

The Correlates of Fear of COVID-19: An Exploratory Study Among Chinese Frontline Customs Officers in Hazardous Situations

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Public employees fighting the COVID-19 pandemic on the frontline might experience fear due to extreme work demand and further develop profound attitudinal and behavioral responses. However, public administration literature is rather silent on the psychological correlates of this fear. Following the job demands-resources model, this study examined the possible antecedents and outcomes of fear of COVID-19 using survey data collected from frontline customs officers in China. The results indicated that self-efficacy, resilience, and perceived organizational support attenuated fear of COVID-19, while public service motivation did not. Fear of COVID-19 reduced work engagement and job satisfaction and increased turnover intention. Moreover, there was a substitution interaction between self-efficacy and resilience in affecting customs officers' fear. These findings provide theoretical insights over understanding the fear of public employees on the anti-pandemic frontline and offer public managers practical implications over building a strong and resilient workforce to fight the pandemic.

Keywords: Fear of COVID-19, self-efficacy, resilience, public service motivation, perceived organizational support, work engagement, job satisfaction, turnover intention, job demands-resources model

Introduction

The COVID-19 has spread to many countries and regions and caused unprecedented challenges for the international community (Johns Hopkins Coronavirus Resource Center, 2020). China is one of the few countries that have successfully contained the virus and restored stability and has entered the stage of preventing the virus from reentering the country and curbing domestic regional rebounds (Xinhua, 2020). There are mainly two channels for the coronavirus to enter: by cargo or by people. Although international communications have reduced, it is impossible to cut countries off from trade and people-to-people exchanges. Accordingly, customs officers working at the borders examining cargo and people are critical to controlling and containing the pandemic. They measure temperatures, conduct COVID-19 tests, enforce quarantine orders, and identify and isolate confirmed cases (Mamma & Spandidos, 2019). Hence, to contain the virus and secure safe international exchanges, it is of paramount importance to support the frontline customs workforce and maintain their healthy functioning.

The coronavirus has generated multi-scaled interruptions for frontline customs officers (Schuster et al., 2020). On the one hand, it has essentially changed their work approach and increased their workload to an extreme condition. On the other hand, it has put them into physical exposure to virus-carrying conditions and under potential risks of infection, which may trigger an emotional fear in them. Increasing research has reported coronavirus related fear among frontline public employees, including healthcare workers (Collantoni et al., 2021; Llorente-Alonso et al., 2021), physicians (Abdelghani et al., 2020), and nurses (Labrague & De Los Santos, 2021; Mubarak et al., 2021). This fear of COVID-19

might impair their psychological and physical wellbeing and deteriorate their work effectiveness (Khattak et al., 2021; Simsir et al., 2021). For example, Lorrente-Alonso et al. (2021) revealed that fear of COVID-19 contributed to emotional disorders in frontline health professionals. In another study on frontline nurses in Philippine, fear of COVID-19 was found to intensify psychological stress and turnover intention and diminish job satisfaction (Labrague & De Los Santos, 2021).

Despite the importance of this concern, available empirical evidence in public administration (PA) literature on fear of COVID-19 among frontline employees apart from medical professionals remains limited (Schuster et al., 2020). Meanwhile, existing PA studies on COVID-19 mainly conduct macro-level analysis and discuss policy and institution (Cheng et al., 2020; Jing, 2021; Mei, 2020), while psychological reactions among individual public employees are underexplored. Given the prominent role customs officers play at the vanguard of this hazardous situation, their perceptions, attitudes, and behaviors warrant more research attention (Schuster et al., 2020). Moreover, previous studies of fear of COVID-19 fall short of identifying which personal or organizational characteristics may affect this fear and how fear further affects workplace effectiveness (Labrague & De Los Santos, 2021).

To fill the above-mentioned research gaps and heed the call to examine more on how COVID-19 influences workplace (Kazak, 2020), the current study aims to assess the perceived fear of COVID-19 among frontline public employees in China and investigate types of resources that can mitigate their fear, as well as fear's impact on workplace outcomes. Specifically, it first evaluates the degree of fear of COVID-19 among 591 Chinese frontline customs workers, alongside important classifications such as whether they are

volunteers and vaccinated. Second, based on the theoretical implication of the job demands-resources (JD-R) model, it explores the effectiveness of personal and organizational resources in alleviating fear of COVID-19. Examined variables include psychological capital components (self-efficacy and resilience) which are important but underrepresented variables in PA domain (Firestone & Anngela-Cole, 2016), public service motivation (PSM), and perceived organizational support (POS). Third, it highlights the workplace implications of fear of COVID-19 by linking it to three important outcome variables: work engagement, job satisfaction, and turnover intention. Work engagement and job satisfaction secure healthy functioning to effectively cope and contain the pandemic, while turnover could induce instability detrimental to the continuous functioning of public service provision during the pandemic (Labrague & De Los Santos, 2021; Mamma & Spandidos, 2019; Schuster et al., 2020). This study contributes to PA research on COVID-19 by examining frontline public employees' psychological perceptions and attitudes from a micro level. The findings improve theoretical understanding of personal and organizational resources' role in alleviating fear in the COVID-19 context. It also provides insightful implications for public managers on developing interventions to sustain a strong and resilient frontline workforce.

Literature Review and Hypotheses

Fear of COVID-19

Fear is a high arousal and negative emotion in response to actual or perceived threats.

