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Guanxi with Supervisor and Counterproductive Work Behavior: The Mediating Role of Job Satisfaction

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Abstract This study aims to explore the role of informal leader–member interactions in managing counterproductive work behavior (CWB) in a non-Western context. We propose that under the Chinese background, *guanxi* with supervisor increases employees' job satisfaction, which further reduces their CWB. Partial least square structural equation modeling with a sample of 272 Chinese employees confirms this mediating effect of job satisfaction. However, we also find that job satisfaction passes the effect of *guanxi* with supervisor on to CWB targeting people, but not to CWB targeting the organization. Implications for research on CWB and *guanxi* with supervisor are discussed.

Keywords China · CWB · Job satisfaction · *Guanxi* · PLS-SEM · Social exchange

Introduction

Organizations traditionally improve their competitiveness through boosting effective employee behaviors (e.g., organizational citizenship behavior, Farh et al. 1997; proactive behavior, Lam et al. 2014). Western scholars, however, have gradually steered their attention to the pervasive counterproductive work behavior (CWB) whose impacts are notably negative in the workplace (Klotz and Buckley 2013). CWB refers generally to "a set of distinct behaviors that share the characteristics that they are volitional (as opposed to accidental or mandated) and harm or intend to harm organizations and/or organization stakeholders." (Spector et al. 2006, p. 447). It has also been studied under various specifically defined labels such as emotional abuse (e.g., Keashly and Harvey 2005), theft and withdrawal (e.g., Chen and Spector 1992), production deviance (e.g., Hollinger 1986), and aggression (e.g., Hershcovis et al. 2007).

Management and organization researchers have made abundant efforts in explaining how CWB occurs in order to prescribe what organizations have to do to reduce it (Klotz and Buckley 2013). A recent meta-analysis (Berry et al. 2012) revealed that CWB was most frequently attributed to individual attributes (e.g., demographics and Big Five) and contextual factors (e.g., constraints and organizational justice). This finding is in line with the extant literature that emphasized personality and work stressors as the antecedents of CWB (e.g., Bolton et al. 2010; Jensen and Patel 2011; Meier and Spector 2013; Spector 2011). Surprisingly, interpersonal factors have been largely ignored, given the substantial chance that human interactions in the workplace be proximal causes of CWB (Spector et al. 2006). This research gap has remained until two recent studies related CWB to leadership behaviors (Kessler et al. 2013) and leadership consideration and structure (Holtz and Harold 2013). The current study attempts to expand this stream of research by focusing on *guanxi* with supervisor, an informal leader–member relationship in China.

This informal relationship perspective is of much importance. Based on a historical review of CWB, Klotz and Buckley (2013) identified two trends in the workplace

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that had made companies depend more than ever on informal sources and structures to prevent, monitor, and reduce CWB. One is the blurring of work-life boundaries as a cause of CWB; the other is technological advances that have made CWB more ambiguous and facilitated the development of new forms of CWB. Although informal relationships have not been explicitly related to CWB, a recent study (Lin and Ho 2010) found that Chinese *guanxi* increased employees' organizational citizenship behavior (OCB), which usually had a negative correlation with CWB (Klotz and Bolino 2013).

Specifically, this paper explores how *guanxi* with supervisor impacts employees' CWB through their job satisfaction. We attempt to make several contributions to the literature. First, this study expands the list of interpersonal causes of CWB and enriches the role of supervisors in the CWB management (Holtz and Harold 2013; Kessler et al. 2013). Rather than highlighting more formal interpersonal interactions (e.g., employee selection, MacLane and Walmsley 2010; leadership behaviors, Kessler et al. 2013), we focus on the *guanxi* with supervisor, which is non-work-centered.

Second, this paper proposes a perspective of job satisfaction to explain the effect of *guanxi* with supervisor on CWB. *Guanxi* with supervisor and CWB may have different targets: the former targets the supervisor, but the latter usually targets the organization or persons other than the supervisor. Therefore, it is reasonable not to expect an immediate effect of *guanxi* with supervisor on CWB. We use the causal reasoning perspective of CWB (Martinko et al. 2002) to predict that *guanxi* with supervisor invokes employees' cognitive processing of job satisfaction, which further brings CWB that functions as a means to regain the balance between the contributions the employees have made and the benefits they have received. Since CWBs differ in their targets, we also relate *guanxi* with supervisor to CWBs with different targets, specifically CWB targeting the organization (CWB-O) and CWB targeting people (CWB-P). Thus, this paper has the potential of revealing the intricate mechanism about how different types of CWBs occur.

Third, conducted in the Chinese context, this study illustrates how CWB occurs in non-Western settings. Considering many CWBs have roots in negative emotions (Spector and Fox 2005; Spector et al. 2006), and emotions are regulated by culture and social norms (Johns 1997; Keashly and Harvey 2005), studying CWB in a global context is beneficial and indispensable for the full understanding of these behaviors. The CWB literature, however, has almost exclusively taken a Western perspective, with very few exceptions (Peng 2012; Rotundo and Xie 2008).

