121.73, df =325, p=.000), implying the suitability of the data for carrying out factor analysis. Table 3 expresses the construct scores (> .65) based on SmartPLS assessment for the model measures as used in this paper. The extent to which a construct measures what it was intended to measure (i.e., convergence of the construct) and the manner in which one construct is distinguished from other constructs (i.e., discrimination ability of the construct) were evaluated. The composite reliability and Cronbach's alpha scores for the employed latent variables were more than the agreeable score of at least .70 (Hair et al., 2017). The average variance extracted (AVE) score of .50 implies an agreeable level (Fornell and Larcker, 1981) for convergence acceptability. The AVE were between .582 and .705 as indicated in Table 2.

The presence of construct discrimination shows the degree of variation of one latent construct to other latent constructs as employed in a particular study. A match of the AVE square root scores and the associations between the latent variables as applied in this study, and as presented in Table 2 adheres to Fornell and Larcker's (1981) condition in warranting the existence of constructs discrimination. Supplementary assessment based on measures cross-scores as presented in Table4 offers additional evidence of both converging and discriminating ability, such that all latent variables as employed in this study were powerfully associated with their own measures than with any other latent variables. Moreover, based on Hair et al. (2017), Hair et al. (2018) and Henseler et al. (2015), it can be observed that the Heterotrait-monotrait ratio of correlations (HTMT) scores were under .85,

revealing that discrimination ability is considered amongst any of the two latent variables. Based on the above assessments, it can be concluded that all the latent variables (constructs) indicate support of suitable validity.

Table 2: Reliability, AVEs and Discriminant Coefficients (n=166)

Construct	Composite reliability	Cronbach's Alpha	AVE	1	2	3	4	5	6
Agreeableness	0.861	0.905	0.705	**0.84**					
Conscientiousness	0.824	0.883	0.653	0.44	**0.81**				
COVID-19 Safety Measures Compliance	0.910	0.930	0.690	0.60	0.47	**0.83**			
Emotional Stability	0.909	0.935	0.783	-0.01	-0.07	-0.07	**0.89**		
Extraversion	0.871	0.912	0.723	0.60	0.35	0.53	-0.07	**0.85**	
Openness to Experiences	0.762	0.847	0.582	0.44	0.40	0.42	0.02	0.46	**0.76**

Note: Bold numbers on the diagonal shows the square root of the AVEs; Numbers below the diagonal represent construct correlations.

Table 3: Construct, Indicators, Descriptive Statistics and Loadings (n = 450)

Construct	Question	Indicator	M	SD	Loadings#
COVID-19 Safety Measures Compliance Rammstedt et al. (2021)	I normally keep distance form other people (at least 1.5 meters)	CSMC1	5.06	1.67	0.817***
	I frequently avoid certain (busy) places	CSMC2	4.92	1.70	0.863***
	I normally use disinfectant/sanitizer.	CSMC3	4.91	1.68	0.832***
	I frequently wear face masks.	CSMC4	4.33	1.79	0.814***
	I wash my hands more often and longer.	CSMC5	4.69	1.75	0.829***
	I have taken COVID-19 vaccine.	CSMC6	4.63	1.76	0.828***
Extraversion Gosling et al. (2003)	I see myself as extraverted.	EXTRA1	3.68	1.98	0.760***
	I see myself as enthusiastic.	EXTRA2	3.01	1.87	0.901***

Construct	Question	Indicator	M	SD	Loadings#
	I see myself as reserved.	EXTRA3	3.14	1.99	0.880***
	I see myself as quiet.	EXTRA4	2.90	1.94	0.853***
Agreeableness Gosling et al. (2003)	I see myself as critical.	AGREE1	3.73	1.94	0.845***
	I see myself as quarrelsome.	AGREE2	3.64	1.82	0.870***
	I see myself as sympathetic.	AGREE3	3.80	1.85	0.835***
	I see myself as warm.	AGREE4	4.14	1.94	0.808***
Conscientiousness Gosling et al. (2003)	I see myself as dependable.	CONSC1	4.52	1.74	0.786***
	I see myself as self-disciplined.	CONSC2	4.76	1.46	0.810***
	I see myself as disorganized.	CONSC3	4.83	1.34	0.845***
	I see myself as careless.	CONSC4	5.15	1.21	0.790***
Emotional Stability Gosling et al. (2003)	I see myself as anxious.	ES1	4.29	1.89	0.908***
	I see myself as easily upset.	ES2	4.23	1.93	0.909***
	I see myself as calm.	ES3	3.92	1.81	0.852***
	I see myself as emotionally stable.	ES4	3.90	1.93	0.870***
Openness to Experiences Gosling et al. (2003)	I see myself as open to new experiences.	OP1	4.83	1.92	0.830***
	I see myself as complex.	OP2	4.75	1.99	0.791***
	I see myself as conventional.	OP3	4.48	2.06	0.708***
	I see myself as uncreative.	OP4	4.61	2.00	0.715***

Note: # Based on 5000 bootstrapping samples *** $p < 0.001$ (two-tailed), ** $p < 0.05$ (two-tailed).