Against the backdrop of the ongoing COVID-19 pandemic, fear is one of the most widespread psychological consequences (Ahorsu et al., 2020; Frijda et al., 1989; Gullone,

2000; Meisler, 2020). To date, prior research has found fear of COVID-19 in both the general public (Chi et al., 2021) and specific frontline professions (Ahorsu et al., 2020; Chen & Eyoun, 2021; Labrague & De Los Santos, 2021). Fear may magnify the virus' impact and make people overestimate the dangerous situations, which further impedes rational reactions that are important when dealing with the virus (Ahorsu et al., 2020). Initial evidence suggests the deleterious effects of fear of COVID-19 on frontline workers' psychological wellbeing, including higher levels of anxiety (Abdelghani et al., 2020), depression (Gasparro et al., 2020), burnout (Abdelghani et al., 2020), emotional exhaustion (Chen & Eyoun, 2021), and psychological disorders (Llorente-Alonso et al., 2021).

Customs officers dealing with the importation and exportation flow of goods and international travelers might be physically exposed to the virus. Work-related COVID-19 precautions and procedures such as wearing personal protective equipment, taking multiple COVID-19 tests, and receiving training on the influences of the virus on the human body through pictures and videos, might induce fear. Moreover, social distancing, quarantine and overwhelming news of confirmed cases also impose anxiety and psychological burdens that could lead to fear (Khattak et al., 2021; Labrague & De Los Santos, 2021; Mamma & Spandidos, 2019). It is, therefore, reasonable to assume that COVID-19 has threatened frontline customs workers and elicited fear among them, which might lead to detrimental outcomes.

Job Demands-Resources (JD-R) Model

The JD-R model stipulates that employees' wellbeing is affected by a balance between two categories of working conditions: job demands and job resources (Bakker, 2015; Demerouti

et al., 2001). Job demands refer to the physical, psychological, social, or organizational aspects of a job that consume resources to deal with (Bakker, 2015; Demerouti et al., 2001), which may lead to work-related stress, absenteeism, health problems, and ultimately undermine job performance. Examples include high work pressure, poor environmental conditions (Gross et al., 2019), role conflict, work overload, and red tape (Borst et al., 2019; Shim et al., 2017). Job resources are defined as factors that can meet job demands, achieve organizational objectives, and stimulate personal development (Bakker, 2015; Demerouti et al., 2001), such as supervisor support, goal specificity, performance feedback (Shim et al., 2017). Contrary to job demands, job resources can prompt employees' motivation and engagement and enhance their psychological wellbeing (Bakker, 2015; Demerouti et al., 2001).

The JD-R model further incorporate personal resources as well, which are defined as individuals' positive self-evaluations and sense of control over their environment, for instance, optimism, self-efficacy, and self-esteem (Hobfoll et al., 2003; Xanthopoulou et al., 2009). They are the psychological characteristics embedded within individuals and have been shown that can buffer damaging effects of hindering job demands and bolster a variety of work-related wellbeing outcomes (Bakker, 2015; Schaufeli et al., 2006; Xanthopoulou et al., 2009).

Following the tenet of the JD-R model, the current study assesses fear of COVID-19 as an emotion resulting from job demands working on the anti-pandemic frontline and incorporates self-efficacy, resilience, and PSM as personal resources, POS as an organizational resource to test to what extent they can help mitigate fear of COVID-19. It

also examines whether fear induced by job demands lead to detrimental effects by introducing work engagement, job satisfaction, and turnover intention as job-related outcomes.

Personal Resources and Fear of COVID-19

Self-Efficacy

Self-efficacy refers to people's beliefs in their abilities to exercise control over environmental demands and maintain functioning to perform specific tasks (Bandura, 1977; Benight & Bandura, 2004; Luthans, Youssef-Morgan, et al., 2007). It helps to shape individuals' perception of threats because low self-efficacious people consider possible threats in an unmanageable view, subsequently distressing themselves, while individuals with high self-efficacy experience fewer negative emotions when dealing with stressful events (Bandura, 1977; Benight & Bandura, 2004). To date, several studies have concluded that frontline medical staff who exhibited a higher level of self-efficacy experienced less psychological anxiety (Mo et al., 2021), posttraumatic stress disorder symptoms (Bidzan et al., 2020; Zhou et al., 2021), and distress (Hu et al., 2020). Aligned with these studies, it is hypothesized that customs officers with a strong sense of self-efficacy showcase more confidence and courage to perform their anti-pandemic tasks and thus a less fearful state against the virus.

Resilience

Defined as individuals' capability to confront and bound back from adversities, resilience has been examined as an important protective factor against hardships (Luthans, Youssef-

Morgan, et al., 2007). Resilience enables people to allocate their psychological resources to remain strong and moderates their susceptibility to stressful events. Resilient individuals might even achieve positive progress through difficulties (Garmezy, 1993; Luthans, Avolio, et al., 2007). Previous theorizing and empirical research suggest that resilience exerts a powerful effect on frontline healthcare workers' psychological wellbeing, for those with more resilience could experience less COVID-19 related anxiety, burnout, and helplessness (Albott et al., 2020; Labrague & De Los Santos, 2020). Resilience has also been reported to mitigate fear of COVID-19 among the general population (Chi et al., 2021; Satıcı et al., 2020) and university students (Gundogan, 2021; Pakpour et al., 2020). Thus, it is proposed that resilience can play a preventive role in customs officers' apprehension of COVID-19.

