

Exploring the Relationships Between Perceived Coworker Loafing and Counterproductive Work Behaviors: The Mediating Role of a Revenge Motive

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Abstract

Purpose The purpose of this study is to explore the relationships between perceived coworker loafing and counterproductive work behaviors toward the organization (CWB-O) and toward the coworkers (CWB-I).

Design/Methodology/Approach Data were collected from 184 supervisor–employee pairs from multiple sources (i.e., self-rated and supervisor-rated). Structural equation modeling (SEM) analyses were conducted to test our hypotheses.

Findings The results of SEM showed that perceived loafing was positively related to CWB-O (self-rated) and CWB-I (self-rated and supervisor-rated). Moreover, a revenge motive toward the organization fully mediated the relationship between perceived loafing and CWB-O, whereas a revenge motive toward coworkers fully mediated the relationship between perceived loafing and CWB-I.

Implications This study advances our understanding as to *how* and *why* perceived coworker loafing increases employees' CWB-I and CWB-O. Our investigation also highlights the important cognitive mediator: revenge motive in the perceived loafing–CWB linkage.

Originality/Value This is one of the first studies which examines the relationships between perceived coworker loafing and two facets of CWB, and investigates a cognitive mediator (i.e., a revenge motive) that underlines the perceived loafing–CWB linkage. In addition, we respond to Bennett and Robinson's (J Appl Psychol 85:349–360, 2003) call to test the nomological network of CWB in a collectivist culture (i.e., Taiwan).

Keywords Counterproductive work behavior · Perceived loafing · Revenge · Collectivist culture · Taiwan

Introduction

In recent years, counterproductive work behavior (CWB) has become an important topic for organizational researchers (Penney and Spector 2005; Sackett 2002). CWB refers to employee behavior that is intended to harm either an organization or its members (e.g., stealing, sabotage, aggression, and being absent from duty without reason; Spector and Fox 2002). Therefore, CWB has been considered as a negative aspect of performance (Dalal 2005; Rotundo and Sackett 2002). CWB has attracted researchers' attention because such behavior is generally typical of any organization and can cause significant negative impact in the form of lost productivity, high insurance and labor costs, elevation of employee turnover rate, and increase in work pressure (Baron and Neuman 1996; Penney and Spector 2005; Vigoda 2002). As Schmitt et al. (2003) suggest, "given the huge potential individual, social, and financial costs of some of these acts, research on this area of work performance is certainly overdue" (p. 95). However, at this juncture our understanding of CWB is only beginning to develop.

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Past research has mainly focused on two aspects of antecedents of CWB. They are: employees' attitudes toward organizations or jobs (e.g., organizational justice perceptions, perceived organizational support, or job satisfaction), and individual differences (e.g., positive and negative affectivity, conscientiousness, or agreeableness) (Berry et al. 2007; Dalal 2005; Fox et al. 2001; Jones (2009); Lau et al. 2003; Spector and Fox 2002). However, another aspect, the interpersonal antecedents of CWB, has not been extensively examined in the empirical literature (Venkataramani and Dalal 2007). Moreover, the mechanism linking interpersonal antecedents to CWB has not been clarified in past studies (Burk-Lee and Spector 2006; Felps et al. 2006). As interpersonal cues (e.g., perceptions about coworker's loafing or antisocial behaviors) not only provide individuals, information about their social context, but also influence how individuals adapt and react to their social context (Bennett and Robinson 2003; Glomb and Liao 2003; Robinson and O'Leary-Kelly 1998), it is important to clarify the impacts and mechanisms that link interpersonal antecedents and CWB (Felps et al. 2006; Venkataramani and Dalal 2007).

This study is designed to address aforementioned research gaps in three ways. To begin with, we add an interpersonal antecedent of CWB (i.e., *perceived coworker loafing*) that has not been previously included in the theoretical model. In this study, we focus on only one interpersonal antecedent (i.e., perceived coworker loafing) for two reasons. First, the perceptions of coworker loafing can have detrimental impacts on both employees and organizations. Recently, Felps et al. (2006) have proposed a model that explains how and why perceived coworker loafing can have a powerful and detrimental influence on others. When employees perceive that their coworkers are engaged in social loafing, then the perception may trigger employees' antisocial behaviors to avoid being taken for a "sucker"¹ (Liden et al. 2004; Mulvey and Klein 1998). The triggered antisocial behaviors can have negative impacts on both organizational goals and other members' well-being. Second, as different interpersonal antecedents have independent effects on CWB and may influence CWB through various mechanisms, a full investigation of all interpersonal antecedents is beyond the scope of this article. Therefore, we only test whether perceived coworker loafing triggers employees' CWB according to Felps et al.'s (2006) perspective.

Next, past studies have mainly examined the role of an affective mediator in the antecedents–CWB linkage (e.g., negative emotions; Barclay et al. 2005; Spector and Fox 2002). However, a cognitive mediator has not been

¹ The term "sucker" is informally used to describe someone who is easily deceived.

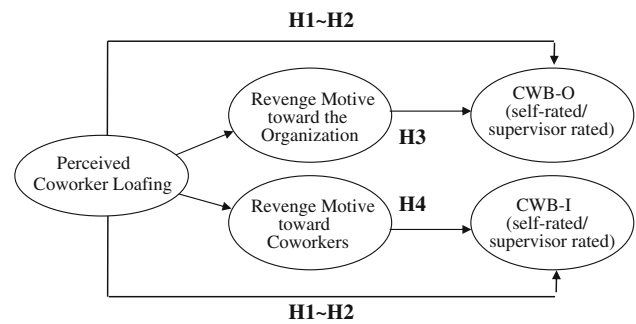


Fig. 1 Conceptual model linking perceived coworker loafing to counterproductive work behaviors

addressed extensively in the empirical literature (Bies and Tripp 2001; Martinko et al. 2002). In this study, we examine a cognitive mediator (i.e., *revenge motive*, Beugre 2005; Jones 2009) that underlines the perceived loafing–CWB linkage. To clarify the mediating mechanism, we try to use multiple theoretical perspectives to warrant our theoretical model: the cognitive stage model (Beugre 2005) and theories in revenge (Bies and Tripp 1996). Clarifying the mediating mechanism is important because it answers the question of *how* and *why* interpersonal antecedents lead to CWB (Whetten 1989).