Fourth and finally, as an improvement upon prior work that measured CWB by averaging the ratings of its items, this study uses partial least square structural equation modeling (PLS-SEM) in data analyses so that the measurement model of CWB and the hypothesized relationships can be examined simultaneously.

Theoretical Background and Hypothesis Development

Guanxi with Supervisor in China

Guanxi, or "a quality relationship that determines the appropriate behaviors and treatment of each other" (Chen and Tjosvold 2006, p. 1730), is usually considered as an indigenous Chinese concept (Law et al. 2000). It is driven by personal interests as well as needs to belong; it can be built on a relationship by birth or blood (e.g., relatives and neighbors) or through social interactions and acquaintances; it is maintained and reinforced through long-term reciprocal exchanges; it can be transferred through a third party as the referral (Chen and Tjosvold 2007; 2006; Luo 2000).

As a form of *guanxi*, *guanxi* with supervisor refers to a particularistic relationship between individuals and their immediate supervisors (Wong et al. 2003). It takes roots in mutual interest and benefits (Wong et al. 2003), is established and developed mainly through social interactions after work (Chen et al. 2009; Luo 2000), and has the potential of facilitating favor exchanges between the two parties involved (Hwang 1987). Despite over 30 years of cultural modernization in China, *guanxi* with supervisor remains the most critical interpersonal relationship in different Chinese settings and has been considered as corresponding to the ruler–subject relationship of old (Wei et al. 2010). It has proven to be a key antecedent to various work attitudes and behaviors of both employees and their supervisors (Zhang et al. 2013).

Guanxi with Supervisor and Job Satisfaction

Job satisfaction refers to the degree to which individuals are satisfied with their jobs (Kalleberg 1977). According to the social exchange theory (Blau 1964), there are mutual investments and perceived obligations between individuals and the organization they serve based on the norm of reciprocity (Gouldner 1960). When individuals take time and effort to their jobs, they anticipate that the organization will recognize their contributions and return reciprocally. The extent to which this anticipation is met determines individuals' job satisfaction.

Guanxi with supervisor promotes social exchanges between employees and their supervisors through both expressive and instrumental mechanisms, which correspond to the expressive and instrumental components of

this informal tie (Hwang 1987). The expressive mechanism takes place because *guanxi* with supervisor is relatively stable and long-term oriented, which can render the *guanxi* parties' feelings of attachment, affection, and loyalty (Hwang 1987). Empirical studies showed that *guanxi* with supervisor increases employees' trust in and obedience and devotion to their supervisors (Chen et al. 2009; Farh et al. 1998), all of which generates favorable responses from their supervisors (Law et al. 2000). As to the instrumental mechanism, *guanxi* with supervisor helps employees to achieve their career goals (Law et al. 2000) by providing an alternative to formal institutional support (Xin and Pearce 1996). After all, today's China remains *guanxi*-oriented (Chen and Chen 2004; Lin and Ho 2010), and not all the work issues can be well addressed through organizational policies and procedures.

There has been ample evidence for the positive effects of *guanxi* with supervisor on the job in many ways. It increases breadth and depth of communication (Chen and Tjosvold 2006), facilitates open-minded dialog (Chen and Tjosvold 2007), and helps resolve conflicts (Chen et al. 2011). It not only makes employees feel free to seek advice from their supervisors (Chen and Tjosvold 2006), but also disposes supervisors to provide opportunities for demonstrating their employees' potential in the work (Chen and Tjosvold 2006; Cheung et al. 2009). Strong *guanxi* with supervisor even helps employees to keep work-life balance (Kossek et al. 2011) and induces supervisors to exert personal influence on job assignments and resource allocations that satisfy their employees' interests (Cheung et al. 2009).

Taken all those above together, *guanxi* with supervisor shapes employees' jobs so that they look desirable and promising. From a facet-based measurement perspective of job satisfaction, these favorable aspects of jobs indicate proximal causes of job satisfaction (Judge and Klinger 2008). Therefore, we expect a positive relationship between *guanxi* with supervisor and employees' job satisfaction.

Job Satisfaction and CWB

According to social exchange theory, job dissatisfaction implies a perceived imbalance that the employees' contributions are not fully compensated by the benefits they receive from the organization. Although CWB cannot be viewed functional for the organization or beneficial for employees, it provides a temporal solution to regain the balance through decreasing the employees' contributions or reducing the benefits of the organization (Spector and Fox 2002).

The link between job satisfaction and CWB may be strengthened by negative affectivity in social exchanges. A recent meta-analysis found an association between job dissatisfaction and negative affectivity such as anger, fear, and anxiety (Bruk-Lee et al. 2009). Since individuals high in negative affectivity have a heightened tendency to dwell on negative aspects of themselves and their environments (Watson and Pennabaker 1989), they are more likely to recognize disequilibria in the workplace and thus more probable to make negative attributions. In addition, these individuals are more inclined to see adverse events as stable than those who are low in negative affectivity (Martinko et al. 2002). As a result, employees who are dissatisfied with their jobs are inclined to recognize imbalance in the workplace exchanges and make negative attributions, both of which lead to CWB.