Moreover, according to Luthans et al. (2007), PsyCap is a synergistic and higher-order construct of hope, efficacy, resilience, and optimism. Positive synergies will happen when there are interactions among these components. People with high resilience may be capable of utilizing necessary functions to perform their tasks and efficacious individuals may be able to exert their resilience to the specific tasks within their domain (Luthans, Youssef-Morgan, et al., 2007). This is compliant with what Bandura suggested: "success usually comes through renewed efforts after failed attempts. It is resiliency of personal efficacy that counts" (Bandura, 1998). Thus, an interactive effect between self-efficacy and resilience on fear of COVID-19 is expected.

Public Service Motivation

Recent PA literature has treated PSM as a critical personal resource and examined its

virtuous effects within the JD-R framework (Bakker, 2015; Borst et al., 2019; Potipiroon & Faerman, 2020; Shim et al., 2020). PSM has been conceptualized as individuals' pre-disposition to enhance altruistic behaviors and serve the public interest, which is associated with empathy, understanding, benevolence, and helpfulness (Davis et al., 2020; Perry et al., 2010; Perry & Wise, 1990). Research has shown that PSM can act as a motivational base for psychological perception (Bakker, 2015; Scott & Pandey, 2016), such that those with stronger public service motivation are less likely to portray work-related stressors and process the emotions accompanying the stressors in a negative light. For example, an empirical study among Chinese police officers has indicated that frontline officers with a high-PSM profile experienced more psychological wellbeing than their low-PSM colleagues, after encountering long work hours, work-home conflict, and incompatible job demands (Liu et al., 2015). Given that the public sector plays the leading role in coping with the crisis, it is reasonable to assume that frontline customs officers with a stronger commitment to public service are more courageous and confront the pandemic with less fear.

Based on the above discussion, this study hypothesizes that:

Hypotheses 1: Personal resources such as self-efficacy (H1a), resilience (H1b), PSM (H1c) are negatively related to fear of COVID-19.

Hypothesis 2: Resilience moderates the relationship between self-efficacy and fear of COVID-19 such that this relationship is stronger when resilience is higher versus lower.

Organizational Resources and Fear of COVID-19

This study next considers POS as a vital organizational resource for employees to draw on in

the face of COVID-19. POS reflects employees' general beliefs concerning the degree to which the organization appreciates their contributions and cares about their wellbeing (Eisenberger et al., 1986; Kurtessis et al., 2017; Rhoades & Eisenberger, 2002). It is an organizational physical and psychological resource that ultimately shapes employees' orientations and wellbeing (Bakker & Demerouti, 2007; Cho & Song, 2020; Kurtessis et al., 2017). Organizational support theory has posited that POS is conducive to positive mood states. When employees view the organization as supportive, they take more favorable attitudes and develop more positive evaluations due to social exchange obligations (Chen et al., 2021; Folkman & Lazarus, 1986; Kurtessis et al., 2017). Meta-analytic evidence has consistently linked POS to less adverse effects of workplace stressors (Kurtessis et al., 2017; Riggall et al., 2009). The COVID-19 literature has also indicated that high levels of organizational support perceived by frontline healthcare workers could reduce coronavirus-related anxiety (Labrague & De Los Santos, 2020; Zhou et al., 2021) and posttraumatic stress disorder symptoms (Zhou et al., 2021). This study thus hypothesizes that:

Hypothesis 3: Organizational resource (POS) is negatively related to fear of COVID-19.

Fear of COVID-19 and Work-related Outcomes

As claimed in the JD-R model, an increase in job demands and a decrease in job resources may incur lower work engagement, greater absenteeism, and further lower job performance (Schuster et al., 2020). Many studies have examined the deleterious effects of COVID-19 on mental and physical health among frontline workers (Simsir et al., 2021), but less is known about how it relates to job-related variables, especially in the PA context (Labrague & De

Los Santos, 2021). To address this gap, this study extends the nomological network of fear of COVID-19 to the context of workplace and links it to three important work-related outcomes in the current pandemic.

Work engagement is defined as “a positive, fulfilling work-related state of mind” which comprises three components including vigor, dedication, and absorption (Schaufeli et al., 2006). Vigor refers to energetic resources and mental resilience to invest efforts in one’s work even in hard times; dedication can be seen as one’s involvement and sense of significance and enthusiasm in work; and absorption refers to complete concentration in one’s work (Schaufeli et al., 2006). Research has verified that negative emotions and psychological threats brought by difficult situations are related to decreased levels of engagement (Crawford et al., 2010; May et al., 2004). This is also consistent with the reasoning from the JD-R model which contends that when people are experiencing negative and taxing feelings (i.e., fear, anxiety, and anger) that make them believe they are incapable to cope with job demands, they will be more reluctant to invest energy to meet those demands (Schaufeli et al., 2006). Thus, in the case of frontline customs officials, they may be disengaged from their work roles and cannot give their full selves into the job.