Finally, we respond to Bennett and Robinson's (2003, p. 260) call to test the nomological network of CWB in a collectivist culture (i.e., Taiwan; Hofstede 1997). Although Kwok et al. (2005) have investigated the association between another interpersonal antecedent (i.e., perceived normative control from the supervisor and coworkers) and CWB in a collectivist culture (i.e., China), we extend their findings by examining whether employee perceived coworker loafing leads to different aspects of CWB (i.e., CWB-O and CWB-I)² through a revenge motive. Figure 1 outlines the conceptual model of this study, in which the level of analysis focuses on the individual.

Theory and Hypotheses

Counterproductive Work Behavior

Counterproductive work behavior (CWB) is behavior intended to hurt the organization or other members of the organization. It includes activities such as avoiding work, doing tasks incorrectly, physical aggression, verbal insults, sabotage, and theft (Spector and Fox 2002, p. 271). Over the

² According to Bennett and Robinson (2000), Dalal (2005), and Fox et al. (2001), CWB can be categorized into two dimensions: organizationally directed CWB (CWB-O) and interpersonally directed CWB (CWB-I). We have adopted their categorization in this study.

years, various researchers have discussed other similar terms for CWB, such as *organizational delinquency* (Hogan and Hogan 1989), *antisocial behavior*, *workplace deviance behavior* (Robinson and Bennett 1995), *workplace aggression* (Baron and Neuman 1996), and *organization-motivated aggression* (Robinson and O’Leary-Kelly 1998). Following the majority of previous studies (e.g., Berry et al. 2007; Dalal 2005; Fox et al. 2001; Lau et al. 2003), we use the term “CWB” in our study.

In recent studies, the majority of researchers have adopted Robinson and Bennett’s (1995) approach to categorize CWB into *organizationally directed* (CWB-O) and *interpersonally directed* (CWB-I) (Bennett and Robinson 2000; Berry et al. 2007; Dalal 2005; Fox and Spector 1999; Fox et al. 2001). Examples of CWB-O include work avoidance (e.g., tardiness) and work sabotage (doing work incorrectly), whereas CWB-I ranges from gossip to abuse (e.g., insults), or even threats toward others. Although the purpose of this study is to explore the effects of an interpersonal antecedent (i.e., perceived coworker loafing) on CWB, we have included both CWB-O and CWB-I in the proposed model to retain the construct domain of CWB and to fully capture the effects of perceived loafing on different aspects of CWB (i.e., CWB-O and CWB-I).

The Relationship Between Perceived Coworker Loafing, CWB-O and CWB-I

Perceived coworker loafing refers to an individual’s perception that one or more coworkers are contributing less than they should (Comer 1995). Employees typically observe the behavior of coworkers, which in turn influences their own behaviors (Liden et al. 2004). Adams (1965) suggests that employees are sensitive to coworkers who receive similar rewards for less effort, and that their efforts will be changed to reflect their perceptions of fairness.

On the one hand, when employees perceive their coworkers as withholding effort, they may perceive the organizational distribution of outcomes as a form of injustice (Adams 1965). After employees compare their own contributions to those of “perceived loafers,” they become motivated to reduce their own efforts or they slack off (i.e., an aspect of CWB-O) to reduce the perceived inequity (Felps et al. 2006). In addition, Liden et al.’s (2004) study also found that perceived loafing is negatively related to procedural justice at the individual level ($r = -.18$, $p < .05$). This suggests that perceived coworker loafing may increase employees’ perceived procedural injustice as well. Since the organization is often regarded as the source of distributive and procedural injustice (Bies and Moag 1986; Jones 2009), employees may respond to the sources of unfairness by decreasing their contributions within the organization or by engaging in CWB-O such as work

avoidance or tardiness (Jones 2009; Liden et al. 2004). As a result, we expect that employees who suspect coworkers of social loafing will be more likely to engage in CWB-O as a means to reciprocate the organization.

On the other hand, perceived coworker loafing may also lead to higher levels of CWB-I. Based on social exchange theory (Blau 1964), CWB-I can be considered one of the consequences of the employee–coworker exchange relationship. When employees perceive inequity and feel a lack of support from their coworkers (i.e., perceived coworker loafing), they become more likely to reciprocate the source of inequity by treating their coworkers badly (Liao et al. 2004). Beugre (2005) and Felps et al. (2006) also suggested that employees may engage in some retaliation behaviors (i.e., CWB-I) to restore equity and positive feelings that had been disturbed by coworkers’ social loafing. Taken together, it is reasonable to expect that perceived coworker loafing is positively related to both CWB-O and CWB-I.

However, as Bennett and Robinson (2000) suggest, when the targets of CWB differ, the effects of the “trigger” on CWB-O and CWB-I also vary. Organizational antecedents are more closely related to CWB-O than to CWB-I, whereas interpersonal antecedents are more closely associated to CWB-I than to CWB-O (Fox et al. 2001; Lau et al. 2003). Following in this vein, we expect that perceived coworker loafing (i.e., the interpersonal antecedents) should have a stronger positive relationship with CWB-I than with CWB-O. Taking these arguments together, we propose the following:

Hypothesis 1 Perceived coworker loafing is positively correlated to both facets of CWB (i.e., CWB-O and CWB-I), and perceived coworker loafing correlates more strongly with CWB-I than with CWB-O.

Perceived Coworker Loafing → Revenge Motive Toward the Organization → CWB-O

As we mentioned in the previous section, we expect that employees would exhibit both CWB-O and CWB-I to respond to their perceptions of coworker loafing and inequity. However, it remains plausible that perceived loafing leads to CWB-O and CWB-I through different mediating processes.

Equity theory suggests that employees do not simply become dissatisfied with inequity (i.e., perceived coworker loafing); they adjust their behaviors to respond to the injustice perceptions in some ways (Adams 1965). Skarlicki and Folger (1997) further pointed out that employees’ injustice perceptions increase their motives to “get even” with the sources of injustices. As stated by Bies et al. (1997, p. 21), “any perceived inequities on the job or violations of fairness norms can motivate revenge.” Bies

et al. (1997), p. 21) explicitly noted that “violations include bosses or coworkers who shirk their job responsibilities, or take undue credit for a team’s performance”. According to Skarlicki and Folger and Bies et al.’s arguments, it is reasonable to expect that employee perceptions of coworker loafing may enhance their revenge motives.