The Mediating Role of Job Satisfaction

To the best of our knowledge, little study has examined the relationship between *guanxi* with supervisor and CWB. A recent study (Lin and Ho 2010), however, confirmed the positive effect of workplace *guanxi* on OCB. Although CWB is not the opposite of OCB (Spector et al. 2010), they usually have a negative correlation (Klotz and Bolino 2013). It is possible that *guanxi* with supervisor not only facilitates OCB but also restrains CWB.

Although there may be different mechanisms whereby *guanxi* with supervisor impacts CWB, here and now, we would argue that one such mechanism is carried through the mediation of employees' job satisfaction. We use the causal reasoning perspective of CWB (Martinko et al. 2002) to synthesize the above discussion that was primarily based on social exchange theory. The causal reasoning perspective of CWB holds that situational variables invoke individuals' cognitive processing, during which the individuals appraise disequilibria in the workplace and make attributions. As developed above, the employees with weak *guanxi* with supervisor are at a disadvantage in competing for various tangible and intangible benefits at work. As a result, they are more likely to perceive disequilibria in the workplace and dissatisfy with their jobs. To better this situation, they have to analyze the causes (i.e., attribution processes) and then take measures accordingly to reduce their job dissatisfaction. Although CWB is not desirable for the organization or the employees, it can act as a temporal solution for employees' negative emotions (Spector and Fox 2002). Therefore, we propose the following hypothesis:

Hypothesis 1 *Guanxi* with supervisor increases employees' job satisfaction, which further reduces their CWB.

Scholars make a distinction between CWB targeting the organization (CWB-O) and CWB targeting people (CWB-P) (e.g., Robinson and Bennett 1995). In line with the norm of reciprocity (Gouldner 1960), CWB caused by

job dissatisfaction primarily targets the organization, because as aforementioned, employees' feeling of job dissatisfaction arises primarily from the perception that their contributions are not fully compensated by the benefits they receive from the organization. Job dissatisfaction, however, may also lead to CWB-P due to three reasons. First, according to the cognitive perspective of job satisfaction, employees' job satisfaction results from various aspects of their jobs (Moorman 1993). In this sense, work-related exchanges with people in the workplace, not necessarily those with the organization, may also lead to job dissatisfaction. Second, the intentions behind CWB are not always clear (Sakurai and Jex 2012). Third, the members of the organization, particularly those as supervisors, are considered representative of the organization (Schneider 1987). Therefore, individuals may conduct certain CWB-P (e.g., purposely failed to follow instructions) to express their dissatisfaction with the organization.

Hypothesis 2 *Guanxi* with supervisor increases employees' job satisfaction, which further reduces their CWB-O.

Hypothesis 3 *Guanxi* with supervisor increases employees' job satisfaction, which further reduces their CWB-P.

Methodology

Sample and Data

The sample for this study included 350 employees from six companies in Nanjing, China. As a major city in East China, Nanjing has undergone a dramatic transformation in the past over thirty years. Numerous organizations in this city have adopted Western ideas and techniques, but *guanxi* as a traditional element in Chinese culture is still embraced in business management (Zhang et al. 2013). This mixed condition facilitates examining the effect of *guanxi* with supervisor under transition context. These sampled firms were in information technology, international trade, and electronic industries, respectively. At least one of the authors got well acquainted with the head of the human resource department or one of the top managers from each company. This connection guaranteed close cooperation from these companies because Chinese people are *guanxi*-oriented. After successful contact with the heads of human resource departments of these companies, one of the authors went to collect data on-site. At the beginning of data collection, this author described the research objectives and the procedures of data collection to the respondents, who were assured that all information they provided would be kept confidential. The completed questionnaires were returned directly to the author at the spot.

Out of the 350 respondents, 272 returned valid questionnaires, equivalently a response rate of 78 %. Although the representativeness of the sample cannot be verified empirically, the demographic profile of the final sample proved to be highly similar to that of the original sample according to the Mann–Whitney U test ($Z = -1.15$, $p > 0.10$ for gender difference; $Z = -1.02$, $p > 0.10$ for age difference; $Z = -0.13$, $p > 0.10$ for educational level difference; $Z = -1.26$, $p > 0.10$ for team tenure difference). Among the 272 respondents in the final sample, 160 respondents (59 %) were from state-owned enterprises, 60 respondents (22 %) were from private companies, and the rest 52 respondents (19 %) were from foreign-investment enterprises. There were more men than women (66 % vs. 34 %), and 88 respondents (32 %) were married. An "average" respondent was 31.10 years old (*s.d.* = 3.16), received a college degree, and had worked under his/her current supervisor for 2.60 years (*s.d.* = 1.77).

Measures

CWB. A 33-item version of the CWB Checklist (Spector et al. 2006) was adopted to measure CWB. Spector et al. (2006) classified these CWBs into five categories, including sabotage (three items), withdrawal (four items), production deviance (three items), theft (five items), and abuse (18 items). Sample items included, "Purposely wasted your employer's materials/supplies" (sabotage), "Came to work late without permission" (withdrawal), "Purposely did your work incorrectly" (production deviance), "Stolen something belonging to your employer" (theft), and "Been nasty or rude to a client or customer" (abuse). Each item asked for a rating of how often particular behavior occurred in the past 12 months on a five-point Likert scale (1 = never, 2 = once or twice a year, 3 = once or twice a month, 4 = once or twice a week, 5 = daily).