Job satisfaction, as a positive emotional state stemming from one’s evaluations of how favorable the job is (Locke, 1976; Srivastava & Locke, 2006), is linked with job characteristics, job demands, and employees’ performance (Hsieh, Jin, et al., 2012; Srivastava & Locke, 2006). PA scholars have revealed that psychological stress induced by emotional work in public service delivery is negatively related to job satisfaction (Jin & Guy, 2009; Wang et al., 2014). In a similar vein, frontline nurses threatened by COVID-19 were

observed with lower job satisfaction (Labrague & De Los Santos, 2021). Another frequently examined attitude in organizational research is turnover intention. It refers to employees' intention to leave the organization and could predict the likelihood of employees' actual quit behaviors (Podsakoff et al., 2007). Extant literature has indicated that fear or anxiety brought by the coronavirus may have long-term influences on employees' intention to leave among other frontline occupations, such as nurses (Khattak et al., 2021; Labrague & De Los Santos, 2021) and restaurant employees (Chen & Eyoun, 2021). Based on the above discussion, the fourth hypothesis is stated as follows:

Hypothesis 4: Fear of COVID-19 is negatively related to work engagement (H4a) and job satisfaction (H4b), and is positively related to turnover intention (H4c).

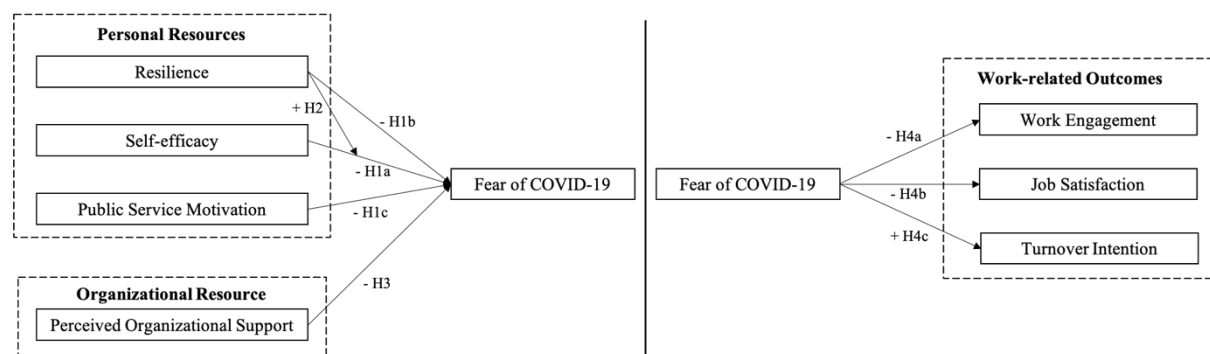


Figure 1. Theoretical Model.

Methods

Sample and Procedures

This study collected data from frontline customs officers in China during the pandemic. At the time of the survey, late January 2021, China's main challenge in coping with the pandemic was to prevent it from re-entering the country. While inbound people and cargo

were the primary sources of possible contamination, customs officers at the frontline faced the most challenging situation in the country, which provides the possibility of experiencing fear. This study used an online survey to measure the variables. A link of the survey was posted on the internal anti-pandemic job contact group of the national customs system, inviting those officers who were working at the frontline to participate. The academic, voluntary, anonymous, and confidential nature of the survey was emphasized in the introduction of the survey. The survey was open for two weeks and reminding messages were sent during the survey to boost the response rate. In total, 614 participants across 31 cities in China returned their questionnaires. Of these, 23 questionnaires were excluded from further analysis due to inappropriate completion times. The final sample thus consisted of 591 participants working in various posts (e.g., airport passenger inspection, yard inspection, and health centre). Officers from Beijing, Shanghai, Guangzhou, Shenzhen and other large coastal cities were represented in the sample because those cities had the most workload during the pandemic. In this respect, the final sample is reasonably representative of the Chinese customs officers fighting the pandemic at the frontline.

The majority of respondents were male (62.6%) and staff members (43.8%). The average age was 34.6 years ($SD = 6.79$) and tenure in the current organization was 9.23 years ($SD = 6.81$). A total of 56.2% reported voluntarily working on the frontline and 65.3% had received the COVID-19 vaccine at the time of the survey (late January and early February of 2021).

Measures

Fear of COVID-19 Scale (FCV-19S)

The 7-item FCV-19S originally developed by Ahorsu et al. (2020) is used to examine fear of COVID-19 with items like “I am most afraid of coronavirus-19” ($\alpha=.91$). It is scored on a 5-point Likert (1 = *strongly disagree* to 5 = *strongly agree*). A composite score ranging from 7 to 35 is calculated by adding up each item score, as a higher score reflects a greater degree of fear. A Chinese version of this scale was translated and its reliability and validity were examined (Chi et al., 2021).

Antecedent variables

Self-efficacy ($\alpha = .89$) assessed in the current study refers to a domain-specific self-efficacy against COVID-19. A three-item scale was revised to fit into the COVID-19 context with items such as “I have mastered the skills necessary for my job fighting against COVID-19.” (Li et al., 2006). Resilience ($\alpha = .82$) was measured by 6 items from the Psychological Capital Questionnaire (Luthans, Youssef-Morgan, et al., 2007). A sample item is “When I have a setback at work, I have trouble recovering from it, moving on.” PSM ($\alpha = .85$) was assessed by a 5-item scale (Wright et al., 2012). A sample item is “Meaningful public service is very important to me.” POS ($\alpha = .93$) was measured using an 8-item scale (Hekman et al., 2009). A sample item is “the organization cares about my opinion.” All antecedent variables were evaluated on the five-point Likert scale of response options from 1 (strongly disagree) to 5 (strongly agree).

