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Public Employees' whistleblowing intention: Explanation by an adapted theory of planned behavior

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Abstract

Public employees' whistleblowing is an effective anti-corruption means because they can provide rigorous evidence of wrongdoing in public organizations. However, whistleblowing may cause risks to the individuals and their organization, which discourage them from reporting. While the topic has been understudied, a few studies have adopted the theory of planned behavior (TPB) from psychology to gain insights into whistleblowing. However, these studies have overlooked the unique characteristics of the public sector and the contextual factors surrounding whistleblowing. Our research aims to fill this gap by incorporating these missing elements into the theoretical framework and thus developing an adapted TPB. Using survey data from Taiwan, this study provides empirical evidence to support the adapted TPB in explaining the intention of public employees to blow the whistle.

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Chinese Abstract

由公務人員本身來舉報不法事件，被視為是一種相當有效的反貪腐手段，因為他們通常能夠提供這些不當行為的有力證據。然而，舉報不法事件卻可能會對公務人員個人或其單位帶來風險，也因此往往成為其最終選擇沉默的主要原因。雖然過去已有一些研究採取「計劃行為理論 (TPB)」來探討此一主題，但這些研究卻沒有考量公部門獨有的特性及環境系絡對舉報行為的影響。本研究希望能夠整合這些過去被遺漏的要素，並且發展出更適合公部門的理論框架。本研究使用臺灣文官調查 (TGBS) 所蒐集的資料，進行實證分析並用更完整的 TPB 模型來解釋公職人員舉報不法的行為意圖。.

1 | INTRODUCTION

Whistleblowing refers to the activity of disclosing alleged corruption or wrongdoing committed by a member or a group of members within an organization (Prysmakova & Evans, 2020). Illegal or unethical activities such as theft, embezzlement, abuse of power, discrimination, harassment, and violation of regulations are likely to be subjects of whistleblowing. In public administration, it is important to encourage public employees to blow the whistle when they witness corruption. Although public bureaucracy is overseen by external powers such as legislative institutions, law enforcement, and social media, many times it is only the insiders who have a chance to witness corruption and provide rigorous evidence of wrongdoing in public organizations. Whistleblowing may cause a bad reputation for organizations in the short run. In the long run, however, it maintains integrity and brings positive impacts on organizations, the government, and society at large.

Recognizing the importance of whistleblowing, previous studies have examined how personal, organizational, and environmental factors encourage whistleblowing decisions. In particular, they have investigated the influence of public service motivation (PSM; e.g., Brewer & Selden, 1998; Caillier, 2015, 2017; Cho & Song, 2015; Jeon, 2017; Prysmakova & Evans, 2020; Wright et al., 2016), leadership styles (Caillier, 2015; Caillier & Sa, 2017; Hassen et al., 2014; Wright et al., 2016; Ugaddan & Park, 2019), supervisor support and trust (Caillier, 2012; Lavena, 2016; Taylor, 2018), colleague relationship and support (Chang et al., 2017), legal protection and possible retaliation (Caillier, 2012; Chang et al., 2017; Chordiya et al., 2020; Coggburn et al., 2009; Gertz, 2008), organizational structure and culture (Previtali & Cerchiello, 2018; Rothwell & Baldwin, 2006), and seriousness of wrongdoing (Caillier, 2017; Somers & Casal, 2011). While they have provided several different perspectives to understand whistleblowing intention and behavior among public employees, there has not been a cohesive theory to explain the phenomenon (Kang, 2023), except for the adoption of the theory of planned behavior (TPB) from psychology that focuses on the individual-level factors of whistleblowing (e.g., Lee et al., 2021; Park & Blenkinsopp, 2009; Zakaria et al., 2016).

Nevertheless, the utilization of the TPB framework in examining whistleblowing in the public sector overlooks two critical contextual factors: the distinct attributes of the public sector and the inherent risks associated with whistleblowing. Consequently, a more thorough comprehension of the subject is absent. Built on the existing literature, this study attempts to advance the theory by expanding the TPB framework and making it more comprehensive. A unique dataset collected from public employees in Taiwan in 2016 ($n = 973$) is used to empirically examine the adapted TPB framework.

The following sections provide detailed theoretical justification for the adapted TPB framework and its hypotheses. Then, the data and method for hypothesis testing will be reported, followed by discussion, conclusion and implication, and future research suggestions at the end.

2 | THE TPB AND ITS APPLICATIONS

Developed by social psychologist Icek Ajzen (1985, 1991), the TPB is a framework to explain and predict a person's intention and behavior. Behavior is defined as an observable response to a given situation, while behavioral intention is a person's readiness to perform a given behavior. The theory consists of three core components: attitude, subjective norms, and behavioral control. Attitude toward a behavior, also termed as "personal evaluation of a behavior" in Ajzen (1991), refers to "the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question" (Ajzen, 1991, p. 188). In the empirical studies applying Ajzen's TPB, attitude toward a behavior is measured by questions asking the respondents how salient and important the consequences of the behavior would be if they perform the behavior (e.g., Lee et al., 2021; Park & Blenkinsopp, 2009; Zakaria et al., 2016). Subjective norms represent the belief about whether a person's significant others—including family, friends, colleagues, and supervisors—approve or disapprove of the person performing the behavior. Lastly, perceived behavioral control refers to a person's perception of risks or the difficulty of performing the behavior. Although perceived behavioral control may vary across situations and behaviors (Ajzen, 1991), its core assumption is that people perform or intend to perform specific behaviors based on calculations of benefits, risks, and self-efficacy of doing so.

The TPB posits that the three components work together to shape a person's behavioral intentions while the three components are correlated. It also proposes that a person's behavior is determined by their intentions and behavioral control. Figure 1 briefly exhibits the framework of TPB.