A prerequisite for testing Hypotheses 2 and 3 was the placement of the CWB items into CWB-O and CWB-P. Five graduate students in management served as subject matter experts (SMEs) to fulfill this task. After informing them of the definition of CWB and the difference between CWB-O and CWB-P, we asked the SMEs to indicate into which category each item fit. They coded the items independently first and then discussed the disagreements and resolved them. Among the 33 CWB items, 15 items were placed into CWB-O; another 17 items were placed into CWB-P; the remaining item (i.e., "Started or continued a damaging or harmful rumor at work") was excluded from either category because of its vagueness in target.

As Spector et al.'s (2006) CWB Checklist is a formative scale whose indicators are not interchangeable measures of a single underlying construct, we analyzed the first-order

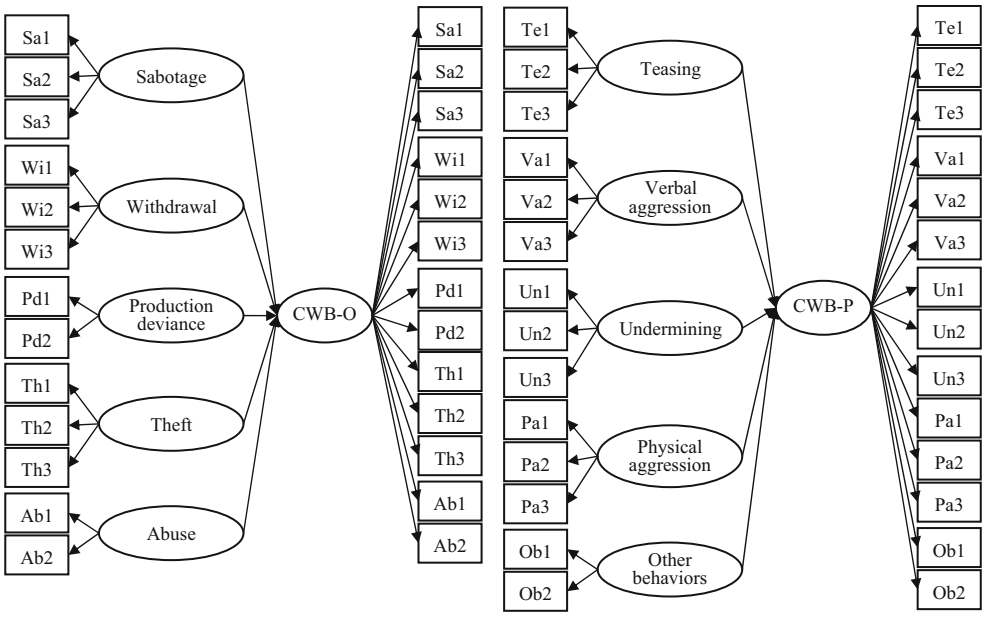

Fig. 1 The HCMs of CWB-O and CWB-P Model 1a: The HCM of CWB-O Model 1b: The HCM of CWB-P

formative measurement models of CWB, CWB-O, and CWB-O using PLS-SEM. The results revealed several measurement problems, including multicollinearity, non-significant indicators, and co-occurrence of negative and positive indicator weights. To eliminate these problems, we followed Cenfetelli and Bassellier's (2009) suggestion by establishing hierarchical component models (HCMs) of CWB, CWB-O, and CWB-P.

We first dealt with CWB-O. According to Spector et al. (2006), its 15 items fell into five categories (i.e., sabotage [three items], withdrawal [four items], production deviance [two items], theft [four items], and abuse [two items]), which served as the lower order components (LOCs) of CWB-O. Then we specified a formative-reflective HCM of CWB-O (Ringle et al. 2012). Specifically, we specified formative relationships between the LOCs and CWB-O because these LOCs were categories of CWB and thus were not interchangeable (Coltman et al. 2008). However, we specified reflective relationships between the manifest indicators and the LOCs because each of these LOCs existed independent of their indicators, and the indicators belonging to a particular LOC shared a common theme (Coltman et al. 2008).

We established the HCM of CWB-O using the repeated indicators approach (Lohmöller 1989), whereby we assigned all the indicators from the LOCs to CWB-O. We subsequently removed two indicators with loadings below the recommended threshold value (i.e., 0.70). One of them belonged to the LOC of withdrawal, and deleting this indicator led to an increase in the average variance extracted (AVE) above the recommended threshold value (i.e., 0.50) (Hair et al. 2014). The other indicator belonged to the LOC of theft, and deleting this indicator decreased the number of the theft indicators to 3, thus making it closer to the number of indicators with the other LOCs. According to Becker et al. (2012), the equality of the number of indicators per LOC helps to eliminate potential bias when using a repeated indicators approach. As a result, we had the HCM of CWB-O consisting of 13 manifest indicators (i.e., three for sabotage, three for withdrawal, two for production deviance, three for theft, and two for abuse; see Fig. 1; Table 3 in Appendix for detail).