Revenge motive is defined as the intention of the victim of harm to inflict damage, injury, discomfort, or punishment on the party judged responsible for causing the harm (Aquino et al. 2001; Jones 2004). The motivation of revenge can be directed at the organization, one’s supervisor, or one’s coworkers and it is often activated by unfair or unjust events (Bies and Tripp 1996; Jones 2004). For instance, Jones (2009) found that perceived interpersonal injustice increases employees’ revenge motive against their supervisors, while perceived procedural injustice enhances their revenge motive toward the organization. When the sources of “trigger” events change, the target(s) of revenge may also change. Revenge motive is a cognitive variable because individuals often think about and plan for revenge-related behaviors (i.e., CWB-O and CWB-I) before they act (Bies and Tripp 1996, 2001). In this vein, it is possible that perceived coworker loafing enhances employees’ intent to take revenge on the organization or coworkers before they engage in CWB-O or CWB-I. The mechanisms are further explained in Beugre’s (2005) cognitive stage model.

Beugre’s (2005) cognitive stage model suggests that an aggressive response (e.g., CWB) following unjust events is not spontaneous, but is the result of a sequence of cognitive stages: the assessment stage, the accountability stage, and the reaction stage. At the assessment stage, employees will first perceive the triggered events (e.g., perceptions of coworkers as loafing) as fair or unfair. When a discrepancy exists between what is expected and the actual event (e.g., the expected contributions of “loafers” and the perceived contributions that “loafers” contribute less than they should), a sense of injustice may arise. When employees have formed an injustice judgment, they will attempt to identify the sources of injustice and seek the targets of revenge, which occurs at the next stage.

At the second stage (the accountability stage), employees may cognitively ruminate over the unjust events (i.e., perceived coworker loafing), asking why it occurs and considering what actions to take (Beugre 2005). When employees identify a target on whom to attribute the cause of unjust events, then attribution of blame allows the employees to fuel the revenge motive toward the target (e.g., the coworkers or the organization) and identify the target of retaliatory responses (e.g., CWB-I or CWB-O) (Aquino et al. 2001; Skarlicki and Folger 1997). Jones (2009) study provides direct evidence to this model. In his study, he found that the supervisor is often perceived as the source of interpersonal injustice; while the organization is

regarded as the source of procedural injustice by employees. Employees’ injustice perceptions will in turn influence their revenge motives toward the supervisor or the organization. In the case of perceived loafing, employees may attribute the cause of loafing to either the organization (e.g., the deficiencies of the performance monitoring or pay systems; Kidwell and Bennett 1993) or coworkers (e.g., intentionally withhold their effort; Comer 1995), which in turn increases their revenge motives against the organization or coworkers.

After attributing the blame for the unjust events, employees’ revenge motives will drive them to select and execute a particular form of aggression (e.g., CWB-O or CWB-I) to restore their perceptions of justice (i.e., the final stage: the reaction stage). According to the cognitive stage model, if employees attribute the cause of coworker loafing to *the organization*, it follows that employees will fuel their revenge motive toward the organization, which successively leads to engagement in CWB-O. Empirically, Jones’ (2004) study also found that employees’ perceived procedural injustice increases their revenge motive against the organization, which in turn leads to high levels of CWB-O. This finding provides evidence for our argument. Taken together, we propose the following hypothesis.

Hypothesis 2 A revenge motive toward the organization mediates the relationship between perceived coworker loafing and CWB-O.

Perceived Coworker Loafing → Revenge Motive
Toward Coworkers → CWB-I

Similarly, the cognitive stage model suggests that when seeking out the cause of perceived coworker loafing, employees may also attribute the blame to coworkers’ propensity and deliberate intention to withhold their effort (Comer 1995). Felps et al. (2006) argues that coworkers who perform social loafing will trigger other members’ undesirable cognitions because the loafers take advantage of other members’ good-faith contributions. Attribution of blame will arise when employees compare their own contributions to those of the “loafers,” which in turn results in a revenge motive toward them (Beugre 2005; Felps et al. 2006). The motivation to take revenge on coworkers will lead to employees’ exhibition of CWB-I toward the coworkers (i.e., perceived loafers) in response to the coworker loafing. The viewpoint of “negative social exchange” (Glomb and Liao 2003; Liao et al. 2004) also suggests that when employees perceive unfairness from their coworkers, they may reciprocate the coworkers with a display of aggression (i.e., CWB-I). Integrating the perspective of the cognitive stage model and negative social exchange, the following hypothesis is proposed:

Hypothesis 3 A revenge motive toward coworkers mediates the relationship between perceived coworker loafing and CWB-I.

Method

Participants and Procedure

The majority of CWB research has used the self-report approach to collect data from a single source (Penney and Spector 2005). However, the self-report and single source approach may result in an under or overstatement of the relationships among CWB and other variables (Dalal 2005; Fox et al. 2001). To address this issue, we followed Fox et al. (2001) and Spector and Fox's (2002) approach to collect CWB data from multiple sources (i.e., employee self-rated and supervisor-rated). This approach has the further advantage of avoiding potential problems related to common method variance (CMV) (Mount et al. 2006).

To enhance the robustness and generalizability of our findings, we followed Cable and DeRue's (2002) approach to collect data from heterogeneous job types and organizations. A convenience sampling method was used in which 150 questionnaires were distributed to actual supervisors who agreed to participate in this study. Each questionnaire included a cover letter explaining the purpose of the study, and emphasizing that all responses would be anonymous and remain confidential (i.e., to avoid problems related to social desirability; Podsakoff et al. 2003). Employee self-rated responses were collected by asking 150 supervisors to give questionnaires to two of their subordinates (to collect data on perceived loafing, the revenge motive, and self-rated CWB-O and CWB-I). Moreover, supervisors were also asked to evaluate the CWB-O and CWB-I of the two chosen subordinates (i.e., supervisor-rated CWB). The completed surveys (i.e., from supervisors and employees) were returned directly by mail to the researchers, resulting in a valid response rate of 61% (with 184 complete pairs).

In total, 184 complete pair surveys were returned directly by mail to the researchers collected from 99 supervisors (81 supervisors rated 2 employees,³ others rated one)—a valid

response rate of 61%. Supervisors were predominantly male (53%) and 41% were between the ages of 40 and 50 (mean = 39.87, SD = 8.8). Most supervisors (45%) had a Bachelor's degree. About 38% of supervisors had organizational tenure of <5 years (mean = 9.21, SD = 7.29).