In recent years, researchers have utilized TPB to explore individual intentions and behaviors in various topics of public administration. These topics include organizational change (Ahmad et al., 2023; Hassan et al., 2021), use of e-government services (Ozkan & Kanat, 2011), online civic participation (van den Berg et al., 2024), and use of performance information (Kroll, 2015). Notably, all the mentioned studies adapted the TPB framework to the context of their research areas. For instance, Hassan et al. (2021) and Ahmad et al. (2023) examine public employees' intention to support organizational change. Although these two studies focus on different explanatory variables, namely PSM and organizational culture respectively, to explain change-supportive intention in public organizations, both take the three components of TPB as mediators in their theoretical framework. In other words, they propose that the effect of the explanatory variable, either PSM or organizational culture, on change-supportive intention is mediated by change-related attitudes, change-related subjective norms, and change-related perceived behavioral control. Kroll (2015) examines the use of performance information by public managers and adapts the TPB framework in a unique way. The researcher makes two modifications to the framework. First, Kroll (2015) only includes attitudes and subjective norms as determinants of intentions to use performance information, while excluding perceived
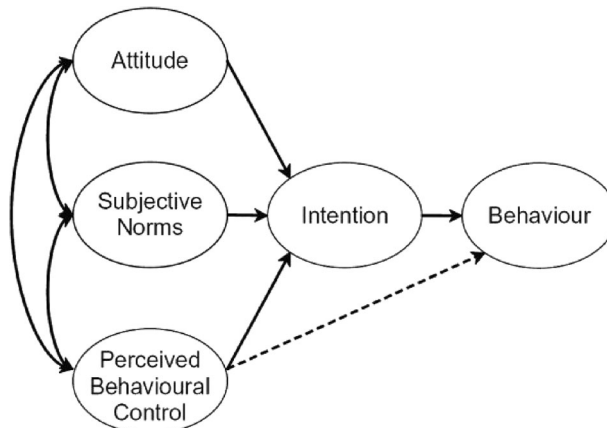
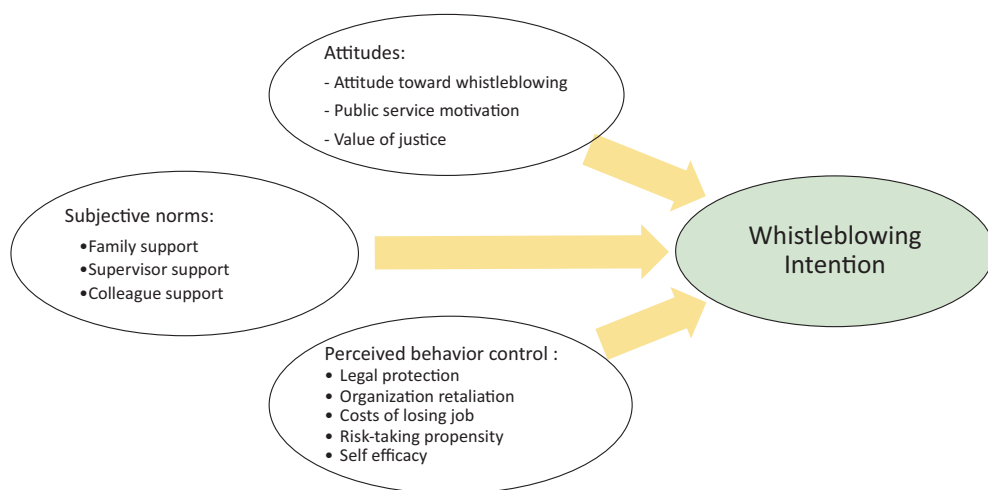**FIGURE 1** The theory of planned behavior (Ajzen, 1991).

behavioral control. Second, Kroll (2015) introduces an indirect influence of the intention on the behavior of performance information use through information usability, as they argue that poor information usability may substantially limit information use, and thus information usability is treated as a proxy for behavioral control. Additionally, Ozkan and Kanat (2011) address the question of what psychological factors would influence citizens' intention to use e-government services while they adopt the framework of TPB with three components (Ajzen, 1991). Nevertheless, they integrate a set of salient beliefs—including perceived usefulness of e-government, perceived ease of use, trust in Internet, trust in government, computer skills, and access to computers—as predictors of attitudes and perceived behavioral control in their framework. The empirical findings of the cited articles have validated the efficacy of the adapted TPB frameworks in public administration research.

TPB has been also adopted to explain public employees' whistleblowing intention in several studies (Lazim et al., 2022; Lee et al., 2021; Park & Blenkinsopp, 2009; Rustiarini & Sunarsih, 2017; Zakaria et al., 2016, 2020). Because whistleblowing is performed based on a highly complex psychological process, TPB is suitable for explaining whistleblowing intentions (Park & Blenkinsopp, 2009). All the studies mentioned above duplicate Ajzen's (1991) theoretical framework without modification. Park and Blenkinsopp (2009) and Zakaria et al. (2016) focus on internal and external whistleblowing intention and use survey data collected from Korea and Malaysia, respectively, to investigate how attitude, subjective norms, and behavioral control determine whistleblowing intention among police officers. Zakaria with other four coauthors apply the same TPB framework again in their 2020 article to explain Indonesian public officials' internal and external whistleblowing intentions (Zakaria et al., 2020). Rustiarini and Sunarsih (2017) utilize the same theoretical framework to investigate Indonesian government auditors' whistleblowing intention and behavior. More recent studies by Lee et al. (2021) and Lazim et al. (2022) employ the TPB framework to examine both intention and the behavior of whistleblowing among public sector employees, with the former using the Merit Principles Survey data from U.S. federal employees, while the later using self-administrated survey data from Malaysian public employees.

It is plausible to apply TPB when explaining whistleblowing intention and behavior among public employees. All six studies mentioned above show empirical evidence that whistleblowing intention to a certain extent is determined by attitudes toward whistleblowing, subjective norms, and perceived behavioral control, which justifies the adoption of TPB in the topic of public employees' whistleblowing. Nevertheless, the framework has failed to consider two crucial contextual factors: the specific characteristics of the public sector and the inherent risks associated with whistleblowing. This article seeks to address this limitation by incorporating these overlooked elements into the theoretical framework to provide a more comprehensive understanding of whistleblowing intention among public employees.

3 | ADAPTED FRAMEWORK OF TPB

Given that the TPB was originally developed outside of public administration research and was not specifically designed for public sector applications, the current framework may ignore public sector characteristics and demonstrate shortcomings in explaining the intentions and behaviors of public sector employees. Public administration scholars, on the other hand, have highlighted the stark differences between public employees and those who choose the private sector, particularly in terms of the core values they uphold (Perry & Wise, 1990). They suggest that in order to achieve and create democratic bureaucracies, public employees tend to develop internal accountability mechanisms unique to the public sector (Jos, 1991; Stazyk & Davis, 2015). Public employees are generally more responsive and sensitive to social issues (Perry & Wise, 1990). They are often more motivated to create positive social impact than their private sector counterparts (Bullock et al., 2015). Therefore, in our adapted TPB as shown in Figure 2, the component of attitudes is expanded. We incorporate PSM and value of justice as additional indicators of attitudes as they represent public employees' characteristics (Brewer & Selden, 1998), while maintaining attitude

FIGURE 2 The adapted theory of planned behavior. [Color figure can be viewed at wileyonlinelibrary.com]

toward whistleblowing as did previous whistleblowing studies (Lazim et al., 2022; Lee et al., 2021; Park & Blenkinsopp, 2009; Rustiarini & Sunarsih, 2017; Zakaria et al., 2016, 2020).