The PLS-SEM analysis showed that the HCM of CWB-O fit the data well. The manifest indicators' loadings ranged between 0.64 and 0.88, with only one below 0.70. However, since the criteria for reliability and convergent validity were both met, we retained this indicator with loadings below 0.70. All the LOCs' composite reliabilities (i.e., 0.78 [sabotage], 0.79 [withdrawal], 0.87 [production deviance], 0.82 [theft], and 0.80 [abuse]) were well above the critical value of 0.70, thus supporting internal consistency reliability. The LOCs' AVEs (i.e., 0.54 [sabotage], 0.55 [withdrawal], 0.76 [production deviance], 0.60 [theft], and 0.67 [abuse]) were above 0.50, thereby supporting convergent validity. In addition, the correlations between any two LOCs ranged between 0.42 and 0.65, lower than the square root of any LOC's AVE. Therefore, the Fornell-Larcker criterion was satisfied (Fornell and Larcker 1981),

which established the discriminant validity among these LOCs. Finally, the path coefficients from the LOCs to CWB-O ranged between 0.20 and 0.30, all being highly significant ($p < 0.001$).

We then dealt with CWB-P. To place the items of CWB-P into its sub-categories, the two authors of this paper engaged in a directed inductive process of developing and refining the coding scheme (Krippendorff 2004). It was decided that these items be classified into five sub-categories, including verbal aggression, physical aggression, teasing, undermining, and other behaviors. They then gave the SMEs the definitions of the five sub-categories and asked them to place the items into these sub-categories. The SMEs coded the CWB-P items independently first and then discussed the disagreements. They successfully reached agreement (i.e., physical aggression [four items], verbal aggression [four items], teasing [three items], undermining [four items], and other behaviors [two items]).

Similarly, we specified a formative-reflective HCM for CWB-P, with formative relationships between CWB-P and its LOCs and reflective relationships between the LOCs and the manifest indicators. Although all the AVEs of the LOCs reached the threshold value of 0.50, we deleted three items with the LOCs of verbal aggression, physical aggression, and undermining, respectively. As a result, we came up with the HCM whose LOCs had similar number of manifest indicators (i.e., verbal aggression [three items], physical aggression [three items], undermining [three items], teasing [three items], and other behaviors [two items]; see Fig. 1; Table 3 Appendix for detail). The PLS-SEM analysis showed that the HCM of CWB-P fit the data well. The manifest indicators' loadings ranged between 0.66 and 0.88, with only two below 0.70. The AVEs of the LOCs were 0.67 (teasing), 0.58 (verbal aggression), 0.67 (undermining), 0.65 (physical aggression), and 0.51 (other behaviors), all being above 0.50. The composite reliability estimates for the LOCs were 0.80 (teasing), 0.82 (verbal aggression), 0.86 (undermining), 0.85 (physical aggression), and 0.76 (other behaviors), all being above 0.70. In addition, the correlations between any two LOCs ranged between 0.34 and 0.68, lower than the square root of any LOC's AVE. Therefore, the Fornell-Larcker criterion was satisfied, and the discriminant validity of the LOCs was established. Finally, the path coefficients from the LOCs to CWB-P ranged between 0.21 and 0.29, all being highly significant ($p < 0.001$).

Regarding CWB, we also specified a formative-reflective HCM, with the LOCs from CWB-O and CWB-P as its LOCs. The PLS-SEM analysis showed that this HCM of CWB fit the data well. All the manifest indicators' loadings ranged between 0.65 and 0.89, with three being below 0.70. Nevertheless, since all the AVEs of the LOCs were above 0.50 (i.e., between 0.51 and 0.76), and all their composite reliability estimates were above 0.70 (i.e., between 0.76 and 0.86), we retained the three indicators with loadings below 0.70. The correlations between any two LOCs ranged between 0.26 and 0.65, all of which were lower than the square root of any LOC's AVE. Therefore, the Fornell-Larcker criterion was satisfied, and the discriminant validity of the LOCs was established. Finally, the path coefficient estimates from the LOCs to CWB ranged between 0.09 and 0.20, all being highly significant ($p < 0.001$).

Guanxi with Supervisor

A six-item scale of *guanxi* with supervisor was adopted from Law et al. (2000). The items included, "During holidays or after office hours, I would call my supervisor or visit him/her," "I always actively share with my supervisor about my thoughts, problems, needs, and feelings," "My supervisor invites me to his/her home for lunch or dinner," "On special occasions such as my supervisor's birthday, I would definitely visit my supervisor and send him/her gifts," "I care about and have a good understanding of my supervisor's family conditions," and "When there are conflicting opinions, I will definitely stand on my supervisor's side." Each item asked for a rating on a five-point Likert scale (1 "strongly disagree" to 5 "strongly agree"). The scale score was the average of all the six items. The Cronbach's α for this scale in the current sample was 0.87, indicating good reliability.

