

*To protect myself, others, or both? An
investigation of preferences and the uptake of
COVID-19 preventative measures in Australia*

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To protect myself, others, or both? An investigation of preferences and the uptake of COVID-19 preventative measures in Australia

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Abstract

Wearing face masks is an important COVID-19 precautionary measure and many governments have mandated wearing face masks in public areas. However, the mandatory policy is hardly sustainable in the long run and has been criticised for reducing autonomy. It is essential to understand the underlying preference for wearing face masks as that can help encourage the use of face masks without government intervention. This study investigates how the uptake of wearing face masks as a COVID-19 precautionary behaviour is determined by self-interest and other-regarding preferences. The results reveal that if people perceive wearing face masks as an act of protecting both themselves and others, the probability of consistent face mask use increases by 46%. However, if people perceive wearing face masks as only protecting themselves, they do not want to wear face masks unless the surrounding people wear them too. These findings provide insights into future government non-mandatory use policies. They suggest that to encourage face mask use, policymakers should consider publicising not only the protection face masks provide for wearers, but also their ability to protect other people.

Keywords: COVID-19, face mask, precautionary behaviour, protection perception

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1. Introduction

COVID-19, a new virus with multiple strains, has hit the world hard. According to a World Health Organization (WHO) report, as of 10 January 2022, there are more than 305 million confirmed COVID-19 cases, including more than 5 million deaths worldwide. This unprecedented pandemic has dramatically affected human lives and imposed both health (physical and mental) and economic costs. COVID-19 requires behavioural changes to prevent its spread, that is beneficial to both individuals and communities. In particular, the WHO advertises that it is essential for everyone to take simple multifaceted precautions, such as complying with physical distancing guidelines, wearing face masks, avoiding crowds, cleaning hands thoroughly, and coughing into a bent elbow or tissue.

Face masks remain an important COVID-19 precautionary measure, even in countries with high vaccination uptake like Australia. According to Google Trends, the intensity of searching 'face masks' fluctuated with the number of infected COVID-19 cases. Governments (e.g. the New South Wales and Victoria state governments) in Australia had to tighten face mask rules by making them mandatory in public areas. However, the mandatory policy is not sustainable in the long run, and it has been criticised for challenging people's autonomy and decision-making ability. Thus, the government had to relax the rule and roll back the mandatory use of masks when the spread of the virus was under control. Consequently, the number of infected cases surged again.¹ This study examines the underlying preference for wearing face masks, which could shed light on public policy in the future to encourage mask uptake, especially when it is difficult to implement the mandatory use policy. The findings on face mask use could also be applied to other precautionary measures for similar public health crises.

An important feature of wearing face masks is that they protect both the wearer and those surrounding the wearer. Therefore, both self-interest and other-regarding motivations are likely to affect the uptake of face masks. While it is widely acknowledged that people are more altruistic than economic theory has traditionally

¹ See the detailed information on changes in public rules in NSW here: https://en.wikipedia.org/wiki/COVID-19_pandemic_in_New_South_Wales.

assumed (see Camerer, 2003), and that social preferences are important factors in many domains of decision-making, less is known about whether social preferences explain health behaviours. On the one hand, the COVID-19 pandemic has introduced dramatic health and economic costs that might result in more emphasis on self-interest. On the other hand, collective efforts are required to prevent the spread of such a highly-infectious virus. Therefore, undertaking COVID-19 prevention measures may be correlated with a preference for protecting others. For example, masks can be worn to protect the wearer from being infected or to protect others from being infected by the wearer. A good understanding of social preferences can shed light on the best design for health policies to promote the uptake of preventative measures that fight the spread of viruses.

Extant research on persuasion reveals that a message must be relevant to the audience's perspective to be convincing (Cialdini, 2007). It is unclear ex-ante whether people are more likely to engage in prevention behaviours due to self-interest or other-regarding preferences. Neo-classic theory predicts that individuals will adopt these prevention measures simply to protect themselves. However, individuals might not take up sufficient prevention measures owing to being overconfident and overestimating their immunity (Dunning, Heath, & Suls, 2004). Some studies have shown that individuals display confirmation bias (Nickerson, 1998; Jones & Sugden, 2001) and tend to respond defensively to information that poses a threat to their personal health or safety (Liberman & Chaiken, 1992). Grant and Hofmann (2011) conducted field experiments to test the effects of messages emphasising personal safety compared to those emphasising patient safety on health care professionals' hand sanitisation behaviour. They found that healthcare professionals wash their hands more frequently when they are reminded of its importance for patient safety, but not when they are reminded of the implications for themselves.