Whistleblowing can be risky as it may result in reprisals against the employees involved. Instead of being viewed as beneficial to the organization, whistleblowers are often labeled as troublemakers (Dozier & Miceli, 1985; Rehg et al., 2008). According to research conducted by Miceli et al. (1999), 17%–38% of whistleblowers in the American federal government have experienced retaliation, such as demotion or lay-offs. Therefore, it is important to carefully consider perceived behavioral control. While previous studies have examined perceived legal protection for whistleblowers, perceived organization retaliation, and self-efficacy of dealing with situations as indicators of perceived behavioral control (e.g., Lee et al., 2021; Park & Blenkinsopp, 2009), this study introduces two additional variables to the framework: perceived costs of job loss and risk-taking propensity.

In the adapted TPB framework, subjective norms still represent individuals' evaluations of the extent to which their significant others, such as family, colleagues, and supervisors, might approve of them reporting wrongdoing at their workplace, which is the same as previous whistleblowing studies using TPB. The overall theoretical framework is justified in detail below.

3.1 | Attitudes

TPB suggests that an individual's attitude determines their intention to act (Ajzen, 1991). Public employees will not be willing to report corruption in their organization unless they believe it is right or that they have an ethical obligation to do so. Attitudes toward whistleblowing reflect individuals' intrinsic beliefs on the issue and can directly drive individuals to act when appropriate.

While attitude toward whistleblowing reflects public employees' beliefs regarding the issue of whistleblowing, PSM, and value of justice mirror their general morality and are thus relevant to whistleblowing intention and behavior. In the public sector, it is frequently argued that PSM is positively linked to ethical behaviors, including whistleblowing (e.g., Brewer & Selden, 1998; Caillier, 2015, 2017; Cho & Song, 2015; Jeon, 2017; Prysmakova & Evans, 2020; Wright et al., 2016). The basic rationale for this relationship is that PSM emphasizes the public interest and self-sacrifice, fostering the desire and courage for individuals to disclose illegal or unethical behaviors in public organizations (Choi, 2004; Homberg et al., 2019; Prysmakova & Evans, 2020; Wright et al., 2016). De (2008) defines

the whistleblower "as a concerned citizen, totally or predominantly motivated by notions of public interest" (p. 866). Whistleblowing is also an act of justice and evidence of standing up for righteousness (Gakhar & Mulla, 2021). A higher value of justice would impel public employees to fight against corruption and blow the whistle. Therefore, we propose that public employees with a positive attitude toward whistleblowing, a higher level of PSM, and/or a stronger value of justice will display a greater level of whistleblowing intention.

3.2 | Perceived behavioral control

Whistleblowing involves self-sacrifice and great risk for public employees because they could be retaliated against after taking action. Even though democratic governments generally provide legal protections for potential whistleblowers, retaliation against whistleblowers, such as demotion, being laid off, or other types of financial ramifications are still inevitable (Cassematis & Wortley, 2013; Miceli & Near, 1992; Smith, 2010). Hence, the existence of whistleblower protection laws cannot simply translate into employees' confidence following the reporting of misconduct. Previous studies have indicated that public employees are more likely to blow the whistle if they perceive that laws and the organization will protect them from retaliation (Caillier, 2012; Cho & Song, 2015; Chordiya et al., 2020; Park & Blenkinsopp, 2009; Somers & Casal, 2011). Therefore, public employees must assess the possible risks, legal protection, and their ability to deal with the risks. In the framework of TPB, this type of factors is labeled as perceived behavioral control. Previous studies applying TPB have included perceived legal protection, perceived organizational retaliation, and self-efficacy in their empirical investigations (Lee et al., 2021; Park & Blenkinsopp, 2009; Zakaria et al., 2016). We propose that prospective whistleblowers would also assess the costs of possibly losing their job position (including being laid off and demotion) before they decide to report corruption in their organization. They would consider multiple job-related factors such as salaries, promotion opportunities, organizational climate, physical facilities, and satisfaction with the leadership in the current position. A construct that reflects all of these job-related factors is job satisfaction. When public employees are highly satisfied with their current jobs, they are more likely to worry about the possibility of losing their jobs. Hence, their perceived costs of losing job will be higher if they enjoy a greater level of job satisfaction. On the other hand, blowing the whistle can result in negative consequences within the organization, such as demotion or job termination. Previous research has documented an increasing occurrence of federal employees facing job loss and demotion as a result of their grievances and whistleblowing activities (Robinson et al., 2014). Hence, the potential risk of job loss is highly associated with whistleblowing. Therefore, we take job satisfaction as a proxy of the potential costs of losing a job position when examining whistleblowing in this study.

In contrast to actions such as supporting organizational change, using performance information, or using e-government services that pose low personal risks, whistleblowing exposes public employees to significant risks, as they may face reprisals for their actions. Thus, we consider risk-taking propensity in the framework. Risk-taking propensity as a personality trait represents a person's inclination toward risk-taking or risk-avoiding behavior across various contexts. It may influence an individual's ethical behavior when the behavior concerns some levels of risk (Vinson et al., 2020), although its effect on whistleblowing has not been empirically examined in the existing literature. For instance, both corruption and whistleblowing behaviors bear a high level of risk. Public officials are more likely to commit corruption if they have a high level of risk-taking propensity, as well as a low level of morality, and public employees are more likely to blow the whistle if they have a high level of risk-taking propensity and a high level of morality.

In sum, we hypothesize that public employees who perceive stronger legal protection for whistleblowers, greater levels of risk-taking propensity, and/or higher levels of self-efficacy will be more likely to have the intention to blow the whistle. Conversely, public employees who perceive stronger organizational retaliation against whistleblowers and/or greater job satisfaction will be less likely to have the intention to blow the whistle.