Job Satisfaction

We used Minnesota Satisfaction Questionnaire Short Form to measure job satisfaction. The respondents rated the 20 items on a five-point Likert scale (1 "very dissatisfied" to 5 "very satisfied"). Sample items included "The chance to work alone on the job," "The chance to do different things from time to time," and "The way my boss handles his/her workers." The Cronbach's α for this scale in the current sample was 0.97, indicating excellent reliability.

Control Variables

In response to Martinko et al. (2002) emphasis on the role of individual differences and situational variables in the occurrence of CWB, we included the respondents' demographics (i.e., gender, age, educational level, and team tenure), compensation, and organizational ownership to rule out their possible impacts on CWB. Gender was measured with a dummy variable (1 = "male"). Because all except two respondents had a college degree, educational level was measured with a dummy variable (1 = "graduate"). Compensation was measured with

average monthly salary with five categories (1 = "≤2,000 RMB," 2 = "2,001–5,000 RMB," 3 = "5,001–8,000 RMB," 4 = "8,001–10,000 RMB," and 5 = ">10,000 RMB"). Organizational ownership was classified into three categories: private companies, state-owned enterprises, and foreign-investment enterprises. It was thus measured with two dummy variables, with private companies as the reference type. Team tenure referred to years employees had worked for their current supervisors. To reduce potential multicollinearity problem, we transformed team tenure and age to logs before hypothesis testing.

Analytic Methodology

We used PLS-SEM (Lohmöller 1989; Wold 1974) to test our hypotheses for two reasons. First, PLS-SEM facilitates the inclusion of formative measurement models (Hair et al. 2014) so that we can simultaneously examine the measurement model of CWB and the proposed path model. Second, PLS-SEM is deemed advantageous over covariance-based SEM in terms of the robustness of estimations and statistical power when used with small sample sizes (Reinartz et al. 2009). Our sample consisted of 272 observations with 60 manifest indicators, resulting in a subject-to-variable ratio of 4.53 that is lower than the threshold value of 5 for covariance-based SEM (Hair et al. 2010). The data, however, well exceeded the minimum sample size as required by PLS-SEM (i.e., "10 times the largest number of formative indicators used to measure one construct or 10 times the largest number of structural paths directed at a particular construct in the structural model"; Hair et al., 2014, p. 23).

We tested Hypotheses 1–3 by first examining the indirect effect of *guanxi* with supervisor on CWB, CWB-O, and CWB-P through job satisfaction. According to the recent development of mediation analysis, only one requirement is needed to establish mediation that the indirect effect of the predictor on the criterion through the mediator being significant (MacKinnon 2008; Zhao et al. 2010). We also made a more comprehensive examination of the mediation effects using the Tippins and Sohi (2003) criteria. Tippins and Sohi included Baron and Kenny's (1986) conditions for mediation effects but were more applicable to SEM because they involved the comparison of two competing models: the direct model and the mediated model. Specifically, Tippins and Sohi specified four conditions for mediation to occur: (a) the mediated model explains more variance in the criterion than does the direct model; (b) the predictor relates to the criterion in the direct model; (c) the predictor relates to the mediator, and the mediator relates significantly to the criterion in the mediated model; and (d) the significant relationship between the predictor and the criterion indicated in the direct model weakens or becomes nonsignificant in the mediated model.

It is mentionable that, in many reflective-formative HCM applications, almost all the variance in the construct is explained by its LOCs (i.e., $R^2 \approx 1$), which results in a nonsignificant path relationship from any additional latent variable as a predecessor of the construct. We handled this problem using a two-stage method, whereby the latent variable scores obtained in the first stage for the LOCs served as the manifest indicators of the construct in the second stage (Hair et al. 2014).

We assessed the results of each PLS-SEM analysis by evaluating the reflective measurement models, the formative measurement model(s), and the structural model in sequence (Hair et al. 2014). The parametric significance tests were performed using the bootstrapping procedure (i.e., 272 observations for each subsample, 5,000 subsamples). We also assessed whether our test results were flawed by common method bias using Harman's single-factor test (Podsakoff and Organ 1986) and the unmeasured latent marker construct (ULMC) technique (Liang et al. 2007).

The descriptive and correlation statistics were computed with SPSS 20.0. Harman's single-factor test was run with SPSS 20.0 and AMOS 20.0. The PLS-SEM analyses were performed with SmartPLS 2.0 M3 (Beta) (Ringle et al. 2005). All reported p-values were two-tailed. Statistical significance was set at 5 percent.

Results

Preliminary Analysis

Table 1 reports the means, standard deviations, correlations, and reliability estimates of the study variables. The means of *guanxi* with supervisor (i.e., 3.09) and job satisfaction (i.e., 3.50) were above 3, whereas the means of CWB, CWB-O, and CWB-P were relatively small. Of particular interest to this discussion was the pattern of correlations among *guanxi* with supervisor, job satisfaction, and CWB. *Guanxi* with supervisor was positively correlated with job satisfaction ($r = 0.57$, $p < 0.01$) and negatively correlated with CWB-O ($r = -0.12$, $p < 0.05$), CWB-P ($r = -0.15$, $p < 0.05$), and CWB ($r = -0.13$, $p < 0.05$). Job satisfaction was negatively correlated with CWB-P ($r = -0.16$, $p < 0.01$) and CWB ($r = -0.14$, $p < 0.05$) and marginally correlated with CWB-O ($r = -0.11$, $p < 0.10$). In addition, the highest correlation between predicting variables was −0.58 (between the two indicators of organizational ownership), which was well below the recommended threshold value of 0.75 for serious concern of the collinearity problem (Green, 1978).

