Does Covid-19 Psychological Distress Impact On E-Mobile Banking Adoption In Emerging Countries In The Post Covid-19 Era?

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ABSTRACT

The paper aims at determining the impact of Covid-19 related psychological distress on the E-mobile banking adoption in the emerging countries' post Covid-19 era with the extended TAM model and the case of Vietnam. The primary data with a total of 483 Vietnamese people who are above 16 years old participated in this study, and the stuctural equation modeling was employed to verify the conceptual framework. The results showed that TAM

extended constructs, namely Perceived Usefulness, Perceived Ease of Use and Trust influence the Attitude towards E-mobile banking. The intention to use was significantly predicted by the Covid-19 related psychological distress and the Attitude towards E-mobile banking. Based on these findings, recommendations were proposed to enhance the e-mobile banking adoption by enhancing the usefulness and trust of customers on using e-mobile banking services.

Keywords: Covid-19 related psychological distress, E-mobile banking, Technology acceptance model, Adoption behaviors

1. INTRODUCTION

COVID-19 has expanded worldwide since December of 2019. Vietnam, which borders China, where the COVID-19 outbreak began, has faced several challenges. Due to budgetary and technology constraints, the administration has implemented mobility constraints and social-distance strategies to minimize COVID-19 impacts. When socio-economic activity are abruptly suspended, making Vietnam suffers in various industries, E-banking has significantly growth. E-banking is a bigger concept involving Internet-based financial services (Pham, 2013). E - banking is viewed as a digital linkage connecting banks and users that facilitates, manages, and controls a number of monetary transactions (Jun and Cai, 2001). During the COVID-19 epidemic, the trend of using e-banking apps is being changed by digitization. Nguyen (2021) also said that e-mobile banking enables banks to operate regularly throughout the epidemic since clients may utilize it remotely instead of visiting ATMs or offices. In addition to its severe effects on the economy, the COVID-19 pandemic has detrimental effects on

the psychological condition of the population. According to Tran et al. (2020), the social-distance strategies have led to various adjustments in behaviors. Individually, quarantine induces unpleasant emotional effects such as boredom, despair, and afraid avoidance to workplaces and public areas. In contrast, the COVID-19 outbreak has produced a pattern amongst consumers to use e-banking apps for banking services. The shifted behaviour can be a result of perceiving e-banking app's benefits in avoiding Covid-19 exposure from physical interactions (C.C. and Prathap, 2020). In summary, the social-distancing plans of the government have changed the people's behaviors. It is estimated that the forced adoption of e-banking will have a long-lasting effect on people's daily routines, especially using e-mobile banking (Carletti et al., 2020). In a new context when the customers' behaviour is shifting towards using e-mobile banking. Understanding users' usage behaviour is necessary to make modifications. Besides that, accelerating e-mobile banking provides tremendous benefits for the banks, hence it can benefit the bank's recovery and long-term development. Furthermore, using E-mobile banking helps people to eliminate the risk of Covid-19 exposure. With all the reasons above, the authors are inspired to investigate the drivers of e-mobile banking adoption in developing countries with the case of Vietnam during the post Covid-19 era.

2. LITERATURE REVIEW

2.1. E-mobile banking adoption

According to Pareek and Chattopadhyay (1966), adoption is both a process and a stage in a larger process in which the user is aware of a new thing and continues to use it. To understand the user's adoption, research has approached it from many

levels. One of the most common approaches is to examining the antecedent of IT adoption and use by individuals (Davis, 1989). This school of research uses behavioral intentions to predict how users adopt new technologies.

2.2. Perceived Usefulness (PU)

Davis (1989) defines PU as the extent to which a person feels that using certain technologies would improve its performance and efficiency. In prior researches, it has been shown that PU has both direct and indirect favourable effect on actual technology uptake through attitude regarding usage (Davis, 1993; Taylor and Todd, 1995). Wu and Chen (2005) saw PU as an important factor in assisting bank staff and customers to adopt new technology, since it offers them a higher level of flexibility while doing banking-related activities. Thus, PU could contribute to the formation of attitudes about e-mobile banking. Hence, we hypothesise that:

=> H1: PU has a positive impact on the attitude towards e-mobile banking

2.3. Perceived Ease of Use (PEOU)

Davis (1989) explains PEOU as the extent to which a person feels that adopting a certain technique would be straightforward to learn and use. The exclusion of PEOU may annoy consumers, hence restricting the acceptance of new technologies (Taylor and Todd, 1995). Chitungo and Munogo (2013) likewise verified the favourable impact of PEOU on e-mobile banking attitudes, contributing to the desire to adopt e-mobile banking. Therefore, PEOU could play a crucial role in the formation of attitudes regarding e-mobile banking. Thus, we hypothesise:

=> H2: PEoU has a positive impact on the attitude towards e-mobile banking

2.4. Perceived Risk (PR)

In context of technologies, PR can be defined as the uncertainties around the outcomes of deploying new equipments (Gerrard and Barton Cunningham, 2003). By addressing e-mobile banking particularly, much danger is associated, including economic risk, social risk, services provision risk, etc... (Forsythe and Shi, 2003). The substantial threat related to e-mobile banking may be an impediment towards its uptake (Riquelme and Rios, 2010), since it causes individuals to have unfavourable opinions against using and embracing the mobile banking service. Thus, PR has a detrimental effect on attitudes towards e-mobile banking. Consequently, we hypothesise:

=> H3: PR has a negative impact on the attitude towards e-mobile banking

2.5. Trust (TR)

Trust is a positive judgment of an individual's, an object's, or a system's perceived reliability, trustworthiness, and assurance (Rempel, Holmes, & Zanna, 1985). The concept of trust is among the central determinants to the adoption of e-commerce technology (Gefen, 2000). In relation to e-banking and e-commerce, trust has four elements, namely security, integrity, authentication and authorization (Yousafzai, 2010). Szymanski & Hise (2000) highlighted the connection between accessibility, trust with customer pleasure. People are more inclined to trust an online business if they are happy with the security guarantee provided by its services. Therefore, people's opinions will be favourable if they have faith in e-mobile banking. Consequently, we hypothesise:

=> H4: Trust has a positive impact on the attitude towards e-mobile banking

2.6. Attitude and Intention toward e-mobile banking (ATT)

The research by Ajzen and Fishbein (1980) proved that people's attitude concerning an item can be anticipated with a significant level of confidence, regardless of whether the individual has a positive or negative opinion on the conduct of interest. Since this is among the biggest influential determinants of intention to use, the majority of prior researches on online banking have indicated a strong and positive correlation (Tan & Teo, 2000; Shih & Fang, 2004). Accordingly, the good attitude of clients toward e-mobile banking might lead to an increased intention to use e-mobile banking. Finally, we hypothesise that:

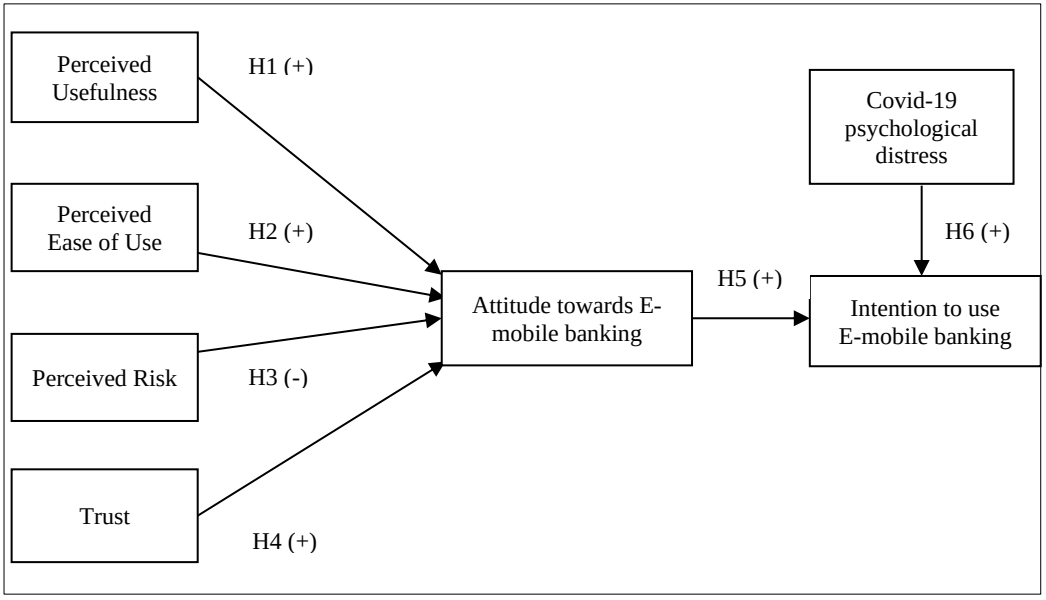
=> H5: Attitude has a positive impact on intention to use e-mobile banking