3.3 | Subjective norms

Using the TPB, Park and Blenkinsopp (2009) conceptualized "subjective norms" as the normative beliefs about whether the individual's important referent persons—including supervisors, co-workers, and family—would approve or disapprove of the individual's decision to report misconduct in an organization. Subjective norms are different from the general support of supervisors and colleagues, although the latter has been previously considered in the existing literature. While linking the general support of supervisors and colleagues to whistleblowing, previous studies have provided mixed evidence. Some scholars show that employees are more willing to report wrongdoings with stronger supervisor and coworker support (e.g., Caillier & Sa, 2017; Chang et al., 2017; Taylor, 2018; Wright et al., 2016). Some others suggest that employees may avoid reporting wrongdoings if they have a close relationship with their supervisor or colleagues (e.g., King, 1997; Lavena, 2016; Miller & Thomas, 2005; Wang et al., 2018). The term "subjective norms" in the framework of TPB particularly specifies the perceived approval or disapproval of a particular behavior. In the case of whistleblowing, supervisors being supportive at work does not necessarily mean that the supervisors will support the whistleblowing decision of employees as well, since this may harm the interests of the leaders and the entire organization. Likewise, having a close and supportive relationship with colleagues or family members does not necessarily mean that reporting corruption will be supported by them.

Taking account of subjective norms in explaining whistleblowing intention is also in harmony with the goal-framing theory, which suggests that individuals usually pursue three types of overarching goals, namely the hedonic goal, the gain goal, and the normative goal (Lindenberg & Foss, 2011). The normative goal refers to the behavioral pattern in which individuals tend to behave as expected in a given situation and act appropriately according to the norms of the community. Therefore, we propose that public employees will display a greater level of whistleblowing intention if they perceive that their family, supervisors, and/or colleagues support their whistleblowing.

The adapted framework of TPB potentially makes two major theoretical contributions to the literature. First, it considers the public sector context and thus takes account of PSM and value of justice to explore the mechanisms of whistleblowing intention. Second, it extends the framework to incorporate some new variables regarding the risking action of whistleblowing, including job satisfaction and risk-taking propensity that have not been investigated in prior whistleblowing studies.

4 | METHODS

4.1 | The context of data source

This study uses the 2016 Taiwan Government Bureaucrat Survey (TGBS) dataset to test the adapted framework of TPB. It is a necessary source with which to understand the general practices of whistleblowing in Taiwan.

First, there is no existing comprehensive whistleblowing protection law in Taiwan. However, the Agency for Against Corruption (AAC), an independent central agency, plays an important role in combating corruption. The AAC oversees anti-corruption policy design, supervises local civil service ethics offices within each department, and investigates corruption cases nationwide. Second, public employees in Taiwan have two major channels to report corruption. They can directly report to the AAC, or they can go to the civil service ethics office within their agencies. The local ethics offices are responsible for assisting in implementing anticorruption programs, investigating corruption cases, and providing anticorruption education. In addition, whistleblowers can also report corruption to the Ministry of Justice Investigation Bureau or the Legislators' office as supplemental channels as well.

Third, the Taiwan government at all levels actively provides consistent anti-corruption education for its public employees. New public employees must participate in training programs hosted by the National Academy of Civil Service, in which they learn the code of ethics and how to identify corruption cases. Employees also receive periodic

training sessions from the civil service ethics office in their agencies at different stages of their professional careers. During these training processes, employees are reminded of the various channels for whistleblowing.

4.2 | Data collection

The TGBS survey was administered by the research team at the Department of Public Administration, National Cheng-Chi University of Taiwan. The TGBS survey collected information on job-related experiences and attitudes from Taiwan government servants. Its targeted population was all civil servants in Taiwan, including employees working for central and local governments. The survey team obtained the directory of all civil servants released by the Central Office of Personnel Administration. Police force, military force, courts, state-owned enterprises, public schools, and public hospitals were not included in this list.

To ensure sample representation, the research team applied a stratified sampling approach based on position levels and gender proportion, resulting in a total number of 1998 public employees invited to participate in the survey. During the survey process, trained research assistants met each of the respondents in person as scheduled in advance, delivered the questionnaire, waited aside until the respondent completed the questionnaire, and then brought it back. Finally, 1008 responses were successfully collected, yielding a response rate of 50.5%. After excluding missing data, the final sample for this study consists of 973 responses from public employees. Table 1 reports the demographic distribution of the final sample, showing that the sample has a high degree of representation of Taiwan public employees.

TABLE 1 Respondents' demographics ($n = 973$).

	Number of respondents			Percent
Gender				
Male	519			53.3
Female	454			46.7
Age				
23–29	209			21.5
30–39	440			45.2
40–49	191			19.6
50–59	123			12.6
60–64	10			1.0
Education				
High school and below	99			10.2
College degree	554			56.9
Master's degree	308			31.7
PhD degree	12			1.2
Supervisory status				
Supervisor	67			6.9
Not supervisor	906			93.1
	Mean	**SD**	**Min**	**Max**
Year of work experience	7.9	8.2	1	36
Age	37.2	9.1	23	64
Pay grade	5.4	2.0	1	11

4.3 | Measurement

The measurement of each of the variables in the model is presented in Table A1. The outcome variable of whistleblowing intention is measured by the survey question, "When you witness corruption in your organization, how likely are you to report it?" The response options range from "unwilling to report at all" with a value 0 to "absolutely to report" with a value 10. Figure 3 shows the frequency distribution of whistleblowing intention. While the
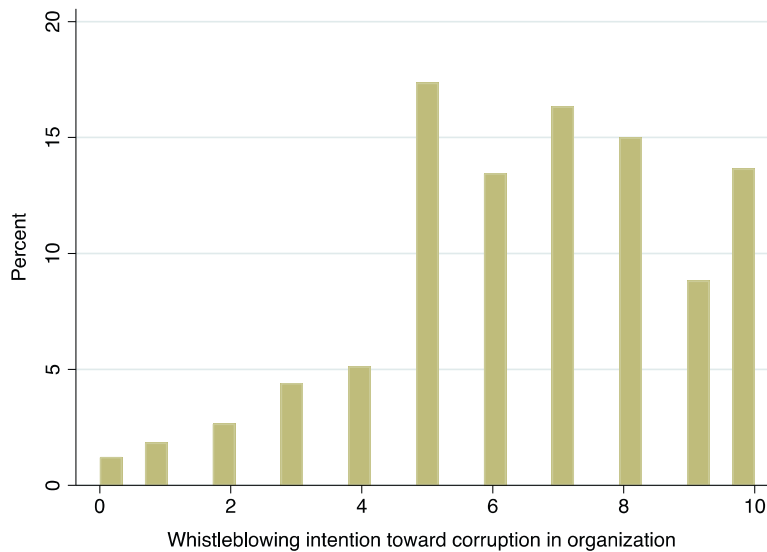

FIGURE 3 Distribution of whistleblowing intention. [Color figure can be viewed at wileyonlinelibrary.com]

TABLE 2 Descriptive statistics of variables ($n = 973$).