Outcome variables

Work engagement ($\alpha = .96$) was measured using the short version Utrecht Work Engagement Scale (Schaufeli et al., 2006). A sample item is “I am enthusiastic about my job.” All the 9 items were scored on a 7-point Likert scale of 0 (Never) to 6 (always). Job satisfaction and turnover intention were assessed by one single item both from the Job Satisfaction Scale by Hackman and Lawler (1971). The item for job satisfaction is “Generally speaking, I am very satisfied with this job”, and the item measuring turnover intention is “I frequently thinking of quitting my job.” Previous studies have applied this single item approach when measuring job satisfaction and turnover intention and reported high validity (Borst et al., 2019; Giaque, 2016; Steijn & van der Voet, 2019; Taylor, 2008). Both items were measured on a 5-point Likert scale.

Control Variables

The sociodemographic variables included: gender (0 = female, 1 = male), age (in years), education level (high school or lower, college/technical school, university bachelor’s degree, master’s degree, and PhD degree), rank (staff member, deputy section chief level, section chief level, deputy office chief level, office chief level, above office level), and organization tenure (in years). Furthermore, because the willingness to work on the frontline and COVID-19 vaccine inoculation could be associated with fear of COVID-19 (Chi et al., 2021; Lo Coco et al., 2021; Luo et al., 2021), whether participants volunteered to be frontline workers (Yes/No) and whether they have received COVID-19 vaccine (Yes/No) were also measured and treated as control variables.

Results

Preliminary Analysis

Table 1 reports the means, standard deviations, reliabilities, and correlations among all study and control variables. Prior to hypothesis testing, a set of confirmatory factor analyses (CFA) was conducted to evaluate the discriminant validity of the study variables. The proposed models demonstrated good discriminant validities with the data. The results are summarized in Table 2. Furthermore, common method bias (CMB) may be a concern in this study as it relies on self-reported measures to test the perceptions of public employees. Following the procedures recommended by George and Pandey (2017), this study conducted a Harman's single factor test to examine CMB. The result showed that 33.44% of the total variance was explained by a single factor, less than the threshold of 50%.

Table 2. *Summary of Confirmatory Factor Analyses*

Models	χ^2	<i>df</i>	CFI	TLI	RMSEA	SRMR
Six – factor model ^a	1556.67	449	.92	.91	.07	.05
Five – factor model ^b	1186.53	366	.93	.92	.06	.05
Two – factor model ^c	444.47	98	.96	.95	.08	.03

Note. CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual. ^aThe seven factors were: self-efficacy, resilience, PSM, POS, FCV-19, work engagement. The variables job satisfaction and turnover intention were not included because they were measured with a single item. Given the number of parameters and following previous recommendations (Ren et al., 2021; Russell et al., 1998), the longest scale (i.e., work engagement with 9 items) was parceled into its

theoretical dimensions. ^bThe five factors were: self-efficacy, resilience, PSM, POS, FCV-19. ^cThe two factors were: FCV-19 and work engagement.

Table 1. Means, standard deviations, and correlations with confidence intervals

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Gender	.37	.48														
2. Age	34.61	6.79	-.02													
3. Education	3.17	.51	.02	-.06												
4. Rank	1.90	.92	-.10*	.54**	.18**											
5. Tenure	9.23	6.81	-.02	.75**	-.11**	.56**										
6. Volunteer	.44	.50	.06	.08*	-.07	.01	.07									
7. Vaccinated	.35	.48	.13**	-.00	-.01	-.05	-.01	.13**								
8. FCV-19	16.26	6.67	.13**	.05	-.06	.01	.06	.11**	.11**	(.91)						
9. SE	3.81	.81	-.08	.00	.01	-.08*	-.02	-.25**	-.08*	-.22**	(.89)					
10. Resilience	3.56	.66	-.07	.13**	.00	.07	.09*	-.19**	.02	-.26**	.44**	(.82)				
11. PSM	3.91	.71	-.01	.05	-.02	.05	.03	-.30**	.03	-.12**	.47**	.39**	(.85)			
12. POS	2.83	.89	.03	-.03	-.05	-.02	-.05	-.34**	.04	-.18**	.23**	.34**	.43**	(.93)		
13. WE	3.82	1.64	-.06	.07	-.03	.02	.05	-.31**	.01	-.13**	.34**	.50**	.54**	.56**	(.96)	
14. JS	3.37	.94	-.03	.03	-.05	.06	.04	-.31**	.05	-.09*	.32**	.30**	.48**	.57**	.54**	
15. TI	2.63	1.16	.02	-.01	.07	-.04	-.02	.25**	-.02	.21**	-.17**	-.30**	-.31**	-.54**	-.42**	-.55**

Note. N = 591. Numbers in parentheses are the Cronbach's alphas.

FCV-19 = Fear of COVID-19. SE = self-efficacy. PSM = public service motivation. POS = perceived organizational support. WE = work engagement. JS = job satisfaction.

TI = turnover intention.

* $p < .05$. ** $p < .01$.

Hypotheses testing

A set of hierarchical regression analyses were used to test hypotheses 1-4. Table 3 presents the results from regression analyses for antecedent variables. Hypotheses 1a, 1b, and 1c state that personal resources including self-efficacy, resilience, and PSM should be negatively associated with fear of COVID-19. As shown in Table 3 (Model 2), after controlling the effects of socio-demographic variables, self-efficacy ($\beta = -.13, p < 0.01$) and resilience ($\beta = -.19, p < 0.001$) were negatively associated with fear of COVID-19, but the PSM was not. Thus, only Hypothesis 1a and Hypothesis 1b were supported. Model 2 also indicates that POS ($\beta = -.12, p < 0.05$) significantly predicted fear of COVID-19, supporting Hypothesis 3.