The collected data represented a wide dispersion of job types, such as administrative (25%), financial/accounting (8%), personnel (24%), research and development (15%), engineering (14%), and marketing (12%). The sample also included a wide diversity of industries, such as traditional manufacturing (15%), high-technology (9%), service (31%), and finance (20%). Employees were predominantly female (65%) and 42% were between 20 and 30 years of age (mean = 34.5, SD = 8.6). About 45% of employees had a Bachelor's degree, while 61% of employees had organizational tenure of <5 years (mean = 6.9, SD = 7.3).

Measurement

In order to ensure the content validity of the measurements (Schwab 2005), all measurements were translated into Chinese by the authors and then reviewed by six bilingual experts who had majored in organizational behavior to assess the appropriateness and adequacy of the translation. Each expert reviewed all items independently and gave feedback on those items they thought were inappropriately translated. This review process was repeated until a consensus on appropriateness was achieved.

Perceived Loafing

Perceived loafing of coworkers was measured using Mulvey and Klein's (1998) four-item scale (example items are: my co-workers were "free-loaders;" my co-workers were contributing less than I anticipated). Responses were made on a five-point scale (1 = *strongly disagree* to 5 = *strongly agree*). The Cronbach's alpha for this scale was .74.

Revenge Motive Toward the Organization

We used two items from Jones' (2004) scale to measure the revenge motive toward the organization (i.e., if I were mistreated by the company, the satisfaction of "getting even" would outweigh the risks of getting caught; if I were

³ As 81 supervisors rated more than one employee, this raises the issue of data non-independence on supervisor-rated CWB (e.g., rater effects). Similarly, employee self-rated CWB could be influenced by the group effect (e.g., working within the same work context or for the same boss may have led to the similar levels of self-rated CWB). Therefore, we calculated the ICC(1) and r_{wg} values for both supervisor-rated CWB-I (ICC[1] = .15, mean r_{wg} = .95) and CWB-O (ICC[1] = .18, mean r_{wg} = .98), and employee self-rated CWB-I (ICC[1] = .22, mean r_{wg} = .96) and CWB-O (ICC[1] = .17, mean r_{wg} = .97). These values suggested that the potential for non-independence problems in terms of supervisor-rated and self-rated

Footnote 3 continued

CWB did exist. Thus, we conducted HLM to control the non-independence problem (i.e., rater effects and group effects) and then tested our model again. According to Hofmann and Gavin's (1998) suggestions, we used the grand-mean centering method to center the Level-1 predictors and control for the Level-2 rater or group effects. The HLM results showed similar findings to the SEM results. Hence, the non-independence problem did not adversely influence our findings.

mistreated by the company, it would feel good to “get back” in some way). Responses were made on a seven-point scale (1 = *strongly disagree* to 7 = *strongly agree*). Cronbach’s alpha for this scale was .87.

Revenge Motive Toward Coworkers

Similarly, we modified Jones’ (2004) two items to measure the revenge motive toward coworkers (i.e., if I were mistreated by my coworkers, the satisfaction of “getting even” would outweigh the risks of getting caught; if I were mistreated by my coworkers, it would feel good to “get back” in some way). Responses were made on a seven-point scale (1 = *strongly disagree* to 7 = *strongly agree*). Cronbach’s alpha for this scale was .82.

Counterproductive Work Behavior

It was measured using Bennett and Robinson’s (2000) 19-item scale, which includes seven items pertaining to CWB-I (sample items are: acted rudely toward someone at work; said something hurtful to someone at work) and twelve items pertaining to CWB-O (sample items: spent too much time fantasizing or daydreaming instead of working; took an additional or longer break than is acceptable at your workplace). Responses were made on a seven-point scale (1 = *never* to 7 = *daily*). The Cronbach’s alphas for CWB-I and CWB-O were .92 and .90, respectively.

Control Variables

According to Penney and Spector (2005), employees with a higher level of *negative affectivity* (i.e., one that reflects a personality disposition that constantly experiences negative affective states) are more likely to engage in CWB. For this reason, employees’ negative affectivity was included as a control variable.⁴ Negative affectivity was measured with Watson et al. (1988) 10-item scale (e.g., “irritable;” “upset;” “hostile”). Participants were asked to indicate the extent to which they generally felt each mood on a five-point Likert scale (1 = *not at all* to 5 = *very much*). Cronbach’s alpha for this scale was .87.

Moreover, Fox and Spector (1999) suggested that employees’ perceived *likelihood of punishment* would influence their CWB. Therefore, perceived likelihood of punishment was included as another control variable. This

⁴ Although it is useful to control negative affectivity (NA) in order to reduce the possibility of common method variances, Podsakoff et al. (2003) also suggest that controlling for NA might also partial out the meaningful variances between NA and other theoretically related variables. As such, we performed additional analyses that excluded NA from our final models. The results remained identical to our original findings.

was measured with Robinson and O’Leary-Kelly’s (1998) four-item scale in which participants were asked to indicate the extent to which they would be punished by acting on each behavior (example items: doing things that could hurt other people in the organization; doing things that could hurt the department or the organization we work for) on a five-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). The Cronbach’s alpha for this scale was .88.

Data Analysis

To test our hypotheses, we conducted structural equation modeling (SEM) using LISREL 8.54 with maximum likelihood estimation. Following Anderson and Gerbing’s (1988) suggestion, we adopted a two-stage approach to test the SEM. First, we examined the discriminant and convergent validity of the measurement model with a series of confirmatory factor analyses (CFA). Second, we examined the hypothesized model by assessing three conditions of mediation (Baron and Kenny 1986). We used the overall model Chi-square index, the goodness-of-fit index (GFI), the comparative fit index (CFI), the normed fit index (NFI), and the root mean square error of approximation (RMSEA) to assess the model fit (Bollen 1989; Jöreskog and Sörbom 1999). All analyses were based on the covariance matrix, and SEM analyses were conducted with full items instead of using the item parceling method.

Results

Table 1 presents the means, SDs, reliabilities, and correlations of the study variables. The results show that perceived loafing was positively related to having a revenge motive toward coworkers and the organization ($r = .17$ and $.15$; all $ps < .05$), self-rated CWB-I, and supervisor-rated CWB-I ($r = .15$, and $.16$, all $ps < .05$). Moreover, having a revenge motive toward coworkers was positively related to the self-rated CWB-O and CWB-I ($r = .25$ and $.15$, all $ps < .05$). Likewise, having a revenge motive toward the organization was also positively related to self-rated CWB-O and CWB-I ($r = .31$ and $.18$, all $ps < .05$).