	Mean	SD	Min	Max
Outcome variable				
Whistleblowing intention	6.59	2.35	0	10
Attitudes				
Attitude toward whistleblowing	4.44	0.78	1	6
Public service motivation	4.64	0.61	1	6
Value of justice	3.37	0.97	1	6
Perceived behavioral control				
Perceived legal protection	2.64	1.19	1	6
Perceived organizational retaliation	4.30	1.02	1	6
Job satisfaction	3.79	0.84	1	6
Risk-taking propensity	4.91	1.99	0	10
Self-efficacy	4.50	0.66	2	6
Subjective norms				
Family support	3.63	1.03	1	6
Colleague support	3.55	0.99	1	6
Supervisor support	3.38	1.07	1	6

most frequent levels are 5, 7, and 8, with 15% or higher frequencies among the public employees in Taiwan, the average whistleblowing intention level is 6.6, with a standard deviation of 2.4 (see Table 2).

As a major explanatory variable, attitude toward whistleblowing is measured by three survey items: "I think whistleblowing can protect public interest," "I think it is public employees' responsibility to report wrongdoing," and "I think it is ethical to report wrongdoing," in a 1–6 scale, whereas 1 is "strong disagree" and 6 is "strong agree." attitude toward whistleblowing takes the average values of these three survey items, with standardized loadings between 0.81 and 0.83, and a Cronbach's Alpha of 0.88.

We utilize the survey instruments developed by Kim (2009, 2011), which consist of 12 items, to measure PSM. Kim's studies provide a solid rational base and empirical support for the PSM construct based on data collected from public employees in South Korea. Given that Taiwan shares a similar democratic system and East-Asian culture with South Korea, it is appropriate to employ the same measurement approach. By conducting exploratory factor analyses, we further identify 9 survey items with standardized loadings higher than 0.70 to measure each of the four dimensions of PSM.

The first dimension, attraction to public policymaking, is measured by two survey items: "I am interested in public policymaking that produces interest to the country and the society" and "I feel satisfied seeing that people benefit from public programs." Notably, the survey used all positive statements instead of the negative statements that were used in Kim's (2009) study. The second dimension, commitment to the public interest, is measured by two survey items: "Meaningful public service is very important to me" and "I would prefer seeing that the government does what is best for the whole community, even if it harms my interest." The third dimension, compassion, is measured by two items: "It is difficult for me to contain my feelings when I see people in distress" and "I feel sad for the plight of the underprivileged." The final dimension, self-sacrifice, is measured by three items: "Making a difference in society means more to me than my personal achievements," "I am prepared to make enormous sacrifices for the good of society even if I lose an opportunity for promotion," and "I believe in putting duty before the self." The overall PSM takes the average values of the 9 survey items above, with standardized loadings between 0.53 and 0.75 in the confirmatory factor analysis model, and a Cronbach's Alpha of 0.88.

Value of justice is measured by five survey items in a 1–6 scale: "I think the world is a just and fair place," "Things will happen to you, good or bad, according to how you behave," "I believe equality is the norm," "I believe evil does not oppress the righteous," and "I believe those who experienced unfairness will eventually receive justice." The standardized loadings are between 0.64 and 0.86, and the Cronbach's Alpha for the variable is 0.87.

Perceived legal protection is measured by a single survey item: "I think Taiwan has effective legal protection for whistleblowers." Perceived organizational retaliation is measured by the following item: "I think whistleblowing will cause retaliation from the organization." Job satisfaction takes the average value of the following six survey items: "I am satisfied with my current job in general," "I am satisfied with my current salary in general," "I am satisfied with my promotion opportunities in general," "I am satisfied with the leadership in general," "I am satisfied with the organizational climate in general," and "I am satisfied with the physical facilities in my organization." The standardized loadings are between 0.57 and 0.70, and the Cronbach's alpha is 0.81. Risk-taking propensity is measured by three survey questions: "What is the extent to which you are willing to take risks in finance?" "What is the extent to which you are willing to take risks in your career?" and "What is the extent to which you are willing to take risks of major life changes?" All three questions use a 1–10 scale, where 1 is "unwilling at all" and 10 represents "willing to take the risks." The Cronbach's Alpha is 0.76. Self-efficacy is measured by four survey items in a 1–6 scale: "I can easily and effectively communicate with others," "I can properly utilize interpersonal and interorganizational networks to cope with challenges in the workplace," "I can manage conflicts using different approaches according to the context," and "I can turn conflicts into constructive outcomes." The Cronbach's Alpha is 0.89, and the standardized loadings are between 0.78 and 0.86.

Family support is measured by the survey item, "My family supports me in reporting wrongdoing found in my organization." To measure supervisor support and colleague support, the survey asks civil servants to assess the extent to which they consider whether "My supervisor supports me in reporting wrongdoing found in my

organization," and "My colleagues support me in reporting wrongdoing in my organization," respectively. Table 2 reports the descriptive statistics of the outcome and explanatory variables.

We tried several control variables in the models, including gender, age, pay grade, education, whether the employee is a manager, and work experience. Only the first three variables show significant effects, and thus other control variables are not included in the final models for the purpose of parsimony. Gender is measured in dichotomous values of 1 for female and 0 for male; age is measured in years; and pay grade reflects public employees' salary levels from 1 to 11, and its squared term is used in the models.

We also performed a VIF test for potential multicollinearity, resulting in the highest VIF below 3, suggesting that multicollinearity is not an issue in the model. Because the outcome variable is measured at the ordinal level from 0 to 10, we performed both ordinary least square (OLS) regressions and the ordered logit model for robustness. As presented in Table 3, the two full models (OLS 3 and Ologit) provide almost the same results of hypotheses testing.