2.7. The Covid-19-related psychological distress (CORPD)

Psychology distress is the generic term for inappropriate mental function in response to stressful situations (Sledge et al., 2000). People feel emotional and cognitive discomfort if they are unable to resolve dangers (Cong, 2021). Considering Covid-19, several studies have shown significant changes in customer behavior subsequent to Covid-19 (Gordon-Wilson, 2021). Adamus & Grezo (2021) demonstrated the favorable influence of CORPD in boosting the readiness to modify consuming habits and the employment of primarily problem-focused coping mechanisms. Researchers have argued that the increased use of e-mobile banking is to avoid exposure to Covid-19 when transferring cash (Auer, Cornelli, and Frost, 2020). Consequently, we argue that the significant CORPD may increase the intention to use e-mobile banking. Therefore, we hypothesize:

=> H6: CORPD has a positive effect on the intention to use e-mobile banking.

Figure 1: Conceptual framework



Source: Compiled by authors

3. METHODOLOGY

3.1. Sampling and data collection

Due to the limited amount of time allotted for the research, we used the method of convenient sampling. This online multiple survey was conducted between November and December 2022. To ensure the confidentiality of participants' private data, an anonymous online survey was created using Google Form. Next, respondents were notified that their contribution was voluntarily and the collection would be used purely for academic purposes. Participants in this study must be at least 16 years old in order to register and use e-mobile bank.

Of the 483 observations, 59.5% were female (287 people) and 40,5% (196 people) were male. The 17-20 years old accounted for the majority with 58.2% and 21-30 years old group was 23.2% of the observations, while the rest are older than 30.

Most of the respondents have a bachelor degree with 66.1%. Also, in terms of usage, 93,8% responders claimed using e-mobile banking, while just 30 people did not.

Table 1: Demographic characteristic:

Social-demographic information		**Frequency**	**Percentage**
Gender	Male	196	40,5%
	Female	287	59,5%
Age	From 17 to 20 years old	281	58,2%
	From 21 to 30 years old	113	23,2%
	Over 30 years old	89	18,4%
Level of education	Highschool	68	14%
	Undergraduate	319	66,1%
	Master and PhD	96	19,9%
E-mobile banking usage	Yes	453	93,8%
	No	30	6,2%

Notes: N=483

3.2. Research measurement

The construction of a two-part survey. The initial section questions include demographic characteristics, such as gender, age, educational level, and e-banking usage. The next section consists of five-point Likert scales ranged between (1) "strongly disagree" to (5) "strongly agree" to measure its variables mentioned above in Literature review. The measures created by Cheng (2006) and Curren & Meuter (2005) to measure PU (three items) and PEOU (three items) are employed. In addition, the study of Fortes and Rita (2016) was applied to the measuring of INT (three items), PR (five items) and TR (4 items). Additionally, Wu and Chen (2005), Cheng (2006), and Lai and Li (2005) provide groundwork for ATT

measuring (4 items). The scale for CORPD was created by Feng et.al (2020) with 14 items. With the modification of Duong (2022), four questions have been removed from Covid-19 in Vietnam to reflect the current status of events, thus this study would apply the modified measurements. In the Annexe, a summary of the measures and phrasing will be provided.