Table 3. *Hierarchical Regression Results for Antecedent Variables*

Variables	FCV-19		
	Model 1	Model 2	Model 3
<i>Control Variables</i>			
Gender	.12**	.10*	.11**
Age	.003	.05	.04
Education	-.053	-.06	-.06
Rank	.006	-.02	-.02
Tenure	.05	.04	.04
Volunteer	.09*	-.003	.002
Vaccinated	.08*	.09*	.10*
<i>Main Predictors</i>			
Self-efficacy		-.13**	-.09
Resilience		-.19***	-.19***
PSM		.05	.06
POS		-.12*	-.12*
Self-efficacy * Resilience			.11**

Overall F	3.58**	7.33***	7.42***
R^2	.04	.12	.13
ΔR^2	.04	.08	.01
ΔF	3.581**	13.36***	7.48**

Note. N = 591. Standardized coefficients are reported.

FCV-19 = Fear of COVID-19. PSM = public service motivation. POS = perceived organizational support.

Model 3 demonstrates that the interaction term between self-efficacy and resilience ($\beta = .11, p < 0.01$) was significantly related to fear of COVID-19. Simple slopes were plotted in Figure 2 at one standard deviation above and below the mean of resilience. Contrary to Hypothesis 2, the relationship between self-efficacy and fear of COVID-19 was stronger for the low-resilience group (simple slope = -1.27, $t = -3.75, p < 0.001$), whereas the slope was flatter and insignificant for the high-resilience group (simple slope = -.38, $t = -.93, p > 0.1$). In other words, the effect of self-efficacy on fear of COVID-19 was crowded out by high resilience.

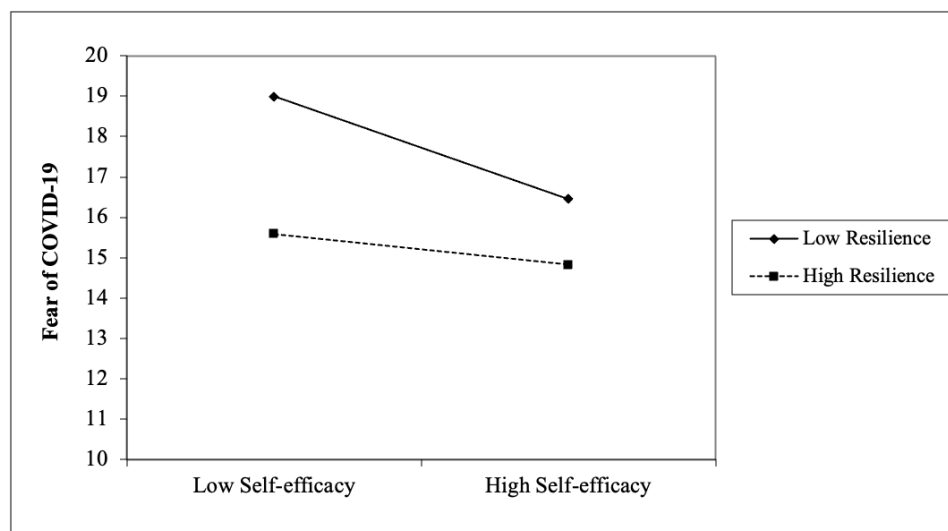


Figure 2. Interactive effects of self-efficacy and resilience on fear of COVID-19

Hypotheses 4a, 4b, and 4c suggest that fear of COVID-19 is negatively related to work engagement and job satisfaction and positively related to turnover intention. Table 4

(Model 5, 7, and 9) reports the regression results. As shown, fear of COVID-19 was significantly associated with decreased work engagement ($\beta = -.10, p < 0.05$), decreased job satisfaction ($\beta = -.11, p < 0.01$) and increased turnover intention ($\beta = .20, p < 0.001$). Therefore, Hypotheses 4a, 4b, 4c received empirical support.

Table 4. *Hierarchical Regression Results for Work-related Outcomes*

Variables	Work Engagement		Job Satisfaction		Turnover Intention	
	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
<i>Control Variables</i>						
Gender	-.05	-.04	-.02	.00	.00	-0.02
Age	.09	.09	.01	.01	.01	0.01
Education	-.03	-.04	-.10*	-.10*	.10*	0.11**
Rank	-.03	-.03	.07	.07	-.07	-.07
Tenure	.02	.03	-.04	-.03	.00	-.01
Volunteer	-.33***	-.32***	-.29***	-.28***	.27***	.25***
Vaccinated	.06	.07	.09*	.10*	-.06	-.08
<i>Main Predictor</i>						
FCV-19		-.10*		-.11**		.20***
<i>Overall F</i>	10.69***	10.29***	8.61***	8.58***	7.13***	9.65***
<i>R</i> ²	.11	.12	.09	.11	.08	.12
ΔR^2	.11	.01	.09	.001	.08	.04
ΔF	10.69***	6.71*	8.61***	7.64**	7.13***	25.18***

Note. N = 591. Standardized coefficients are reported. FCV-19 = Fear of COVID-19.