Confirmatory Factor Analyses

To evaluate the discriminant and convergent validity of measures, we conducted CFA using LISREL 8.54. Using the maximum likelihood estimation, we estimated the fit indices of our measurement model.

The CFA results showed that the hypothesized 7-factor model (i.e., negative affectivity, likelihood of punishment, perceived loafing, revenge motive toward the organization, revenge motive toward coworkers, self-rated CWB-O and

Table 1 Means, SDs, reliabilities, and correlations among variables

	Mean	SD	1	2	3	4	5	6	7	8	9
Control variables											
Negative affectivity	1.77	.60	.87								
Likelihood of punishment	2.98	1.04	.00	.88							
Study variables											
Perceived loafing	2.68	.73	.13	−.12	.74						
Revenge motive-I	2.39	.97	−.04	.14	.15*	.82					
Revenge motive-O	2.45	.96	−.05	.21**	.17*	.61**	.87				
Self-rated CWB-O	1.58	.50	.09	.07	.11	.25**	.31**	.92			
Self-rated CWB-I	1.70	.52	.16*	.10	.15*	.15*	.18*	.62**	.90		
Supervisor-rated CWB-O	1.63	.50	.04	−.07	.03	.02	.11	.19*	.14	.87	
Supervisor-rated CWB-I	1.65	.55	.03	−.09	.16*	.02	.08	.13	.27**	.48**	.87

Cronbach’s alpha coefficients are presented in boldface on the diagonal

Note: Revenge motive-I, revenge motive toward coworkers; Revenge motive-O, revenge motive toward the organization

N = 184

* $p < .05$; ** $p < .01$ (two-tailed)

CWB-I) fits the data better ($\chi^2 [681] = 349.2$; $\chi^2/df = .51$, GFI = .91, CFI = .99, NFI = .90, RMSEA = .00) than a 6-factor model in which all revenge motive items were forced to load on one factor, instead of two separate factors ($\chi^2 [687] = 362.3$; $\chi^2/df = .52$, GFI = .90, CFI = .98, NFI = .88, RMSEA = .01). Chi-square tests showed that the χ^2 decrement between the hypothesized 7-factor model and the 6-factor model was statistically significant ($\Delta\chi^2 = 13.1$, $\Delta df = 6$).

Moreover, we also found that the fit indices of the hypothesized 7-factor model of supervisor-rated CWB fit the data better ($\chi^2 [681] = 288.2$; $\chi^2/df = .42$, GFI = .93, CFI = 1.00, NFI = .90, RMSEA = .00) than the 6-factor model ($\chi^2 [687] = 303.4$; $\chi^2/df = .44$, GFI = .90, CFI = .96, NFI = .87, RMSEA = .01). Chi-square tests also showed that the χ^2 decrement between the hypothesized 7-factor model (supervisor-rated) and the 6-factor model was statistically significant ($\Delta\chi^2 = 15.2$, $\Delta df = 6$). These CFA results indicate that the revenge motive can be treated as a two-dimensional construct, and demonstrate the distinctiveness of the seven constructs measured in this study. Moreover, the factor loadings of all items in the 7-factor model were statistically significant ($p < .01$), suggesting that the convergent validity of all measures is acceptable (Bagozzi et al. 1991).

Test of Alternative Models

As we did not predict our hypothesized model as either full or partial mediation, we tested both models with SEM to determine which model fits the data well. The partially mediated model differs from the fully mediated model in that it has two direct paths from perceived coworker loafing

to CWB-O and CWB-I. The results of the fully mediated model are presented in Fig. 2.

The results show that both the fully mediated model (self-rated CWB: $\chi^2 [685] = 353.4$; $\chi^2/df = .52$, GFI = .92, CFI = 1.00, NFI = .91, RMSEA = .00; supervisor-rated CWB: $\chi^2 [685] = 289.9$; $\chi^2/df = 42$, GFI = .93, CFI = 1.00, NFI = .90, RMSEA = .00) and the partially mediated model (self-rated CWB: $\chi^2 [683] = 349.3$; $\chi^2/df = .51$; GFI = .91, CFI = .98, NFI = .88; RMSEA = .01; supervisor-rated CWB: $\chi^2 [683] = 284.7$; $\chi^2/df = 42$, GFI = .93, CFI = 1.00, NFI = .90, RMSEA = .00) provided an adequate fit to the data. However, the Chi-square difference test shows that the χ^2 decrement between the fully and partially mediated model was not statistically significant (self-rated CWB: $\Delta\chi^2 = 4.1$, $\Delta df = 2$; supervisor-rated CWB: $\Delta\chi^2 = 5.2$, $\Delta df = 2$). Furthermore, the results of the hypothesized structural relationships were identical for the two models. For the sake of parsimony, the full mediation model was retained as the final model (see Fig. 2).

Additionally, to evaluate the impact of applying structural constraints on the model, we followed Anderson and Gerbing’s (1988) suggestion to compare the Chi-square difference between the measurement model and the structural model (i.e., the full mediation model). The results of the Chi-square difference test were presented in Table 2. The Chi-square difference tests showed that the structural model did not result in a significant reduction in fit compared to the measurement model in terms of self-rated CWB ($\Delta\chi^2 = 4.4$, $\Delta df = 4$) and supervisor-rated CWB ($\Delta\chi^2 = 1.7$, $\Delta df = 4$). According to the results of the Chi-square difference test, we concluded that the fully mediated model did not fit significantly worse than the measurement model; hence, we used it to test our hypotheses.