Table 1 Means, standard deviations, correlations, and reliability estimates of the study variables

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
Gender	0.66	0.47												
Age	31.10	3.16	0.04											
Educational level	0.20	0.40	0.04	0.12										
Team tenure	2.60	1.77	−0.01	0.62**	0.01									
Compensation	3.32	0.92	−0.09	−0.01	0.07	0.02								
Organizational ownership 1	0.19	0.39	−0.25**	−0.15*	−0.01	−0.06	0.00							
Organizational ownership 2	0.59	0.49	0.22**	−0.16**	0.12	−0.16**	0.16**	−0.58**						
Guanxi with supervisor[a]	3.09	0.87	−0.10	0.05	−0.07	0.26**	0.52**	−0.03	0.10	(0.87)[b]				
Job satisfaction[a]	3.50	0.73	−0.07	0.01	0.10	0.01	0.62**	−0.01	0.08	0.57**	(0.97)[b]			
CWB-O[a]	1.52	0.39	0.04	−0.05	0.10	0.00	−0.11	0.03	−0.03	−0.12*	−0.11			
CWB-P[a]	1.24	0.32	0.09	0.00	0.08	0.07	−0.14*	−0.06	0.09	−0.15*	−0.16**	0.73**		
CWB[a]	1.37	0.33	0.07	−0.03	0.10	0.03	−0.13*	−0.01	0.03	−0.13*	−0.14*	0.94**	0.92**	

* $p < 0.05$, ** $p < 0.01$; $n = 272$

[a] The scale score was calculated by taking the mean of the item ratings included in the scale

[b] The numbers in parentheses are Cronbach's α's. We did not report the Cronbach's α's for CWB, CWB-O, and CWB-P because these constructs were measured with formative indicators for which internal consistency reliability are not meaningful

Hypothesis Testing

Hypothesis 1 proposed that job satisfaction mediates between guanxi with supervisor and CWB. To test this hypothesis, we ran PLS-SEM analyses that included the hypothesized relationships and the measurement models of *guanxi* with supervisor, job satisfaction, and CWB. All the control variables (i.e., gender, age, educational level, team tenure, compensation, and organizational ownership) were specified as predictors of CWB and job satisfaction.

The first-stage PLS-SEM analysis showed that the measurement models of *guanxi* with supervisor and job satisfaction fit the data well. Specifically, the AVE of *guanxi* with supervisor was 0.61, and the factor loadings ranged between 0.66 and 0.84. The AVE of job satisfaction was 0.60, and the factor loadings ranged between 0.69 and 0.87. The HCM of CWB also fit the data well. As the measurement statistics were highly similar to those reported in the Measures section, we did not repeat them for brevity. The collinearity analysis revealed that the maximum VIF was 3.40 (for physical aggression with CWB as the criterion), well below the conservative threshold of 4 for a serious multicollinearity problem (O'Brien 2007).

We obtained the latent variable scores for the LOCs of CWB in the first stage and used them as manifest indicators of CWB in the second stage (Hair et al. 2014). Table 2 reports the results of the second-stage PLS-SEM analysis. As anticipated, the indirect effect of *guanxi* with supervisor on CWB through job satisfaction was significant (−0.11, $t = -2.30$, $p < 0.05$).

The four conditions for mediation specified by Tippins and Sohi (2003) were also met. Figure 2 shows the competing models analysis. Model 2a examined the direct relationship between *guanxi* with supervisor and CWB; Model 2b examined the same relationship with job satisfaction acting as the mediator. Tippins and Sohi's (2003) first requirement was satisfied since the mediated model accounted for more variance in CWB than did the direct model ($R^2 = 0.18$ vs. 0.14; see Fig. 2). The second condition was also met because *guanxi* with supervisor was directly and negatively related to CWB ($\beta = -0.37$, $p < 0.01$; see Fig. 2, Model 2a). As to the third requirement, *guanxi* with supervisor was related directly and positively to job satisfaction ($\beta = 0.30$, $p < 0.01$; see Fig. 2, Model 2b), and job satisfaction was related directly and negatively to CWB ($\beta = -0.36$, $p < 0.05$; see Fig. 2, Model 2b). The fourth criterion was satisfied because when job satisfaction was included as the mediator, the direct effect of *guanxi* with supervisor on CWB became nonsignificant ($\beta = -0.37$, $p < 0.01$ in Model 2a vs. $\beta = -0.09$, $p > 0.10$ in Model 2b; see Fig. 2). These results provided support for Hypothesis 1.