In this study, we investigate how the uptake of a precautionary behaviour (i.e., wearing face masks) is related to self-interest and other-regarding preferences. It contributes to the extensive literature on the determinants of health behaviour; for example, individual-level risk aversion, patience, and personality traits are all closely linked to health behaviours (Galizzi and Wiesen, 2018). With regards to the COVID-19 pandemic, there are several studies investigating the relationship between health behaviour and risk/time preferences, trust, and

personality traits (Müller and Rau, 2021; Thunström et al., 2020; Briscece et al., 2020; Zettler et al., 2020). A few other studies have examined the uptake of precautionary measures with regards to externalities. In other words, uptake can protect both individuals and those surrounding them. Campos-Mercade et al. (2021) found that prosocial Swedish individuals are more likely to follow physical distancing guidelines, stay home when sick, and buy face masks. Such a relationship cannot be explained by motives such as risk preferences, time preferences, or concerns about being infected. Nikolov et al. (2020) also confirmed the positive correlation between prosociality and the uptake of precautionary behaviour by using weekly surveys from seven US states.

This study also contributes to the understanding of social preferences regarding health behaviour by examining the sensitivity of self-interest and altruism to the effect of a preventative measure on protecting ourselves and others. Andreoni and Miller (2002) have demonstrated that prosocial preferences such as altruism are price sensitive, a finding unlikely to surprise economists but one that contradicts the concept of a 'primitive' (Berg, Dickhaut & McCabe, 1995; Ortmann, Fitzgerald & Boeing, 2000). The results of List (2007) further confirm the price sensitivity of altruism, in that the participants jettison moral scruples when they become too costly. In this study, we further investigate the sensitivity of the uptake of precautionary measures to the intensity of these measures.

Broadly speaking, this study also relates to literature on social norms. Particularly, norm-sensitive (or compliant) individuals are more likely to comply with specific emergent social norms, such as social distancing (Eckel et al., 2021) or legal changes (Casoria et al., 2021). By varying the uptake rate of wearing face masks, our survey also reflects people's responses to different social norms.

Using a representative Australian sample from PureProfile, we investigate current prevention attitudes and behaviours with regards to wearing face masks, and how the perception of protective strength affects the 'sometimes taker'—who sometimes but not always uses face masks—compared to the 'never taker' and 'always taker'. We found that the perception that face masks protect oneself or others increases the intent of uptake in different ways for different kinds of people. Specifically, if people perceive that wearing face masks can protect themselves and others, their probability of always wearing face masks increases by 46%. However,

if people perceive that face masks only protect the wearer, there will be no significant changes in their probability of always wearing face masks. Instead, the probability of changes in intent from not wearing face masks to sometimes wearing face masks increases by 74% if the people around these individuals are wearing face masks. Our results convey the importance of the protection face masks provide for people surrounding wearers. The promotion of face masks is more effective when the benefits to both the wearer and public are emphasised.

2. Data

We conducted an online survey in November 2020 to collect data from people in Australia on their personal choice of wearing face masks. The survey was administered by an online research company (Pureprofile; <http://www.pureprofile.com/au>), which recruited participants from their Australian national online survey panel. After completing the online survey, participants were reimbursed according to the length of the questionnaire. Our sample comprised 156 Australian individuals aged 16 or older. The participants were asked about their choice to wear a face mask in different scenarios, their perception of the protection provided by wearing face masks, and their socio-demographic characteristics.

To assess the personal choice of wearing face masks as influenced by others' behaviour, we adopted the method of multiple price lists. Participants were asked whether they would choose to wear a face mask in a grocery store if a certain proportion of people in that store also wore face masks. We repeated the same question by varying the proportion of people wearing face masks from 0% to 100% in steps of 25%. This provided evidence on whether participants would choose to wear face masks if the proportion of people wearing face masks in the grocery store varies.