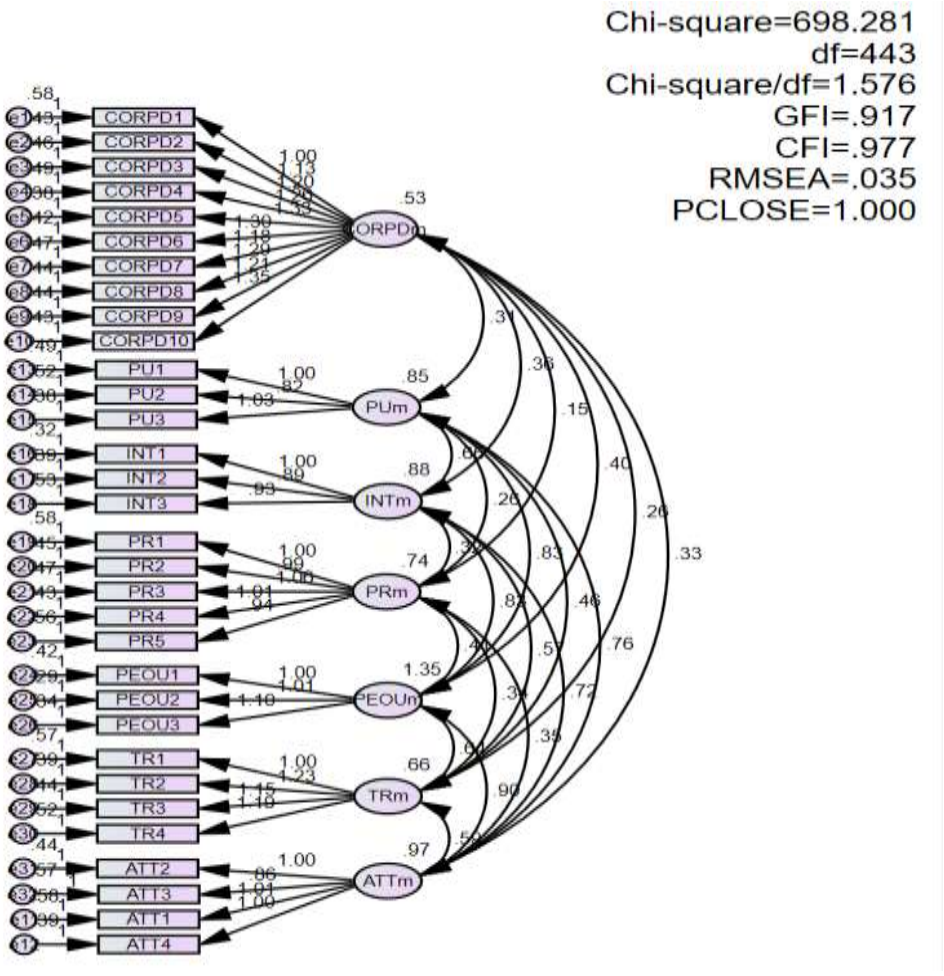
4. RESULTS AND DISCUSSION

4.1. Evaluating factors indicating e-mobile banking adoption

SEM analysis is used to examine the effectiveness of the measured variables. Figure 2 depicted the final outcome of the CFA measuring model with its corresponding indices, which overall gave suitable results (CMIN/DF < 3, GFI,CFI > 0.9, RMSEA < 0.08)

Proceeding the normality checks, the study results revealed that the Skewness and Kurtosis values of all items were within the recommended boundaries as recommended by Kline (2011). For the reliability test of the data set, table X has shown final results for all variables. In fact all seven variables have a Cronbach's alpha value of higher than 0,8. As for CR indicators, the same results are shown, all variables demonstrated high suitability (CR>0.8). The convergent validity is tested through AVE, also seven variables showed great results of over 0,5. In conclusion, the measurements are tested with the CFA-SEM requirements, thus results indicate that the measurements are accepted to indicate the factor influencing e-mobile banking adoption.

Figure 2: Analysis results of factors influencing e-mobile banking adoption



Source: Authors' calculation

Table 2: Measurement model

Variables	Code	Mean	Std. Deviation	Skewness	Kurtosis
Perceived Usefulness (α = 0.830, CR = 0.83, AVE = 0.62)	PU	3,61	1,11	-0,41	-0,63
	PU1	3,60	1,158	-0,473	-0,674
	PU2	3,59	1,045	-0,257	-0,613
	PU3	3,63	1,132	-0,493	-0,602