Table 2: Demonstrating Discriminant Validity based on Cross-loadings

	Agreeableness	Conscientiousness	COVID-19 safety measures compliance	Emotional stability	Extraversion	Openness to experience
AGREE1	**0.845**	0.372	0.472	0.025	0.483	0.384
AGREE2	**0.870**	0.435	0.518	-0.007	0.542	0.325
AGREE3	**0.835**	0.374	0.485	0.004	0.469	0.348
AGREE4	**0.808**	0.302	0.529	-0.036	0.507	0.418
CONSC1	0.315	**0.786**	0.311	-0.001	0.265	0.372
CONSC2	0.403	**0.810**	0.449	-0.091	0.267	0.314
CONSC3	0.367	**0.845**	0.393	-0.092	0.296	0.317
CONSC4	0.324	**0.790**	0.320	-0.013	0.305	0.300

CSMC1	0.524	0.417	**0.817**	-0.059	0.458	0.366
CSMC2	0.521	0.353	**0.863**	-0.076	0.433	0.354
CSMC3	0.521	0.419	**0.832**	-0.065	0.394	0.399
CSMC4	0.494	0.332	**0.814**	-0.040	0.526	0.298
CSMC5	0.418	0.401	**0.829**	-0.063	0.355	0.273
CSMC6	0.490	0.397	**0.828**	-0.023	0.443	0.411
ES1	-0.007	-0.068	-0.066	**0.908**	-0.046	0.012
ES2	-0.012	-0.050	-0.065	**0.909**	-0.049	0.010
ES3	-0.001	-0.078	-0.040	**0.852**	-0.078	0.027
ES4	0.005	-0.051	-0.054	**0.870**	-0.076	0.028
EXTRA1	0.496	0.374	0.428	-0.061	**0.760**	0.374
EXTRA2	0.558	0.329	0.474	-0.070	**0.901**	0.384
EXTRA3	0.520	0.262	0.456	-0.056	**0.880**	0.415
EXTRA4	0.451	0.220	0.426	-0.041	**0.853**	0.390
OP1	0.397	0.387	0.380	-0.007	0.408	**0.830**
OP2	0.347	0.295	0.356	0.022	0.322	**0.791**
OP3	0.356	0.268	0.285	0.036	0.340	**0.708**
OP4	0.216	0.251	0.251	0.018	0.332	**0.715**

Note: Bold values at significant at approximately $p < 0.05$

Hypothesis one (H1) specified a negative relationship between extraversion personality dimension and COVID-19 safety measures compliance. The findings connote evidence for the negative impact of extraversion the personality dimension on COVID-19 safety measures compliance (β = -.20, t = 4.32, p < .01). Similarly, hypothesis two (H2) specified a negative relationship between emotional stability personality dimension and COVID-19 safety measures compliance. However, the findings failed to provide evidence for the negative impact of emotional stability personality dimension on COVID-19 safety measures compliance (β = -.03, t = .93, p < .10). Additionally, hypothesis three (H3) specified a positive relationship between the conscientiousness personality dimension and COVID-19 safety measures compliance. The findings connote evidence for the positive impact of conscientiousness personality dimension on COVID-19 safety measures compliance (β = .20, t = 4.13, p < .01). Conversely, hypothesis four (H4) specified a positive relationship between openness to experiences personality dimension and COVID-19 safety measures compliance. The findings connote evidence for the positive impact of openness to experiences personality dimension on COVID-19 safety measures compliance (β = .10, t = 2.09, p < .05). Lastly, hypothesis five (H5) specified a positive relationship between agreeableness personality

dimension and COVID-19 safety measures compliance. The findings connote evidence for the positive impact of agreeableness personality dimension on COVID-19 safety measures compliance ($\beta = .35$, $t = 7.30$, $p < .01$.