Furthermore, in the questionnaire, we asked participants about their perception of the protection against COVID-19 that wearing face masks provided. In particular, we asked the following two questions: (i) 'How much do you think the face masks you wear could protect you from contracting the virus from others?' (ii) 'How much do you think the face masks you wear could protect others from contracting the virus from you?' The

participants reported their beliefs in five different scenarios, with the level of protection varying from 0–25%, 25–50%, 50–75%, to 75–100% in questions (i) and (ii). We then created a set of dummy variables to capture individuals’ perceptions of the protection provided by wearing face masks. We first define the perception variables as taking the value of 1 if participant belief in protection is 25% or above and apply these variables in our main regression models. Then, in the sensitivity analysis, we changed the threshold to 50% or above and 75% or above. From the responses to these questions, we can investigate how the difference in individual perceptions of protection provided by face masks affects participants’ intent to wear face masks and whether their intent changes if the social norm (i.e., the proportion of people in the grocery store wearing face masks) changes.

3. Methods

Our main interest lies in investigating the interaction effects between the perception of face masks’ protection against COVID-19 and the influence of other people wearing face masks at the same place, on face mask uptake. Specifically, we estimate the following linear probability model:

$$y_i = \alpha + \mathbf{Perception}_i \boldsymbol{\beta} + \gamma_1 \mathit{female}_i + \gamma_2 \mathit{age}_i + \gamma_3 \mathit{highedu}_i + \gamma_4 \mathit{asian}_i + \varepsilon_i.$$

The outcome variable y_i in this analysis is the intention to wear face masks. We applied three binary variables to measure an individual’s intention: (i) ‘always wear face masks’, which takes the value of 1 if the individual indicates wearing face masks regardless of whether people around them wear face masks or not, (ii) ‘never wear face masks’, which takes the value of 1 if the individual would not wear face masks regardless of whether people around them wear face masks or not, and (iii) ‘wear face masks if others wear’, which takes the value of 1 if the individual would wear a face mask only if other people at the same location also wear face masks.

The variable of interest in this model is the perception of protection. We constructed four dummy variables to represent whether the respondent perceived that wearing face masks can (i) protect either me (the wearer) or others, (ii) protect myself (the wearer) only, (iii) protect others only, and (iv) protect myself (the wearer) and others. Details on how these variables were constructed from the survey questions can be found in Appendix A1.

In the model, we also controlled for other exogenous individual socio-demographic characteristics, by including gender (captured by the dummy variable ‘Female’), age (in terms of years), education (captured by the dummy variable ‘Higher education’, which equals 1 if individual i had received post-secondary education), and ethnic group (captured by the dummy variable ‘Asian’) as the control variables.

4. Results

4.1. Descriptive statistics

Descriptive statistics for the variables are presented in Table 1. Overall, 32.7% and 42.9% of individuals reported that they would never or always wear face masks, respectively. The remaining 24.4% of individuals indicated that they would wear a face mask only if those around them also wore face masks. Individuals’ perceptions of face masks’ protective capability exhibit a large variation—9.6% of individuals perceived face masks as protective neither for themselves nor for others; less than 1% thought that face masks could only protect themselves; and slightly more (5.1%) perceived that face masks only protect others. The majority of individuals (85.6%) thought that face masks could protect both wearers and those surrounding the wearers.

Table 1: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Never wear face mask	156	0.327	0.471	0	1
Wear face mask if others wear	156	0.244	0.431	0	1
Always wear face mask	156	0.429	0.497	0	1
Don't protect myself nor others	156	0.096	0.296	0	1
Protect myself only	156	0.006	0.080	0	1
Protect others only	156	0.051	0.221	0	1
Protect myself and others	156	0.846	0.362	0	1
Female	156	0.513	0.501	0	1
Age	156	47.231	18.348	17	79
Higher education	156	0.365	0.483	0	1
Asian	156	0.103	0.304	0	1

Figure 1 explores the relationship between individuals’ perception of the protection provided by face masks and the sensitivity of wearing face masks to the use of face masks by others. The sensitivity of wearing face masks is classified into six groups – “Never wear” and “always wear” are the two groups who never face masks and always wear face masks, no matter the people around them are wearing face masks or not. The remaining

groups are the people who choose to wear face masks once the proportion of face mask wearers among the surrounding people reaches a certain percentage. Panel (a) shows the relationship between the perception that face masks can protect either the wearers or people around them, and whether an individual's use of face masks is dependent on the percentage of people around them also wearing face masks. Panel (b) shows a similar relationship for the case in which the participants perceive wearing face masks as protective for both the wearers and for the people around them.