Perceived Ease of Use (α = 0.925 , CR = 0.926, AVE = 0.806)	PEOU	3,34	1,34	-0,30	-1,13
	PEOU1	3,31	1,332	-0,284	-1,124
	PEOU2	3,34	1,289	-0,277	-1,049
	PEOU3	3,36	1,408	-0,335	-1,221
Perceived Risk (α = 0.882, CR = 0.882, AVE = 0.599)	PR	3,16	1,11	-0,07	-0,64
	PR1	3,12	1,149	0,007	-0,763
	PR2	3,14	1,082	-0,085	-0,580
	PR3	3,19	1,144	-0,086	-0,699
	PR4	3,18	1,090	-0,033	-0,597
	PR5	3,16	1,106	-0,172	-0,562
Trust (α = 0.876, CR = 0.876, AVE = 0.64)	TR	3,46	1,16	-0,41	-0,66
	TR1	3,36	1,107	-0,356	-0,612
	TR2	3,52	1,178	-0,417	-0,698
	TR3	3,52	1,146	-0,425	-0,655
	TR4	3,45	1,206	-0,439	-0,679
Attitude (α = 0.878, CR = 0.879, AVE = 0.646)	ATT	3,51	1,19	-0,43	-0,73
	ATT1	3,65	1,256	-0,549	-0,796
	ATT2	3,43	1,190	-0,409	-0,799
	ATT3	3,42	1,132	-0,384	-0,596
	ATT4	3,53	1,170	-0,387	-0,734
Intention to use (α = 0.850, CR = 0.85, AVE = 0.654)	INT	3,74	1,09	-0,59	-0,39
	INT1	3,78	1,096	-0,643	-0,350
	INT2	3,77	1,048	-0,572	-0,346
	INT3	3,68	1,137	-0,562	-0,484
Covid-19 related Psychological distress (α = 0.945, CR = 0.945, AVE = 0.632)	CORPD	3,20	1,12	-0,18	-0,62
	CORPD1	3,03	1,051	0,247	-0,604
	CORPD2	3,27	1,052	-0,232	-0,468
	CORPD6	3,28	1,103	-0,245	-0,636
	CORPD7	3,17	1,155	-0,120	-0,789
	CORPD8	3,25	1,147	-0,270	-0,652
	CORPD9	3,27	1,146	-0,383	-0,529
	CORPD10	3,10	1,102	-0,067	-0,562
	CORPD12	3,23	1,147	-0,244	-0,745

Table 3: Structur model

Hypotheses				Path-coefficient β value		VIF	P	Result
H1	PU	--->	ATT	0,555		1,912	***	Supported
H2	PEOU	--->	ATT	0,234		2,241	***	Supported
H3	PR	--->	ATT	0,042		1,249	0,83	Not Supported
H4	TR	--->	ATT	0,434		1,779	***	Supported
H5	ATT	--->	INT	0,802		1,215	***	Supported
H6	CORPD	--->	INT	0,195		1,215	***	Supported
Notes: N = 483, ***p < 0.001								
			CORPD13	3,13	1,100		-0,232	-0,506
			CORPD14	3,28	1,178		-0,269	-0,723

Path analysis is then used to determine whether or not the structural model is a good match for the data in the measurement model (Hair, 2014).The variance inflation factor of independent variables indicate model estimates lacked multicollinearity bias (VIF<3). Table 3 showed the final results of the hypotheses tested using SEM, five out of six hypotheses were supported with significant p-value. Whereas H3 shown unexpected result of insignificant relationship thus unsupported the hypothesis. The path-coefficient indicators indicate various impacts of these variables ranging from 0.2 to 0.8.

4.2. Perceived Usefulness and Perceived Ease of Use

This study confirmed previous findings that PU and PEOU can improve e-mobile banking attitudes (Yousfzai et al., 2010). Businesses accelerated ecommerce and mobile payments during Covid-19 because social distancing limited physical trading and buying. Amin et al. (2022) also found that the user-friendly interface and simple features improved people's attitudes. The COVID-19 pandemic formed people to use e-mobile banking for daily routines.

4.3. Trust and Perceived Risk

According to previous research, trust and attitude toward e-mobile banking are positively correlated (Yousfzai et al., 2010; Zhou, 2011). Customers value trust because banking services involve money (Curran and Meuter, 2005). Therefore, trust and perceived risk are inseparable when investigating e-mobile adoption (Yousafzai et.al., 2010). Interestingly, PR did not affect attitudes toward e-mobile banking in this study. E-mobile banking is used by 79% of 18-35-year-olds and 96% of respondents. Featherman & Pavlou (2003) found that younger, tech-savvy users are less affected by PR on e-mobile banking adoption. If e-mobile banking is easy to use, PR's effect on attitudes will be reduced (Keshawarni & Bisht, 2012).

4.4. Attitude Toward E-mobile Banking

In widely used theories and models like TPB, TAM, and UTAUT, attitude and intention are strongly linked. As expected, Attitude toward e-mobile banking and Intention to Use were positively and strongly correlated with $\beta = 0{,}802$ and $p < 0{,}001$. Positive attitudes toward e-mobile banking increase the likelihood of its use. These findings also show that PU, PEOU, and TR all indirectly affect mobile banking intentions.