Table 3: Structural Model Results, Effect Sizes (f^2) and Collinearity based on VIF (n=450)

Criterion	R^2	Predictors	Path coefficients	t-values#	f^2	VIF
COVID-19 safety measures compliance	0.45	Agreeableness	0.35***	7.30	0.12	1.74
		Conscientiousness	0.20***	4.13	0.05	1.33
		Emotional stability	-0.03	0.93	0.00	1.02
		Extraversion	-0.20***	4.32	0.04	1.70
		Openness to experiences	0.10**	2.09	0.01	1.42

Note: # Based on 5000 bootstrapping samples ***p <0.01, **p < 0.05 (two-tailed)

Discussion

This paper aimed at investigating the predictability of personality dimensions on COVID-19 safety measures compliance, based on university students' views. The findings portray the ability of personality dimensions in predicting COVID-19 safety measures compliance. It can be noted that extraversion, conscientiousness, openness to experiences and agreeableness as personality dimensions have significant impact on COVID-19 safety measures compliance. The agreeableness personality dimension has the highest compliance on COVID-19 safety measures with $f^2=.12$ followed by conscientiousness personality dimension with $f^2=.05$, extraversion personality dimension with $f^2=.04$ and openness to experiences personality dimension with $f^2=.01$ respectively. However, emotional stability personality dimension with $f^2=.00$ has failed to reveal its predictability on COVID-19 safety measures compliance.

In line with Aschwanden et al. (2021); Blagov (2021); Clark et al. (2020) and Zettler et al. (2020) it can be noted that agreeableness personality dimension has been considered as one of the most key personality dimensions that abide with COVID-19 safety measures on aspects of keeping social distance, avoiding crowding, washing hands, being vaccinated and sanitizing, to mention but a few. Thus, when organizations such as universities are occupied with people characterized with agreeableness are in a good chance for their people to comply with

established standards such as following all protocols for COVID-19 safety measures that involve issues like keeping social distance, avoiding crowding, frequently washing hands, being vaccinated, sanitizing, wearing face masks and sometimes quarantining. For easiness, it can be noted that people characterized with agreeableness tend to abide with established standards such as covid-19 safety measures.

Additionally, in line with studies by Abdelrahman (2020), Aschwanden et al. (2021), Blagov (2021), Brouard et al. (2020), Carvalho et al. (2020), Clark et al. (2020), Garbe et al. (2020) and Zettler et al., (2020) this study has found that people characterized with conscientiousness traits are said to abide with COVID-19 safety measures on aspects of keeping social distance, avoiding crowding, washing hands, being vaccinated and sanitizing just to mention a few. Thus, when organizations such as universities are occupied with people characterized with conscientiousness are in a good chance for their people to comply with established standards such as following all protocols for COVID-19 safety measures that involve issues like keeping social distance, avoiding crowding, frequently washing hands, being vaccinated, sanitizing, wearing face masks, and sometimes quarantining. For simplicity, it can be noted that people with conscientiousness tend to abide with established standards such as covid-19 safety measures.

On top of that, and in contrast with previous studies by Aschwanden et al. (2021), Clark et al. (2020) and Zettler et al. (2020), this study has found that people characterized with openness to experiences are said to abide with COVID-19 safety measures on aspects of keeping social distance, avoiding crowding, washing hands, being vaccinated and sanitizing, to mention but a few. Therefore, when organizations such as universities are occupied with people characterized with openness to experiences are in a good chance for their people to comply with established standards such as following all protocols for COVID-19 safety measures that involve issues like keeping social distance, avoiding crowding, frequently washing hands, being vaccinated, sanitizing, wearing face masks and sometimes quarantining. For simplicity, it can be noted that people with openness to experiences tend to abide by established standards such as covid-19 safety measures. Generally, the findings of this study have increased support on one side of previous contradictory outcomes regarding the predictability of openness to experiences traits on COVID-19 safety measures compliance. In short, the study has emphasized the positive predictability of openness to experiences on COVID-19 safety measures compliance.

Moreover, in line with studies by Blagov (2021), Brouard et al. (2020), Carvalho et al. (2020), Chan et al. (2021) and Modersitzki et al. (2020), it can be noted that the extraversion personality dimension has been considered as one of the key personality dimensions that do not abide with COVID-19 safety measures on aspects of keeping social distance, avoiding crowding, washing hands, being vaccinated and sanitizing. Hence, organizations such as universities that are occupied with people characterized by extraversion are not in a good position to comply with established standards. Such standards may include following all protocols for COVID-19 safety measures compliance. COVID-19 safety measures involve issues like keeping social distance, avoiding crowding, frequently washing hands, being vaccinated, sanitizing, wearing face masks and sometimes quarantining. In short it can be argued that extraverted people are reluctant to comply with established standards such as COVID-19 safety measures.