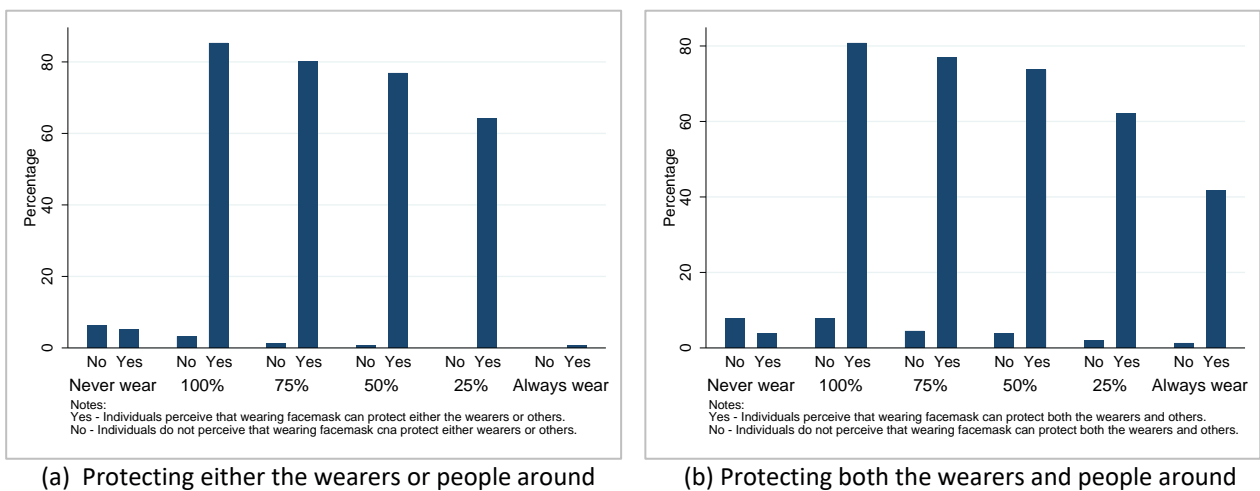


Figure 1: Percentage of individuals intended to wear facemask conditional on whether others wear facemasks

The figure indicates that people with the perception of wearing face masks can protect both the wearers and the surrounding people have a higher probability of wearing face masks disregarding whether the other people are wearing face masks or not. Also, it shows a desire of individuals to comply with social norms of wearing face masks as there is a positive relationship between the intent to wear face masks and the percentage of people wearing face masks in the same space. A similar pattern can be observed regardless of whether individuals perceive that face masks can protect either the wearers or people around them, or both.

4.2. Linear probability models

Table 2 presents the estimated effects of individuals' perceptions of the protection from wearing face masks on whether they will choose to wear face masks if some or all people in the same space wear face masks, by applying the linear probability model.

Table 2: Effects of individual perceptions on change in intent to wear face masks

(a) Wear face masks if others wear	(1)	(2)	(3)	(4)
Protect either me or others	-0.1 (0.13)			
Protect myself only		0.67*** (0.12)	0.71*** (0.14)	0.74*** (0.15)
Protect others only		0.04 (0.21)	0.08 (0.22)	0.07 (0.21)
Protect myself and others		-0.11 (0.13)	-0.1 (0.13)	-0.09 (0.13)
Female			-0.03 (0.07)	-0.02 (0.07)
Age			0.00 (0.00)	0.00 (0.00)
Higher education				-0.06 (0.08)
Asian				-0.06 (0.12)
Constant	0.33*** (0.12)	0.33*** (0.12)	0.44*** (0.15)	0.48*** (0.15)
N	156	156	156	156
R-sq	0.005	0.032	0.04	0.048

Notes: Robust standard errors are in parentheses. ***, **, * denote significance at 1%, 5%, and 10%, respectively.