4.5. Covid-19 Related Psychological Distress

The main aim of this study is to examine the impact of CORPD on the intention to use e-mobile banking. Literature argued that CORPD will increase the intention to use e-mobile banking as a preventative methods for Covid-19 exposure. Since banking through mobile device might be considered as a way to prevent contamination. Furthermore, the research conducted by Duong et al. (2021) does not provide sufficient evidence to demonstrate that CORPD has a direct influence on intention. Despite the difference in industry or context, this result can confirm the positive relationship from CORPD and intention to ultilise e-mobile banking.

5. CONCLUSION AND RECOMMENDATION

5.1. Theoretical contribution

This report contributes both conceptually and empirically to the growing literature on mobile e-banking and describes the significant impact of factors on the desire to use mobile e-banking. during the COVID-19 pandemic. Overall, the study's findings provide important experimental validation for all variables tested under the model. However, the PR results were not consistent with previous studies. This study complements the previous study by Feng et al (2020) by demonstrating the impact of psychological stress caused by Covid-19 on intention to use e-banking services on mobile devices. be mobile.

5.2. Implication for the banking industry

Although the global impact of Covid-19 is negative and detrimental to all businesses, certain individuals may view it as an opportunity. For instance, the banking industry is experiencing a growing demand for online and mobile banking.

There is a sizable untapped market for e-mobile banking services; however, information gaps about the industry prevent the achievement of greater acceptance rates. It is necessary to take solid measures to increase the number of individuals using e-mobile banking. These steps consist of organising awareness initiatives, engaging the general public, and launching awareness-raising activities. When the psychological impact of COVID-19 is considered, there will be a greater perception of the functionality for mobile banking, leading to its increased adoption.

It has been advised that heightened security measures must be implemented to protect sensitive information. To protect sensitive data, e-mobile banking service platforms must incorporate high-security measures into both their designs and operating procedures.

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ANNEXES

Annexes 1: Items in the model and coding

Variable	Construct	Items	Reference
Attitude	ATT1	Using mobile banking will save me time	Wu and Chen (2005), Cheng et al. (2006) and Lai and Li (2005)
	ATT2	Using mobile banking will be secure	
	ATT3	Using mobile banking will save me money	
	ATT4	Using mobile banking will be good for me	
Intention to Use	INT1	You will use digital banking services if needed.	Fortes & Rita (2016)
	INT2	You think that the use of digital banking should be encouraged by all people	
	INT3	You will recommend the use of digital banking to your friends.	
Perceived Usefulness	PU1	Mobile banking improves my work and life efficiency	Cheng et al. (2006) and Curran and Meuter (2005)
	PU2	Mobile banking allows me to easily acquire the information I need	
	PU3	Overall, mobile banking is useful	
Perceived Ease of Use	PEOU1	Learning to use mobile banking is easy	Cheng et al. (2006) and Curran and Meuter (2005)
	PEOU2	It is easy to use mobile banking	
	PEOU3	Overall, using mobile banking is easy	
Perceived Risk	PR1	Providing bank account information (credit card, debit card ...) is dangerous	Fortes & Rita (2016)
	PR2	You find that using a bank is a risky activity.	
	PR3	Providing your personal information on the internet is risky.	

	PR4	Signing up for online services is risky.	
	PR5	You find using digital banking more risky than going to traditional banks.	
Trust in mobile banking	TR1	Website, apps of banks are trusted.	Fortes & Rita (2016)
	TR2	The bank complies with what it has announced about digital banking.	
	TR3	Digital banks do exactly what they commit to their services.	
	TR4	Digital bank always tries to bring the best benefits to customers.	
Covid-19-related psychological distress	CORPD1	When talking to a stranger, I suspect s/he might be infected with Covid-19.	Feng et a;. (2020); Duong et al. (2022)
	CORPD2	When I see someone sneeze, I suspect s/he might be infected with Covid-19	
	CORPD6	I think frequent hospital visits would make it easier to be infected with Covid-19	
	CORPD7	I fear to see the doctors and nurses who had worked in Covid isolation wards	
	CORPD8	I think frequent use of air, train, bus and other public transport would make it easier to be infected with Covid-19	
	CORPD9	When I notice someone running a fever, I suspect s/he might be infected with Covid-19	
	CORPD10	When I see someone vomiting, I suspect s/he might be infected with Covid-19	
	CORPD12	When I see someone coughing, I suspect s/he might be infected with Covid-19	
	CORPD13	When I see someone without a mask, I suspect s/he might be infected with Covid-19	

	CORPD14	I suspect there were novel coronavirus in the air when there were people around	