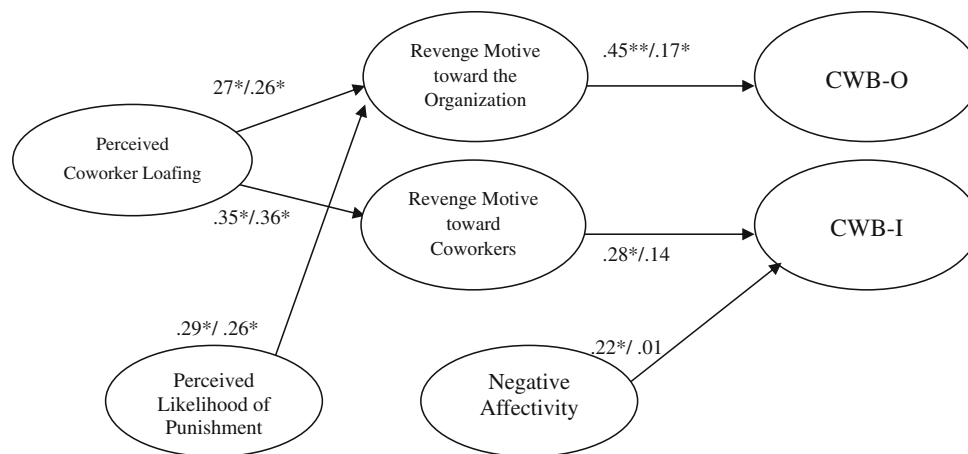


Fig. 2 Structural equation model with maximum likelihood estimates (standardized)^{a, b}. The *left values* are coefficients from self-rated CWB, whereas the *right values* are coefficients from supervisor-rated CWB. $\chi^2 [685] = 353.4$; $\chi^2/df = .50$, GFI = .92, CFI = 1.00, NFI = .91, RMSEA = .00. * $p < .05$, ** $p < .01$ (two-tailed). $N = 184$. Note:

^a Correlations among the exogenous and endogenous variables are freely estimated but not shown in the model. ^b We allowed control variables to predict two revenge motives and two types of CWB. For simplicity of the model, only the significant paths between control variables and the study variables are shown in the model

Hypotheses Testing

Hypothesis 1 proposed that perceived coworker loafing would be positively correlated to both CWB-O and CWB-I, and perceived coworker loafing would correlate more strongly with CWB-I than with CWB-O. To test Hypothesis 1, we firstly used self-rated CWB-I and CWB-O as dependent variables and then included perceived loafing, negative affectivity, and perceived likelihood of punishment as predictors in the structural model. In addition, the two types of CWB were allowed to freely correlate in this model.

The results showed that perceived loafing is positively and significantly related to self-rated CWB-I ($\beta = .25$, $p < .05$). However, perceived loafing is only positively and marginally correlated to self-rated CWB-O ($\beta = .18$, $p < .10$). As for the supervisor-rated CWB, the results also revealed that perceived loafing is positively and significantly related to supervisor-rated CWB-I ($\beta = .27$, $p < .05$) but not supervisor-rated CWB-O ($\beta = .01$, $p > .10$) after controlling for the effects of the control variables.

Moreover, we also examined whether perceived coworker loafing correlated more strongly with CWB-I than with

CWB-O (in terms of both the self- and supervisor-rated scores). The results of the significance testing indicated that the correlation between perceived loafing and self-rated CWB-I was not significantly stronger than the correlation between perceived loafing and self-rated CWB-O ($t = 1.14$, $p > .10$). As for the supervisor-rated CWB, perceived loafing correlated with supervisor-rated CWB-I more strongly than with supervisor-rated CWB-O ($t = 3.46$, $p < .01$). Taken together, perceived loafing only positively and significantly correlated with CWB-I (self-rated and supervisor-rated) but not with CWB-O. In addition, perceived coworker loafing is more strongly correlated to CWB-I than to CWB-O only for the supervisor-rated CWB. Therefore, Hypothesis 1 received partial support.

To test the Hypotheses 2 and 3, we assessed Baron and Kenny's (1986) three mediating conditions with SEM. According to the results of Hypothesis 1, perceived loafing significantly correlated with self-rated CWB-I and supervisor-rated CWB-I, and marginally correlated with self-rated CWB-O. Thus, the first mediating condition was satisfied. In addition, the path coefficients of perceived coworker loafing to revenge motive toward the organization

Table 2 Comparisons between the measurement model and structural model

Models	χ^2	df	$\Delta\chi^2$	Δdf	GFI	CFI	NFI	RMSEA
The measurement model (self)	349.2	681	–	–	.91	.99	.90	.00
The structural model (self)	353.4	685	4.2	4	.92	1.00	.91	.00
The measurement model (supervisor)	288.2	681	–	–	.93	1.00	.90	.00
The structural model (supervisor)	289.9	685	1.7	4	.93	1.00	.90	.00

Note: The values of $\Delta\chi^2$ and Δdf were differences between the measurement model and the structural model (self-rated and supervisor-rated CWB)

($\beta = .27$ and $.26$, all $ps < .05$) and toward the coworkers ($\beta = .35$ and $.36$, all $ps < .05$) were also positive and significant (see Fig. 2). Furthermore, the path coefficients of revenge motive toward the organization to CWB-O were positive and significant in both self- and supervisor-rated scores ($\beta = .45$ and $.17$, all $ps < .05$), whereas revenge motive toward coworkers only significantly correlated with self-rated CWB-I ($\beta = .28$, $p < .05$).

Finally, in order to test whether indirect effects of the predictor on the dependent variable via the mediators existed, we performed Sobel tests to examine the statistical significance of the two mediated relationships (see O'Driscoll et al. 2006; Sobel 1982). We followed Preacher and Hayes's (2004) suggestions to code the SE of path coefficients (from the fully mediated model) and calculate the critical ratio as a test of whether the indirect effects were significantly different from zero. The results of the Sobel test confirmed the existence of significant mediating effects of perceived loafing on self-rated CWB-O ($Z = 2.02$, $p < .05$) via revenge motive toward the organization. In addition, the indirect effects of perceived loafing on supervisor-rated CWB-O through revenge motive toward the organization were marginally significant ($Z = 1.80$, $p < .10$). It should be noted that although the path coefficient between perceived loafing and self-rated CWB-O was only marginally significant ($\beta = .18$, $p < .10$), the indirect effects of perceived loafing on CWB-O through revenge motive were statistically significant. Therefore, Hypothesis 2 was also partially supported.

Furthermore, the results of the Sobel test revealed that perceived loafing led to self-rated CWB-I through the indirect effects of having a revenge motive toward coworkers ($Z = 1.98$, $p < .05$). However, the indirect effects of the revenge motive toward coworkers were not statistically significant in the case of the supervisor-rated CWB-I ($Z = 1.51$, $p > .10$). Thus, Hypothesis 3 was only supported in the case of self-rated CWB-I.