The results in Table 2 indicate that compared to the individuals who think that wearing face masks does not provide any protection, on average, the predicted probability of wearing face masks is 74% higher if the individuals think that wearing face masks only protects the wearer.

Table 3 shows the results of estimating the linear probability models of the effects of individuals' protection perceptions on (b) whether they will always wear face masks regardless of whether people around them wear face masks and (c) whether they will never wear face masks regardless of whether people around them wear face masks.

Table 3: Effects of individuals' perceptions on whether to wear face masks

	(b) Always wear face masks				(c) Never wear face masks			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Protect either me or others	0.48*** (0.04)				-0.61*** (0.12)			
Protect myself only		0.00 (0.00)	-0.08 (0.05)	-0.13* (0.07)		-0.67*** (0.12)	-0.63*** (0.13)	-0.61*** (0.13)
Protect others only		0.25 (0.16)	0.18 (0.13)	0.19 (0.13)		-0.42** (0.20)	-0.42** (0.20)	-0.43** (0.20)
Protect myself and others		0.49*** (0.04)	0.46*** (0.05)	0.46*** (0.05)		-0.62*** (0.12)	-0.62*** (0.13)	-0.62*** (0.13)
Female			0.06 (0.08)	0.05 (0.08)			-0.07 (0.04)	-0.06 (0.04)
Age			0.00** (0.00)	0.00** (0.00)			0.00 (0.00)	0.00 (0.00)
Higher education				0.09 (0.08)				-0.04 (0.04)
Asian				0.00 (0.14)				0.01 (0.03)
Constant	0.00 (0.00)	0.00 (0.00)	-0.21** (0.10)	-0.25** (0.11)	0.67*** (0.12)	0.67*** (0.12)	0.69*** (0.13)	0.71*** (0.13)
N	156	156	156	156	156	156	156	156
R-sq	0.08	0.098	0.125	0.132	0.317	0.337	0.347	0.351

Notes: Robust standard errors are in parentheses. ***, **, * denote significance at 1%, 5%, and 10%, respectively.

The results illustrate that whether individuals decide to 'always wear face masks' mainly depends on their perception of whether wearing face masks can protect both wearers and the people around them. In contrast, perceiving that face masks only protect the wearers exhibits an adverse effect on choosing 'never wear face masks'. If the individuals think that wearing face masks can provide some protection, no matter if it is for the wearers, the people around them, or both, the predicted probability of 'never wear face masks' is lower. Among the different protection perceptions, the perception of face masks only protecting others exhibited relatively weaker effects on the probability of never wearing face masks than the other two protection perceptions.

4.3. Ordered logistic models

To assess the validity of the results obtained from the linear probability models, we deployed an alternative empirical method to analyse individuals' choices of wearing face masks when the proportion of people around

them wearing face masks varies. The ordered logistic model is fitted by regressing the six alternatives of choosing to wear face masks in the following order: always wear (the highest ranking), wear face masks when 25%, 50%, 75%, and 100% of people around wear face masks, and never wear (the lowest ranking). The odds ratios obtained from the ordered logistic regressions are presented in Table 4.

Table 4: Odds ratios from the ordered logistic regressions

	(1)	(2)	(3)	(4)
Protect either me or others	3.74*** (0.62)			
Protect myself only		2.49 (1.57)	2.1 (1.58)	1.88 (1.59)
Protect others only		2.15** (0.87)	2.05** (0.86)	2.17** (0.87)
Protect myself and others		3.94*** (0.63)	3.89*** (0.63)	3.94*** (0.63)
Female			0.49 (0.31)	0.47 (0.31)
Age			0.02* (0.01)	0.02** (0.01)
Higher education				0.42 (0.33)
Asian				0.03 (0.52)
N	156	156	156	156
Pseudo R-sq	0.096	0.11	0.122	0.125

Notes: Standard errors are in parentheses. ***, **, * denote significance at 1%, 5%, and 10%, respectively.