Supplemental Analyses

Interested in the downstream implications of job resources in work-related outcomes, this study further analyzed the indirect effects of job resources on outcome variables via fear of

COVID-19 using bias-corrected bootstrapping with 20,000 repetitions in Mplus 8 (Muthén & Muthén, 2017). The results are summarized in Table 5. As shown, the indirect effects of self-efficacy on work engagement (estimate = .038, 95% CI = [.004, .105]), job satisfaction (estimate = .026, 95% CI = [.002, .077]) and turnover intention (estimate = -.054, 95% CI = [-.121, -.008]) were significant. Resilience also had significant indirect effects via fear of COVID-19 of .177 (95% CI = [.018, .575]) for work engagement, .122 (95% CI = [.018, .373]) for job satisfaction, and -.255 (95% CI = [-.663, -.073]) for turnover intention. Moreover, the indirect effects of POS were significant for work engagement (estimate = .024, 95% CI = [.002, .066]), job satisfaction (estimate = .016, 95% CI = [.002, .048]) and turnover intention (estimate = -.034, 95% CI = [-.077, -.006]). However, the indirect effects of PSM on three work-related outcomes through fear of COVID-19 were not statistically significant.

Table 5. *Supplemental analyses: Results of Indirect Path Coefficients*

Indirect paths	Indirect effects	
	Estimate	95% CI
Self-efficacy → Fear of COVID-19 → Work engagement	.038	[.004, .105]
Self-efficacy → Fear of COVID-19 → Job satisfaction	.026	[.002, .077]
Self-efficacy → Fear of COVID-19 → Turnover intention	-.054	[-.121, -.008]
Resilience → Fear of COVID-19 → Work engagement	.177	[.018, .575]
Resilience → Fear of COVID-19 → Job satisfaction	.122	[.018, .373]
Resilience → Fear of COVID-19 → Turnover intention	-.255	[-.663, -.073]
PSM → Fear of COVID-19 → Work engagement	-.022	[-.08, .013]
PSM → Fear of COVID-19 → Job satisfaction	-.015	[-.057, .009]
PSM → Fear of COVID-19 → Turnover intention	.031	[-.025, .096]
POS → Fear of COVID-19 → Work engagement	.024	[.002, .066]
POS → Fear of COVID-19 → Job satisfaction	.016	[.002, .048]
POS → Fear of COVID-19 → Turnover intention	-.034	[-.077, -.006]

Discussion

This exploratory study investigated the correlates of fear of COVID-19 among Chinese frontline customs officers. The results revealed that customs workers on the frontline displayed a high level of fear of COVID-19, which was negatively related to their work engagement and job satisfaction and positively influenced their turnover intention. Meanwhile, positive personal resources, including self-efficacy and resilience and organizational resources acted as protective factors against fear of COVID-19, while PSM was not associated with it. Furthermore, there was a substitution interaction of self-efficacy and resilience in affecting customs officers' fear. Supplementary analyses suggested the self-efficacy, resilience, and POS have a further impact on work-related outcomes. The theoretical and practical implications are discussed below.

Theoretical Implications

The current study is among the early attempts to understand PA phenomena during COVID-19 at the individual psychological level. Extant PA literature on COVID-19 has tended to center on governance issues at the macro level, such as evidence-based management (Yang, 2020), policymaking (Mei, 2020), crisis response and coordination (Li et al., 2020; Yan et al., 2020). There is no denying that governments' administrative ability in response to the crisis and bounding back from the adversity dramatically determines whether a country will successfully deal with the pandemic (van der Wal, 2020). But the ability of governance relies heavily on millions of public employees, especially those working on the frontline, on whom COVID-19 has posited unavoidable challenges (Schuster et al., 2020). Thus, the findings

from this study contribute to an in-depth understanding of frontline civil servants' attitudes and behaviours and provide specific managerial advice for public managers facing the challenge of coping and containing the virus.

In this study, customs officers presented an average scale score of 16.26 ($SD = 6.67$) for fear of COVID-19. Though there is no study concerning the same occupation for comparison, the surveyed customs officers' fear of COVID-19 was higher than that of the general male population (16.11) in China (Chi et al., 2021) and the general public in New Zealand (14.14) and France (15.82) (Lin et al., 2021), as current COVID-19 literature demonstrated. This is to be expected, as customs officers were under higher potential to get infected. The findings of this study extend the nomological network of fear of COVID-19 to the PA context by examining its correlates. Furthermore, in the sense that customs officers were delivering public service despite fear, this study also heeds the call and makes timely contributions to the study of emotions in the public service context (Guy & Newman, 2004; Hsieh, Yang, et al., 2012).

Fear of COVID-19 among frontline customs officers is particularly worrying because this research further highlights its association with a reduction in work engagement and job satisfaction and an increase in turnover intention. This confirms prior studies and provides supportive evidence for the destructive impacts of COVID-19 associated fear or other negative emotions in the workplace (Chen & Eyoun, 2021; Crawford et al., 2010; Khattak et al., 2021; Labrague & De Los Santos, 2021; May et al., 2004). It also supports the corollary of the JD-R model by highlighting the role of negative emotions in shaping individuals' responses to job demands in the COVID-19 setting. In this regard, more research can be

conducted to examine the impacts of fear on other important workplace attitudes and behaviors. Further, as a negative emotional state, fear might even spill over to the family domain and forbid public servants from functioning as normal family members.