Discussion

In this study, we investigated the relationship between an interpersonal antecedent (i.e., perceived coworker loafing) and different aspects of CWB (i.e., CWB-O and CWB-I) in a collectivist culture (i.e., Taiwan). Moreover, we also examined the mediating role of the revenge motive to clarify *how* and *why* perceived coworker loafing leads to CWB. In order to provide a more rigorous examination, we collected CWB data from multiple sources as well as simultaneously testing our model with SEM. In the next sections, we briefly discuss the theoretical and practical implications of our findings.

The Relationship Between Perceived Loafing and CWB

In this study, we expected that perceived loafing would increase employees' CWB-O and CWB-I, and the association between perceived coworker loafing and CWB-I would be stronger than the perceived loafing-CWB-O relation. We briefly discuss the implication of our findings from three aspects.

To begin with, we found that perceived loafing is positively related to CWB-I (both self-rated and supervisor-rated). This finding is consistent with the argument put forward in Felps et al.'s (2006) model and the social exchange perspective (e.g., Liao et al. 2004). Additionally, the results showed that CWB-O is not directly triggered by perceived coworker loafing (the relationship was only marginally significant in self-rated CWB-O). One explanation is that CWB-O, such as work tardiness or free-riding, are less visible and hard for supervisors to directly observe as compared to CWB-I (Mount et al. 2006).

Next, we found that perceived loafing correlates with CWB-I more strongly than with CWB-O in terms of the supervisor-rated CWB. This finding reflects Fox et al. (2001) and Lau et al.'s (2003) suggestion that interpersonal antecedents are more likely to lead to CWB-I than to CWB-O. Specifically, this finding also supports our argument that coworkers who are perceived as intentionally harming the collective interests (e.g., perceived loafers) may result in higher levels of negative outcomes from other members.

Finally, the patterns between perceived loafing, self-rated CWB-O, and supervisor-rated CWB-O are indeed different in our study, and the correlation between self- and supervisor-rated CWB-O is relatively low ($r = .19$, $p < .05$). We wish to propose some possible explanations for these findings. First, only the focal employee is fully aware of the CWB-O he/she actually performs, whereas supervisors are privy to only those types of CWB-O that they actually see or the results of these types of behaviors (i.e., limited opportunities to observe CWBs). Thus, it is possible that employee-rated scores are more accurate than supervisor-rated scores in terms of CWB-O (Fox et al. 2007). Second, as others (e.g., supervisors or peers) may not detect all CWB-O that employees have carried out, it is reasonable that the correlations between other-rated CWB-O and self-rated CWB-O are low-to-moderate. For example, Fox et al. (2007) documented that the correlations between coworker- and self-rated CWB-O and CWB-I were $.13$ and $.47$, respectively, while Mount et al. (2006) and Jones (2004) also found low to moderate correlations between supervisor- and self-rated CWB-O and CWB-I ($r = .21$ and $.48$; $r = .18$ and $.24$, respectively). Importantly, when using supervisor- and self-rated CWBs, these

studies also obtained different patterns in terms of their findings. These findings may provide some support for our arguments.

The Mediating Role of a Revenge Motive

The affective mediator has played a major role in the antecedents–CWB linkage in past studies (e.g., Barclay et al. 2005; Spector and Fox 2002). To extend the theoretical understanding of CWB literature, we examined two cognitive mediators (i.e., revenge motive toward the organization and coworkers) that clarify the perceived loafing–CWB linkages in this study. Consistent with the aspects of the cognitive stage model (Beugre 2005) and theories in revenge (Bies and Tripp 1996; Bies et al. 1997), we found that the two revenge motives fully but differentially mediate the relationships between perceived coworker loafing, CWB-O, and CWB-I (all self-rated). These findings provided some support to Beugre's (2005) cognitive stage model and showed that employees would try to identify the sources of injustice and seek their targets of revenge when they perceive the coworker loafing as unjust. As such, employees can attribute the cause of loafing to either the organization or the loafers themselves, which in turn increases their engagement in both CWB-O and CWB-I.

Although the overall relationship between perceived loafing and self-rated CWB-O is only marginally significant, perceived loafing still influences CWB-O through the indirect effects of having a revenge motive toward the organization. One explanation is that perceived loafing may not only trigger the revenge motive toward the loafers but also form a revenge motive against the organization (e.g., to have an intention to “get back at” the organization by reducing the effort invested at work), thus increasing the frequency of both CWB-I and CWB-O.

Furthermore, our study is one of the first studies to examine the relationships between perceived coworker loafing and two aspects of the revenge motive (i.e., toward the organization and coworkers). This helps us to partly demonstrate the negative consequences caused by the loafing coworkers. That is, coworkers' social loafing will trigger other employees' revenge motives (either toward the organization or toward the coworkers), which will lead still more employees to employ CWB-O and CWB-I as a means to fight back.

Taken together, this study contributes to the CWB literature by examining the relationship between the interpersonal antecedent (i.e., perceived coworker loafing) and CWB, and advances our understanding as to *how* and *why* perceived loafing increases the engagement of CWB-I and CWB-O.

The Investigation of CWB in the Collectivistic Culture

Recently, Bennett and Robinson (2003) have appealed for empirical studies that test the generalizability and the nomological network of the CWB model in collectivistic cultures (e.g., China, Taiwan; Hofstede 1997). Since we examined the antecedents of CWB in a collectivistic culture, our findings help to respond to their call in the following two ways.

First, the means of both self-rated CWB-O and CWB-I in our study (i.e., 1.58 and 1.70, respectively) are very similar with those found in studies conducted within an individualistic culture (i.e., US sample) using the same rating scale (i.e., a seven-point Likert scale).⁵ For example, the means of self-rated CWB-O and CWB-I are 1.66 and 1.85, respectively in Bennett and Robinson's (2000) study. In addition, the mean of supervisor-rated CWB-I in Thau et al. (2007) study (i.e., 1.30) is also very close to our findings (1.65). The only exception is Jones (2009) study. The mean of self-rated CWB-O is 3.23 in his study—this could be due to the use of a younger employee sample (mean age = 22.94).

Second, the association between revenge motive toward the organization and self-rated CWB-O in our study (i.e., $r = .32$) is also similar to the findings obtained from US samples (e.g., $r = .24$ and $.39$; see Jones 2004; p. 164). This suggests that the findings of the revenge motive–CWB-O linkage in individualistic cultures can be generalized into those of collectivist cultures (i.e., Taiwan). We encourage future CWB researchers to collect data from both individualistic and collectivist cultures simultaneously to empirically test whether culture moderates the associations between CWB and other variables.