The estimates obtained from the ordered logistic regressions are consistent with the results shown in Tables 2 and 3. In general, if individuals perceive that wearing face masks provides some protection, to either the wearers or others, the odds of wearing face masks increase, even if the proportion of people around them not wearing masks increases. The coefficient estimate of ‘Protect either me or others’ in column (1) is 3.74, which implies that as long as some people start wearing face masks, the odds for individuals with the protection perception (that wearing face masks can protect either the wearer or others) is 3.74 times that of the odds for individuals without this perception. Among the different perceptions of protection (i.e., whether wearing face masks protects wearers, the people around them, or both), if individuals perceive that wearing face masks can protect both the wearers and people around them, the odds of wearing face masks increased the most significantly. In Models (3) and (4), we include the sociodemographic characteristics of individuals in the

independent variables. However, most of them did not have significant effects on the choice of wearing face masks, except that an individual's age exhibits a positive impact on wearing face masks.

4.4 Sensitivity analysis for the perceived protection variables

As mentioned in Section 2, we generated the perceived protection variables by setting the threshold of protection to 25% or above. This setup may induce concerns about whether the analysis results are sensitive to the definition of the perceived protection variables. To assess the robustness of the setup of the perceived protection variables, we generated two different sets of perceived protection variables by setting the protection threshold at 50% or above and re-running the regressions in Tables 2, 3, and 4. The estimation results obtained using these two sets of perceived protection variables are consistent with the results of our main models. The results of the sensitivity analysis are presented in Appendix A2.

5. Discussion

Our results show that, compared to individuals who perceive wearing face masks as not providing any protection, individuals who perceive wearing face masks as either self-protecting or other-regarding are less likely to choose to never wear face masks. However, the differences in perceptions of protection coverage induce heterogeneous effects on the intent to wear face masks that are conditional on others' behaviour. Overall, if individuals perceive that wearing face masks is both self-protecting and other-regarding, their intent to wear face masks is higher, regardless of whether other people are wearing face masks. However, if individuals perceive that wearing face masks is only self-protecting, protection coverage increases the intent to wear face masks only if others are wearing face masks. These results imply that social norms may not serve as a strong driver of mask use among individuals with the 'self-protection only' perception.

Encouraging people to wear face masks without mandates is an important public health policy for reducing the spread of COVID-19 and other diseases that have negative externalities. In many countries, governments have emphasised that wearing face masks can reduce the spread of the virus. Our findings suggest that, as a more effective way to promote face mask use, governments should highlight how face masks can protect both

wearers and those around them.

One limitation of this study is that it did not investigate whether the uptake of other precautionary measures, such as COVID-19 vaccination, would crowd out the intent to wear face masks. Since COVID-19 vaccination provides direct protection to vaccinated people, it may reduce people's intent to wear face masks as they might think they are already protected. However, the effect of protecting others on the uptake of face masks use might be stronger among vaccinated cohorts. Further research is required to cover the interaction effects between the protection provided by wearing face masks and vaccination.

6. Conclusions

In this study, we conducted an online survey to investigate how the uptake of precautionary measures (i.e. wearing face masks) is related to self-interest and other-regarding preferences, and examined the sensitivity of face mask uptake to the effect of preventative measures on protecting ourselves and others. We found that the perception that face masks protect the self and/or others affects people's intent to use face masks in different ways. Specifically, if people perceive wearing face masks as protective of themselves and others, their probability of always wearing face masks increases by 46%. If people perceive that face masks protect the wearer only, there are no significant changes in the probability of always wearing face masks. Instead, this perception will increase the probability of changing intent from not wearing face masks to sometimes wearing face masks by 74%, if the people around them are wearing face masks.

This study contributes to the literature on the determinants of health behaviours with regards to externalities by linking people's social preferences to precautionary behaviour (i.e., wearing face masks). The results could shed light on future public policy for encouraging the uptake of precautionary behaviours, especially when implementing the mandatory use policy is challenging or public autonomy is highly valued. Promoting the benefits of protecting others could significantly increase the voluntary use of face masks in the communities.

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Appendix

A1: Survey questions used to construct the perception variables

Our variable of interest is the perception of the protection of wearing face mask. In the survey, there are two questions concerning the perceived protection from wearing face mask as stated below:

(i) How much do you think the face-masks you wear could protect you from contracting the virus from others?

(ii) How much do you think the face-mask you wear could protect others from contracting the virus from you?