4.4 | Methodological limitations

Before moving on to the findings section, several potential methodological concerns should be noted. The first is about measurement. Due to the constraint on questionnaire length, several variables in the models are measured by single items, including whistleblowing intention, perceived legal protection, perceived organizational retaliation, and three variables of subjective norms. A construct consisting of multiple survey items may provide more rigorous measurement. Second, given the absence of a direct method to assess the potential costs of job loss resulting from whistleblowing, we take job satisfaction as a substitute measure. Future research is expected to create a more robust construct. Third, this study follows previous research (e.g., Chang et al., 2017; Cho & Song, 2015; Park & Blenkinsopp, 2009; Ugaddan & Park, 2019; Zakaria et al., 2016) to focus on whistleblowing intention rather than actual whistleblowing behavior. If data are available, future research may apply this adapted TPB to explore whistleblowing behavior. Fourth, considering the fact that public employees in Taiwan are educated to report corruption, either to the central agency of AAC or local ethics offices as local branches of AAC, we do not differentiate between internal and external channels for whistleblowing. Instead, we use a single survey question to measure whistleblowing intention if the employee witnesses any corruption in their organizations. Fifth, because of the limited data availability, this study only utilizes cross-sectional data from public employees. If panel data becomes available in the future, conducting analyses with such data would likely yield more insightful findings. Finally, the generalizability of the empirical results should be interpreted with caution since the survey data was collected within the East Asian culture. Despite these limitations, the dataset contains a large sample size and a large number of variables, including PSM, value of justice, job satisfaction and risk-taking propensity, as well as demographic variables, and it covers both central and local government employees in Taiwan with low missing values. Hence, the dataset is superior to those used in previous studies (Lazim et al., 2022; Park & Blenkinsopp, 2009; Rustiarini & Sunarsih, 2017; Zakaria et al., 2016, 2020). Table 3 below presents model results of whistleblowing intention.

4.5 | Findings

The initial model (OLS 1) in Table 3 examines the impact of control variables only, explaining 4% of the variation in whistleblowing intention. The second model (OLS 2) includes additional variables such as PSM, value of justice, job satisfaction, and risk-taking propensity, resulting in a substantial increase in explanatory power to 12.5%. This demonstrates the significant contribution of these variables in explaining whistleblowing intention.

The third model (OLS 3) in Table 3 represents the complete model with all explanatory and control variables, accounting for 26% of the variation in whistleblowing intention. When controlling for the effects of all other variables, job satisfaction becomes statistically significant at the 0.05 level, while the significance level of the value of

TABLE 3 Model results of whistleblowing intention.

	OLS 1	OLS2	OLS 3	Ologit
Attitudes				
Attitude to whistleblowing			0.695***	0.715***
			(0.123)	(0.094)
Public service motivation		0.705***	0.432***	0.414***
		(0.157)	(0.144)	(0.117)
Value of justice		0.302***	0.135*	0.091
		(0.086)	(0.079)	(0.069)
Perceived behavior control				
Perceived legal protection			0.025	0.027
			(0.062)	(0.058)
Perceived org. retaliation			−0.102	−0.083
			(0.080)	(0.065)
Job satisfaction		−0.072	−0.202**	−0.208**
		(0.042)	(0.102)	(0.048)
Risk-taking propensity		0.176***	0.131***	0.118***
		(0.042)	(0.037)	(0.031)
Self-efficacy			0.216*	0.219**
			(0.118)	(0.10)
Subjective norms				
Family support			0.282***	0.190**
			(0.110)	(0.091)
Colleague support			0.241*	0.256**
			(0.137)	(0.109)
Supervisor support			0.018	−0.002
			(0.105)	(0.090)
Control variables				
Female	0.610***	0.533***	0.316**	0.264**
	(0.150)	(0.146)	(0.138)	(0.119)
Age (years)	−0.036***	−0.055***	−0.048***	−0.039***
	(0.009)	(0.009)	(0.008)	(0.007)
Pay grade squared	0.014***	0.012***	0.009***	0.008***
	(0.003)	(0.004)	(0.003)	(0.003)
Constant	7.208	3.100	−0.032	(10 cuts omitted)
	(0.315)	(0.694)	(0.798)	
Observations	973	973	973	973
Adjusted R^2	0.039	0.125	0.260	

Note: Standard errors in parentheses (robust standard errors for OLS models).
***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

justice changes from 0.01 to 0.10. All control variables demonstrate a relatively stable influence on whistleblowing intention. The final model (Ologit) in Table 3 displays the results of the ordered logit model, which yields very similar results to OLS 3. To provide a more straightforward interpretation, the full model OLS 3 is used for report, and coefficients are innovatively converted to influence rates (see Table 4).

While a coefficient represents the average change in the dependent variable associated with one measurement unit increase in an independent variable, an influence rate indicates the percentage change in the dependent variable within its value range when the independent variable rises by 100% from the lowest value to the highest value. For instance, the coefficient of PSM is 0.432, suggesting that one level increase of PSM in a 1–6 scale will raise whistleblowing intention by 0.432 levels in a 0–10 scale. When PSM increases 100% from level 1 to level 6 (increased by 5 levels), whistleblowing intention will rise by 2.16 levels ($0.432 \times 5 = 2.16$) in a 0–10 scale, which equals to 21.6% in its value range. Hence, the influence rate of PSM on whistleblowing intention is 21.6%. Another independent variable, risk-taking propensity, is measured in a 0–10 scale. Its coefficient is 0.131, meaning that one level increase of risk-taking propensity will lead to 0.131 levels progress in whistleblowing intention. When risk-taking propensity improves 100% from level 0 to level 10 (increased by 10 levels), whistleblowing intention will rise by 1.31 levels in a 0–10 scale, which equals to 13.1% in its value range. Therefore, the influence rate of risk-taking propensity is 13.1%.

As shown in Table 4, all three variables in the attitudes category demonstrate a significant influence on whistleblowing intention at either the 0.01 or 0.10 significance level. Attitude toward whistleblowing manifests as the strongest predictor with an influence rate of 34.75%. As public employees' attitude toward whistleblowing increases 100%, their intention to blow the whistle will increase by 34.75% on average. The second strongest predictor of whistleblowing intention is PSM, with an influence rate of 21.60%. On average, 100% increase of PSM is associated with 21.6% raise in whistleblowing intention. Value of justice with influence rate of 6.75% shows comparatively weaker impact on whistleblowing intention. When public employees' value of justice improves by 100%, their intention to report corruption increases by 6.8% on average, although the positive effect is merely significant at the 0.1 level.