Practical Implications

We can draw several practical implications from our findings. To begin with, perceived coworker loafing enhances employees' revenge motives and their CWB-O and CWB-I. Thus, organizations should try to avoid the negative impacts associated with coworker loafing by reducing the possibility for social loafing. One way to achieve this goal is to highlight the significance of jobs so that “loafers” will view their tasks and goals as meaningful. When loafers see their jobs or goals as significant, they are less likely to engage in social loafing, which will in turn reduce other employees' perceptions of loafing (Liden et al. 2004). Another way is to stress that the individuals' performance is tied to their remuneration to

⁵ Those studies using different rating scale (e.g., five-point Likert scale) or different anchors (e.g., very agree to very disagree) were excluded in our comparison.

reduce loafers' social loafing. When loafers perceive that their pay is contingent on their individual performance, they may withhold less effort when engaging in their work (Kidwell and Bennett 1993), thus reducing other employees' perception of loafing and potential negative consequences.

Next, since peers are in a better position to observe CWB than are supervisors, it is useful to create the peer rating performance system whereby employees can rate each other on CWB-I or CWB-O anonymously (Kwok et al. 2005; Mount et al. 2006). In this way, employees can receive averaged feedback about their CWB rated by others. As employees' CWB is the source of potentially huge individual, social, and financial costs for organizations (Schmitt et al. 2003), this system not only directly decreases employee intentions to engage in CWB, but also provides supervisors with useful information when completing performance ratings and when meting out necessary punishments.

Finally, since employees' revenge motive enhances their engagement in CWB-O and CWB-I, organizations should carefully select employees with low personality-based tendencies for revenge in order to reduce the occurrence of CWB (Bies et al. 1997; Eisenberger et al. 2004; Jones 2004; Sommers et al. 2002). Furthermore, organizations can also implement some formal training programs to reduce employees' revenge motive. Training programs such as conflict management, stress management, and ethical training have demonstrated their effectiveness in reducing employees' intention to take revenge (Bies et al. 1997), which can decrease employees' selection and execution of particular forms of CWB.

Limitations and Future Research

There are a few limitations of this study that should be noted. First, although we followed Fox et al. (2001) and Spector and Fox's (2002) suggestions to collect CWB data from multiple sources, all variables in the self-rated CWB model still originated from the same sources. Thus, the problem of CMV may have influenced the results (Podsakoff and Organ 1986). We addressed this issue in four ways. First, prior to data collection, we referred to suggestions made by Spector and Fox (2003) to emphasize the use of fact-based, specific items to minimize subjective (perceptual) bias and potential problems of social desirability, which are major sources of CMV. Second, we empirically controlled one major source of CMV (i.e., negative affectivity; Judge et al. 2006; Podsakoff et al. 2003; Spector 2006) in our model. The SEM results showed that after controlling for the effects of negative affectivity, the study variables still had significant relationships as we expected they would. Third, after the data collection, we

conducted CFA to detect the severity of CMV (see Korsgaard and Roberson 1995). If CMV had been a significant problem in this study, then the 1-factor model (i.e., all items loaded on a common factor) would have fit the data as well as the proposed model. However, the proposed 7-factor model provided a better fit (χ^2 [681] = 349.2, GFI = .91, CFI = .99, NFI = .90, RMSEA = .00) than the 1-factor model (χ^2 [702] = 1,308.4, GFI = .73, CFI = .88, NFI = .69, RMSEA = .08). Finally, according to Spector (2006), if CMV problems occur, all relationships estimated in our model would be highly inflated. However, as summarized in Table 1, 33 estimated correlations in our model ranged from having no relationship to having only moderate relationships ($r = -.01-.32$); only 3 associations were highly correlated (e.g., the correlations between supervisor-rated CWB-O and CWB-I, between self-rated CWB-O and CWB-I, and between revenge motive toward the organization and coworkers). Taken together, these findings suggest that the issue of CMV should not be adversely or significantly influencing our findings.

The second limitation concerns the fact that we asked respondents to indicate their "current" perceptions about their coworkers and revenge motives, while our CWB measure did not include a corresponding time-frame for the measures of perceived loafing and revenge motives (i.e., we assessed respondents' past CWB not present CWB). Therefore, it will be beneficial for future researchers to clearly specify and match time-frames among the variables of interest and CWB. For example, Judge et al. (2006) examined how employees' daily justice perceptions lead to their "daily" CWB. Diefendorff and Mehta (2007) investigated how employees' motivational traits influence their CWB over a period of 1 year (retrospective measure). These approaches help to reduce the possibility of reverse causality.

Third, this study is limited to a cross-sectional design. Each variable was collected at the same time point. As such, we cannot unequivocally determine the direction of causality in our data. We encourage future researchers to re-examine the present findings using an experimental design. In addition, it may also prove interesting for researchers to examine how employees' current perceptions about their work environment or revenge motives affect their future CWB using a longitudinal design.

Finally, as we had a relatively small sample size (i.e., 184), the sample size-to-item ratio in the SEM analyses (i.e., 41 items; the sample size-to-item ratio equals to 4.5:1) was less than the recommended 5:1 ratio (Worthington and Whittaker 2006). In order to provide stable parameter estimates, we encourage future researchers to test and extend our theoretical model with a larger sample (Bentler 1995).

To further extend the theoretical model of CWB, it would be useful for future research to simultaneously test

the effects of organizational antecedents (e.g., perceived organizational justice, perceived organizational culture), interpersonal antecedents (e.g., perceived loafing or conflicts), and personal antecedents (e.g., personality or work attitudes) on the revenge motive and CWB. This would offer the opportunity to simultaneously investigate the influence that these three facets of antecedents have, as well as the relative effects of these antecedents on employees' engagement in CWB.

Moreover, it would also be useful to examine the boundary conditions of our model from a multi-level perspective. Future research could investigate the moderating effects of a justice climate or a CEO's transformational leadership (Bass 1998). When a climate associated with a higher level of justice exists, employee perceptions of coworkers' loafing may not lead to a revenge motive because organizations would mete out adequate punishments when necessary. Thus, the relationship between perceived loafing and the revenge motive would be attenuated. Furthermore, when an organization's CEO is a transformational leader, he/she will effectively inspire and motivate employees to sacrifice their personal interests for the success of organization. As a result, when a CEO displays a higher level of transformational leadership, this may reduce CWB-O and CWB-I as employees give up their tendency to take revenge.

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