For each of these two questions, the respondents can choose their answer from the following four choices: 75%-100%, 50%-74%, 25%-49%, and 0-24%. In the main analysis, we adopted the threshold at 25% as perceiving if wearing face mask can provide protection, i.e., if the answer is 25% or above, we define that the respondent perceive protection according to the type of protection the question asked for. In the sensitivity analysis, the threshold was set at 50% and 75% respectively. The three dependent variables are then constructed in the following way:

Question	Perceiving protection			
The face-masks you wear could protect you from contracting the virus from others	Yes	Yes	No	No
The face-mask you wear could protect others from contracting the virus from you	Yes	No	Yes	No
Perception variable	Values taken by the perception variable			
Protect either me or other	1	1	1	0
Protect myself only	0	1	0	0
Protect others only	0	0	1	0
Protect myself and others	1	0	0	0

A2: Results from the sensitivity analysis

Table A2.1: Effects of individual perceptions on change in intent to wear face masks with different perception threshold

Wear face mask if others wear	(1)	(2)	(3)	(4)
Protect either me or others	-0.1 (0.13)			
Protect myself only		0.07 (0.24)	0.06 (0.24)	0.06 (0.24)
Protect others only		-0.03 (0.16)	-0.01 (0.16)	-0.03 (0.16)
Protect myself and others		-0.13 (0.10)	-0.11 (0.10)	-0.11 (0.10)
Female			-0.01 (0.07)	-0.01 (0.07)
Age			0.00 (0.00)	0.00 (0.00)
Higher education				-0.05 (0.08)
Asian				-0.07 (0.12)
Constant	0.33*** (0.12)	0.33*** (0.09)	0.40*** (0.12)	0.44*** (0.13)
N	156	156	156	156
R-sq	0.005	0.019	0.023	0.029

Notes: Robust standard errors are in parentheses. ***, **, * denote significance at 1%, 5%, and 10%, respectively.

Table A2.2: Effects of individual perceptions on whether or not to wear face masks
with different perception threshold

	Always wear face mask				Never wear face mask			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Protect either me or others	0.48*** (0.04)				-0.61*** (0.12)			
Protect myself only		0.33 (0.23)	0.34 (0.23)	0.34 (0.23)		-0.44*** (0.10)	-0.45*** (0.10)	-0.45*** (0.10)
Protect others only		0.39** (0.15)	0.36** (0.15)	0.37** (0.15)		-0.29** (0.14)	-0.30** (0.14)	-0.30** (0.14)
Protect myself and others		0.44*** (0.07)	0.41*** (0.07)	0.41*** (0.07)		-0.41*** (0.10)	-0.41*** (0.10)	-0.41*** (0.10)
Female			0.05 (0.08)	0.04 (0.08)			-0.07 (0.05)	-0.06 (0.05)
Age			0.00 (0.00)	0.00* (0.00)			0.00 (0.00)	0.00 (0.00)
Higher education				0.07 (0.08)				-0.02 (0.05)
Asian				0.06 (0.14)				-0.06 (0.07)
Constant	0.00 (0.00)	0.07 (0.05)	-0.09 (0.11)	-0.14 (0.12)	0.67*** (0.12)	0.44*** (0.10)	0.46*** (0.11)	0.49*** (0.12)
N	156	156	156	156	156	156	156	156
R-sq	0.08	0.11	0.126	0.134	0.317	0.233	0.246	0.251

Notes: Robust standard errors are in parentheses. ***, **, * denote significance at 1%, 5%, and 10%, respectively.

Table A2.3: Odds ratios from the ordered logit regressions with different perception threshold

	(1)	(2)	(3)	(4)
Protect either me or others	3.74*** (0.62)			
Protect myself only		2.01** (0.89)	2.13** (0.92)	2.15** (0.92)
Protect others only		1.72** (0.67)	1.64** (0.67)	1.76*** (0.68)
Protect myself and others		2.56*** (0.44)	2.48*** (0.44)	2.49*** (0.44)
Female			0.44 (0.31)	0.40 (0.31)
Age			0.01 (0.01)	0.01 (0.01)
Higher education				0.27 (0.33)
Asian				0.51 (0.54)
N	156	156	156	156
Pseudo R-sq	0.096	0.08	0.087	0.091

Notes: Standard errors are in parentheses. ***, **, * denote significance at 1%, 5%, and 10%, respectively.