Despite the fact that university environmental situation (such as classes overcrowding as well as cafeterias overcrowding) for students can subject students to failure to comply with COVID-19 safety measures still compliance differences can be observed among students. Additionally, students' compliance with COVID-19 safety measures greatly varies with CORANA virus versions. In situations where one notices university students not complying with COVID-19 safety measures, it can be considered that most of such students are probably falling under the extraversion personality dimension as this type of personality has been found not to comply with COVID-19 safety measures as far as this study is concerned. Normally, organizations such as universities tend to comprise people who are under all five personality dimensions. The dimension that is dominant tends to be observed easily and one that is recessive tends to be not noticed easily. Therefore, when organizations such as universities are noticed that most of its people are not complying with COVID-19 safety measures it can be considered that such organizations are greatly dominated by extraverted people as far as the findings of this study are concerned. Conversely, when organizations such as universities are noticed that most of its people are complying with COVID-19 safety measures, it can be considered that such organizations are greatly dominated by one or more of people characterized by agreeableness, conscientiousness and openness to experiences as far as the findings of this study are concerned.

Theoretical Contributions and Implications
The study adds to theories, management and dogma (policy) implications to the existing studies. Firstly, the guiding model indicated some essential

issues in the setting of university students' personality characteristics in abiding with COVID-19 safety measures to add literature on the connection between personality dimensions and COVID-19 safety measures. With the exception of agreeableness personality dimension, previous studies on the association between big five personality dimensions and COVID-19 safety measures compliance have found contradictory results.

For instance, based on previous studies by Blagov (2021); Brouard et al. (2020); Carvalho et al. (2020); Chan et al. (2021) and Modersitzki et al. (2020) it was noted that extraversion personality dimension is negatively related with COVID-19 safety measures compliance while conversely, studies conducted by Aschwanden et al. (2021), Modersitzki et al. (2020) and Zettler et al. (2020) found that extraversion personality has a positive association with COVID-19 safety measures. For purpose of finding further justification to remove this contradictory, this study found that extraversion personality dimension is negative related with COVID-19 safety measures compliance.

Moreover, according to previous studies such as by Abdelrahman (2020 and Zettler et al. 2020), it was claimed that conscientiousness personality dimension is positively related with COVID-19 safety measures compliance. However, according to a study by Shook et al. (2020) it was argued that the conscientiousness personality dimension is negatively related with COVID-19 safety measures compliance such as wearing face masks and being vaccinated. Furthermore, according to the study by Shook et al. (2020) it was claimed that openness to experiences personality dimension was found to be negatively related with COVID-19 safety measures compliance such as wearing face masks and being vaccinated. Conversely, studies conducted by Aschwanden et al. (2021), Clark et al. (2020) and Zettler et al. (2020) showed a positive association between openness to experiences personality and COVID-19 safety measures compliance. Such contradictory results necessitated this study to search for further justification and its results aligned with the positive side of previous studies.

Public Policy and Managerial Implications
The principal policy suggestion is, if COVID-19 spreads and its effects is to be minimized, the key is to comply with COVID-19 safety measures. In order to enhance COVID-19 safety measures there should be a broad understanding of people characteristics such as agreeableness, conscientiousness, extraversion and openness to experiences as are found to be statistically significant with COVID-19 safety measures. The current

debate of whether people should take COVID-19 vaccine or not has connection with personality dimensions. Based on the findings of this study, it can be noted that people with agreeableness, conscientiousness and openness to experiences personality dimensions are the ones who are supporting COVID-19 safety vaccination while people with extraversion dimension are ones opposing COVID-19 vaccination. Therefore, the effectiveness of measures to combat COVID-19 greatly depends on peoples' personality dimensions. Thus, policy makers and government officials dealing with programmes aimed at educating people to follow all COVID-19 protocols should consider issues of personality dimensions as these significantly impact on the response.

Conclusion
The article focused on examining the predictability of personality characteristics (dimensions) on COVID-19 safety measures compliance based on university students' personality characteristics. From this study, it can be noted that personality characteristics act as key predictors of COVID-19 safety measures compliance. The findings articulate that personality characteristics of agreeableness, conscientiousness and openness to experiences have a positive prediction on COVID-19 safety measures compliance. Moreover, the study found that extraversion personality has a negative prediction on COVID-19 safety measures compliance. However, the study failed to establish the predictability of emotional stability as one of students' personality characteristics on COVID-19 safety measures compliance. The study offers a unique perspective on the predictability of personality characteristics on COVID-19 safety measures, thus complementing previous studies taking university students' perspective. The positive predictability of agreeableness, conscientiousness and openness to experiences as well as the negative predictability of extraversion on COVID-19 safety measures compliance tend to increase the soundness of personality characteristics in complying with established standards. Thus, understanding personality characteristics of people such as university students is essential in determining the extent of COVID-19 safety measures compliance. From the findings of this study it can be argued that it is imperative to understand characteristics of people you have in the organization to help understand the extent of compliance if some protocols such as of COVID-19 safety measures are established.

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