Among the variables of perceived behavioral control, risk-taking propensity and job satisfaction, as two new variables in the adapted TPB framework, show significant impact on whistleblowing intention with influence rates of 13.1% and negative 10.10%, respectively. One hundred percent increase in risk-taking propensity may create 13.1% growth in whistleblowing intention on average. Public employees who are highly satisfied with their work tend to be unwilling to take the risk of reporting corruption. When their job satisfaction increases by 100%, their whistleblowing intention will decrease by 10.1% on average.

TABLE 4 Influence rates of explanatory variables on whistleblowing intention.

	Measure scale	Coefficient	Infl. Rate (%)	Significance
Attitudes				
Attitude to whistleblowing	1–6	0.695	**34.75**	$p < 0.01$
Public service motivation	1–6	0.432	**21.60**	$p < 0.01$
Value of justice	1–6	0.135	**6.75**	$p < 0.10$
Behavioral control				
Perceived legal protection	1–6	0.025	**1.25**	$p > 0.10$
Perceived org. retaliation	1–6	−0.102	**−5.10**	$p > 0.10$
Job satisfaction	1–6	−0.202	**−10.10**	$p < 0.05$
Risk-taking propensity	0–10	0.131	**13.10**	$p < 0.01$
Self-efficacy	1–6	0.216	**10.80**	$p < 0.10$
Subjective norms				
Family support	1–6	0.282	**14.10**	$p < 0.01$
Colleague support	1–6	0.241	**12.05**	$p < 0.10$
Supervisor support	1–6	0.018	**0.90**	$p > 0.10$

Among the three initial variables of perceived behavioral control in the TPB framework, only self-efficacy displays a significant impact on whistleblowing intention. Public employees with higher self-efficacy will be more likely to have the courage to report corruption within their organization. The influence rate for self-efficacy is 10.8%. Meanwhile, perceived legal protection and perceived organization retaliation do not significantly change whistleblowing intention among public employees.

Regarding subjective norms, family support and colleague support of whistleblowing show significant and relatively strong influence, with influence rates of 14.10% and 12.05% respectively, on whistleblowing intention, while supervisor support of whistleblowing does not make a significant difference.

5 | DISCUSSION

Prior research has adopted the TPB to examine public employees' whistleblowing intention (Lazim et al., 2022; Lee et al., 2021; Park & Blenkinsopp, 2009; Rustiarini & Sunarsih, 2017; Zakaria et al., 2016, 2020). This study extended the theoretical framework by incorporating two attitude variables (PSM and value of justice) and two perceived behavioral control variables (job satisfaction and risk-taking propensity). The empirical results of this study align closely with those of the prior studies. For instance, attitude toward whistleblowing, self-efficacy, family and colleague support of whistleblowing play crucial roles in determining the likelihood of public employees reporting corruption in their organizations.

On the other hand, the four newly introduced variables each exhibit a significant influence on whistleblowing intention, with influence rates varying from 6.75% to 34.75%. In particular, PSM emerges as the most dominant factor. Existing research has argued that public employees, in comparison to their private sector counterparts, tend to be more sensitive and responsive to social issues (Bullock et al., 2015; Perry & Wise, 1990). Prior research has also suggested that whistleblowers are often driven by a sense of public interest and a willingness to make personal sacrifices (Choi, 2004; De, 2008; Prysmakova & Evans, 2020). This study provides empirical evidence to support their arguments, demonstrating that public workers with stronger PSM are more sensitive to corruption in their organizations and show a greater tendency to report such unethical behavior. According to Gakhar and Mulla (2021), whistleblowing is an act of justice and a manifestation of standing up for righteousness. Hence, this research proposes that strengthened value of justice would impel public employees to combat corruption and disclose misconduct. The empirical results of this study successfully support this hypothesis.

Public sector workers could potentially experience job termination and demotion due to whistleblowing, as documented by Robinson et al. (2014). Individuals contemplating whistleblowing would evaluate the repercussions of potential job loss before disclosing corruption in their organization. Given that quantifying the exact costs of job loss is complex, we use job satisfaction as a proximate indicator in our empirical model. The findings confirm the significance of job satisfaction in influencing whistleblowing intentions, echoing the observations made by Robinson et al. (2014). Similar to job satisfaction, the impact of risk-taking propensity has not yet been empirically investigated in the literature, although previous research has theorized that risk-taking propensity may influence ethical decision-making when there is a certain level of risk involved (Vinson et al., 2020). This research validates that public employees with a higher level of risk-taking propensity are more inclined to take the risk of reporting corruption.

However, this research yields some divergent results compared to earlier studies (e.g., Lazim et al., 2022; Lee et al., 2021; Park & Blenkinsopp, 2009; Rustiarini & Sunarsih, 2017). It reveals that three variables – perceived legal protection, perceived organizational retaliation, and supervisor support of whistleblowing – do not significantly explain the variation in whistleblowing intention. Nonetheless, this departure in empirical findings could offer in-depth insights into the context in which government employees respond to corruption issues. For example, the non-significant influence of perceived legal protection and perceived organizational retaliation may suggest that when public employees in Taiwan consider whether or not to report corruption, they are likely to assess their personal efficacy and personal circumstances (such as job benefits and self-efficacy) rather than organizational or environmental

factors (such as organization retaliation and legal protection). This situation might result from the fact that the Taiwan government at all levels has actively provided public employees with consistent anti-corruption education at various stages of their career development. Such continuous education may have empowered public employees to have greater confidence in the overall government system, reducing the likelihood of feeling intimidated by the absence of legal protection and possible organization retaliation when considering whether or not to report corruption.

The non-significant impact of supervisor support of whistleblowing may signify the fact that family and colleagues are more important than supervisors to public employees in terms of shaping their subjective norms. This is understandable in a hierarchical culture like Taiwan, where ordinary employees interact with colleagues and family members more often than they do with their supervisors (Huo & Boxall, 2022; Kim et al., 2009). Moreover, it may also imply that supervisors rather than ordinary employees are more likely to engage in corruption, because they possess the power and resources to do so. If public employees decide to report corruption, they are more likely to disclose their supervisors' wrongdoing. Thus, the supervisors' support may become irrelevant.