This study identified several types of personal and organizational resources as protective factors against fear of COVID-19. For personal resources, domain-specific self-efficacy, namely anti-pandemic self-efficacy, has been discussed and shown exerting an influential role in the process of combating COVID-19, as the more efficacious individuals experienced less fear. Likewise, resilient customs officers were likely to trigger a lower level of fear. In terms of organizational resources, as expected, a higher level of perceived organizational support was linked with decreased fear. Supplementary analyses further extended the importance of resources variables by indicating their indirect implications on workplace outcomes. Aligned with previous research (Bidzan et al., 2020; Farr-Wharton et al., 2016; Mubarak et al., 2021), these findings provide important information on the antecedents of fear of COVID-19 and confirm the general proposition of the JD-R model that organizational and psychological resources help to deal with job demands (Bakker & Demerouti, 2007; Xanthopoulou et al., 2009), even in extreme cases such as dealing with the life-threatening virus.

The PsyCap literature suggests that different dimensions of psychological capital should interact to form a higher-order construct (Luthans, Avolio, et al., 2007). Because of the research context, we chose to examine the interaction effect of self-efficacy and resilience and found a significant substitution effect between these two on fear of COVID-19. The positive effect of self-efficacy on fear of coronavirus was insignificant when there was a high

level of resilience, but for people with lower resilience, self-efficacy was a robust resource to attenuate their fear of COVID-19. These findings add to the PsyCap literature with empirical evidence about the relations between resilience and efficacy. Moreover, psychological capital has merely been tested among public sector employees (Firestone & Anngela-Cole, 2016). As the results demonstrated, more studies can be developed to examine the role of psychological capital in PA context, as well as its other components (i.e., optimism and hope).

Surprisingly, this study may ease the assumption that customs employees with PSM are fearless in the provision of public service during hazardous situations, as regression result shows that PSM was not related to fear of COVID-19. Therefore, this study contends that it is not that PSM would reduce fear. On the contrary, it is supposed that the nature of PSM is to provide meaningful public service even in fearful moods of the pandemic. This perspective echoes the meaning of the self-sacrifice dimension in PSM (Kim et al., 2013; Perry, 1996; Scott & Pandey, 2016). That is, frontline public servants put service duty before themselves and forgo tangible personal rewards for the good of society, even risking their personal life (Kim et al., 2013; Perry, 1996). This further illustrates the nature of PSM in the context of COVID-19.

Practical Implications

This study also offers critical implications for public managers to maintain a highly engaged and effective workforce. First and foremost, the results serve as a cautionary note for public managers in that they should not assume frontline employees as fearless people when facing

the coronavirus. Rather, they should pay close attention to the psychological conditions of frontline employees and understand how they perceive the environment and potential risks. On this basis, evidence-based measures could be further implemented by public managers in terms of selection, interventions, and general organizational support.

To ensure high-quality and effective public service delivery, frontline work selection should be made through voluntary applications at first and focus especially on employees with high self-efficacy or resilience. As the results indicate, there is a substitution interaction between self-efficacy and resilience on fear. Employees with better resilience should be selected at first if the resource is too limited to guarantee follow-up self-efficacy interventions, or measures such as trainings on protective skills and crisis-coping strategies, sharing of effective experience, recognition, positive feedback, and encouragements can be implemented to activate staff's anti-pandemic confidence (Bandura, 1977; Luthans, Youssef-Morgan, et al., 2007). With more knowledge, experience, and skills, the customs officers may be more anticipatory and prepared and feel less fear.

Meanwhile, public managers should provide more organizational supportive resources to ameliorate employees' sense of uneasiness. Effective organizational support should incorporate both emotional and instrumental aspects. Frontline employees should be vaccinated as long as it is safe and suited to the physical condition of individual employees. Public managers should provide anti-pandemic materials such as personal protective equipment and infection control suppliers, as well as ensure a safe working environment (Labrague & De Los Santos, 2021). They should also offer shorter shift hours and adequate breaks for employees to take care of themselves and deal with family care issues. The above

measures may eventually promote customs staff's work engagement, job satisfaction, and retention by addressing their fear.

Limitations and Future Research

As one of the early efforts to probe the correlates of fear of COVID-19, this study should be considered in light of its limitations. First, the sample was only customs officers from China so it might limit the generalizability of the results among customs officers in other areas or other professions. Although the mechanisms discussed in this study are generalizable, future research may replicate this study in other contexts and professional groups. Second, this study relied on a cross-sectional design, which does not permit a causal claim. Further studies could use longitudinal or experimental designs. Meanwhile, future studies could pay close attention to the development of fear and include more variables that affect its development, as well as its other possible outcomes. Third, the study was conducted in the Chinese context where the pandemic has been effectively contained. This may constitute one of its contributions to providing insightful implications for other countries. But it may also limit the variability of fear. In addition, China is characterized by collectivist cultures and COVID-19 prevention work relies on collective efforts. For more individualistic countries, the development and correlated variables of fear of COVID-19 may be different. Future studies could explore these issues in other cultural settings. Moreover, as this present study focused on individual-level variables, it is limited to examine team-level dynamics. For instance, it would be worthwhile to investigate whether there is fear contamination among team members or whether factors regarding leadership would exert an influence on customs

officers' perceptions (Qin et al., 2021). Team-level analysis should be conducted by future studies should further understand the dynamics and correlates of fear of COVID-19.

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