6 | CONCLUSION AND IMPLICATION

To gain a deeper understanding of public employees' whistleblowing intention, this article adapts the framework of TPB by incorporating PSM and values of justice to reflect public sector characteristics; it also considers whistleblowing context variables such as potential costs of job loss and risk-taking propensity. Using survey data from Taiwan, the empirical findings reveal the following conclusions.

First, the adapted framework of TPB is empirically justified. In the complete model, it is notable that all the new but theoretically plausible variables display statistical significance and contribute to explaining the variation in whistleblowing intention among Taiwanese public employees.

Second, this study identifies which factors can effectively increase or decrease public employees' willingness to report corruption in their organizations. Attitude toward whistleblowing is the most influential factor in determining whistleblowing intention. PSM is the second strongest driver of whistleblowing intention, followed by family support, risk-taking propensity, colleague support, self-efficacy, and job satisfaction. The relatively high average whistleblowing intention of 6.6 in a 0–10 scale among Taiwanese public employees (see Table 2) is attributed to the similarly high levels of attitude toward whistleblowing intention, risk-taking propensity, PSM, and self-efficacy (see the average values in Table 2).

In addition, the study offers suggestions for the Taiwanese government to further encourage public employees to report corruption when they observe it. According to the frequency distribution in Figure 2, almost one third of public employees in the sample have whistleblowing intention at levels 0–5 in a 0–10 scale, indicating that there is still room to improve whistleblowing efforts in the public sector. The level of family support, colleague support, and value of justice among Taiwanese public employees is relatively low, as shown in the descriptive statistics in Table 2. The improvement of these variables will significantly boost employees' whistleblowing intention. Nevertheless, the need for improvement in these factors may call for the further advancement of ethics and morality in the society as a whole, which will necessarily involve a collaborative effort from the government, politicians, and non-profit organizations.

7 | FUTURE RESEARCH

This study not only contributes to the theoretical advancement of the TPB in elucidating whistleblowing intentions among public employees but also provides empirical validation for the suitability of this adapted TPB through survey data collected in Taiwan. It is expected that future studies would apply the adapted framework of TPB in other

cultures to further examine its empirical application. Future research using a case study approach may also apply this framework to analyze the behavior patterns of public employees.

In addition to the topic of whistleblowing, the adapted TPB framework has the potential to be utilized in a range of subjects related to bureaucratic behaviors, particularly those involving some types of risks. One suggestion is to apply it to the broader concept of voice behavior in the workplace. Voice behavior encompasses actions such as whistleblowing, reporting wrongdoing, and offering constructive suggestions (Morrison & Milliken, 2000). Similar to whistleblowing, engaging in voice behavior can expose individuals to risks because the hierarchical status of supervisors may lead them to view employees' voice as a threat (Williams & Yecalo-Tecle, 2020). Even when employees who speak up are committed to improving the organization by highlighting uncomfortable flaws and questioning the current state of affairs, they often face misunderstandings and negative social outcomes (Liang et al., 2012). It would be intriguing to explore whether the adapted TPB can effectively explain the intention and behavior of other forms of workplace voice.

Furthermore, the adapted TPB can be applied to research on unethical behavior as a means of identifying effective measures for prevention and reduction. Unethical behavior refers to actions by members of an organization that violate widely accepted moral norms and values. These actions encompass corrupt practices, conflicts of interest, fraudulent activities, misappropriation of resources, wastefulness, abuse of resources, violation of rules, manipulation of information, and inappropriate treatment like intimidation and discrimination (Huberts, 2018). Understanding unethical behavior and exploring methods to decrease it have become a prominent area of research (Belle & Cantarelli, 2017; Zhang et al., 2019). The application of the adapted TPB in unethical behavior research could be beneficial in addressing the issue.

CONFLICT OF INTEREST

This research does not involve any conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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APPENDIX A

TABLE A1   Measurement of variables.

Variable	Survey item	Scale	Cronbach's alpha
Outcome: Whistleblowing intention	When you witness corruption in your organization, how likely are you to report it? (0 = unwilling to report; 10 = absolutely to report)	0–10	n/a
Attitude toward whistleblowing	1. I think whistleblowing can protect public interest. 2. I think it is public employees' responsibility to report wrongdoing. 3. I think it is ethical to report wrongdoing.	1–6	0.88
Public service motivation	1. I am interested in public policy making that produce interest to the country and the society. 2. I feel satisfied to see that people benefit from public programs. 3. Meaningful public service is very important to me. 4. I would prefer seeing government does what is best for the whole community even if it harmed my interest. 5. It is difficult for me to contain my feelings when I see people in distress. 6. I feel sad for the plight of the underprivileged. 7. Making a difference in society means more to me than my personal achievements. 8. I am prepared to make enormous sacrifices for the good of society even if I lose an opportunity for promotion. 9. I believe in putting duty before self.	1–6	0.88
Value of justice	1. I think the world is a just and fair place. 2. Things will happen to you good or bad, according to how you behave. 3. I believe equality is the norm. 4. I believe evil does not oppress the righteous. 5. I believe those who experienced unfairness will eventually receive justice.	1–6	0.87
Perceived legal protection	I think Taiwan has effective legal protection for whistleblowers.	1–6	n/a
Perceived organizational retaliation	I think whistleblowing will cause retaliation in the organization.	1–6	n/a
Job satisfaction	1. I am satisfied with my current job in general. 2. I am satisfied with my current salary in general. 3. I am satisfied with my promotion opportunities in general. 4. I am satisfied with the leadership in general. 5. I am satisfied with the organizational climate in general. 6. I am satisfied with the physical facilities in my organization	1–6	0.81
Risk-taking propensity	1. What is the extent you are willing to take risks in finance? 2. What is the extent you are willing to take risks in career? 3. What is the extent you are willing to take risks of major changes in life?	1–10	0.76
Self-efficacy	1. I can easily and effectively communicate with others. 2. I can properly utilize interpersonal and interorganizational networks to cope with challenges in workplace. 3. I can manage conflicts using different approaches according to the context. 4. I can turn conflicts into constructive outcomes.	1–6	0.89

TABLE A1 (Continued)

Variable	Survey item	Scale	Cronbach's alpha
Family support	My family supports me to report wrongdoing found in my organization.	1–6	n/a
Colleague support	My colleagues support me to report wrongdoing found in my organization.	1–6	n/a
Supervisor support	My supervisor supports me to report wrongdoing found in my organization.	1–6	n/a