Hypotheses 2 proposed that job satisfaction mediates between *guanxi* with supervisor and CWB-O; Hypothesis 3

Table 2 Direct, indirect, and total effects

Effect on mediator/ criterion	Direct effect		Indirect effect		Total effect
The mediated model explaining CWB					
Job satisfaction ($R^2 = 0.62$)					
Guanxi with supervisor	0.30**	(7.47)			0.30
CWB ($R^2 = 0.18$)					
Guanxi with supervisor	−0.09	(0.56)	−0.11*	(−2.30)	−0.20
Job satisfaction	−0.36**	(2.58)			−0.36
The mediated model explaining CWB-O and CWB-P					
Job satisfaction ($R^2 = 0.60$)					
Guanxi with supervisor	0.29**	(6.98)			0.29
CWB-O ($R^2 = 0.10$)					
Guanxi with supervisor	−0.14	(1.50)	−0.06	(1.42)	−0.20
Job satisfaction	−0.21	(1.09)			−0.21
CWB-P ($R^2 = 0.12$)					
Guanxi with supervisor	−0.07	(0.47)	−0.09*	(2.04)	−0.16
Job satisfaction	−0.30*	(2.20)			−0.30

* $p < 0.05$, ** $p < 0.01$

The *numbers in parentheses* are *t*-values for the direct/indirect effects

Significance tests were based on Student's two-tailed *t* test. The indirect effects and *t*-values were determined using the bootstrapping procedure (272 observations for each subsample, 5,000 subsamples)

proposed that job satisfaction mediates between *guanxi* with supervisor and CWB-P. We examined these two hypotheses by following the same procedure as used in the test of Hypothesis 1. In the first stage, we ran a PLS-SEM analysis that included the hypothesized relationships and the measurement models of *guanxi* with supervisor, job satisfaction, CWB-O, and CWB-P. All the control variables were specified as predictors of job satisfaction, CWB-O, and CWB-P. The results showed that all the measurement models fit the data well. We did not repeat the measurement statistics because they were highly similar to those reported before. The collinearity analysis revealed that the maximum VIF was 3.02 (for verbal aggression with CWB-P as the criterion), well below the conservative threshold of 4 for serious concern of the collinearity problem.

The latent variable scores obtained in the first stage for the LOCs of CWB-O/CWB-P served as the manifest indicators of CWB-O/CWB-P in the second stage. Table 2 shows evidence against Hypothesis 2 that the indirect effect of *guanxi* with supervisor on CWB-O through job satisfaction was not significant (-0.06, $t = 1.42$, $p > 0.10$). Table 2 also shows evidence consistent with Hypothesis 3 that the indirect effect of *guanxi* with supervisor on CWB-P through job satisfaction was significant (-0.09, $t = 2.04$, $p < 0.05$).

We also examined Hypotheses 2 and 3 according to Tippins and Sohi's (2003) criteria. Figure 3 shows the competing models analysis. It is clear that Hypothesis 2 was rejected because job satisfaction did not relate to CWB-O (-0.21, $p > 0.10$; see Fig. 3, Model 3b). Hypothesis 3, however, received supported because all the Tippins and Sohi (2003) criteria were met. Specifically, the first requirement was satisfied since the mediated model accounted for more variance in CWB-P than the direct model ($R^2 = 0.12$ vs. 0.09; see Fig. 3). The second condition was met because *guanxi* with supervisor was directly and negatively related to CWB-P ($\beta = -0.30$, $p < 0.05$; see Fig. 3, Model 3a). As to the third requirement, *guanxi* with supervisor was related directly and positively to job satisfaction ($\beta = 0.29$, $p < 0.01$; see Fig. 3, Model 3b), and job satisfaction was related directly and negatively to CWB-P ($\beta = -0.30$, $p < 0.05$; see Fig. 3, Model 3b). Support for the fourth criterion was obtained because when job satisfaction was included as the mediator, the direct effect of *guanxi* with supervisor on CWB-P became nonsignificant ($\beta = -0.30$, $p < 0.05$ in Model 3a vs. $\beta = -0.07$, $p > 0.10$ in Model 3b; see Fig. 3).

Common Method Bias

Because all the data were self-reported and collected through the same questionnaire during the same period with cross-sectional design, we checked for common method variance. We first conducted a Harman's single-factor test (Podsakoff & Organ, 1986). All the manifest indicators of *guanxi* with supervisor, job satisfaction, and CWB were entered into an exploratory factor analysis using the unrotated principal components method. The results revealed that no single factor accounted for the majority of the variance, and the largest factor only accounted for 25.07 % of the variance. Confirmatory factor analysis also showed that the single-factor model did not fit the data well ($\chi^2 = 8328.56$, $df = 1{,}377$, $\chi^2/df = 6.05$, RMSEA = 0.14, CFI = 0.39, TLI = 0.36, GFI = 0.33).

Second, following Liang et al. (2007), we included in the PLS-SEM analysis explaining CWB (see Fig. 2, Model 2b) a ULMC with all the indicators from the principal constructs (i.e., *guanxi* with supervisor, job satisfaction, and CWB) as its indicators. We found that the average variance of the indicators explained by the principal construct was 0.60, while the average variance of the indicator explained by the ULMC was just 0.016. In addition, most method factor loadings were not significant.

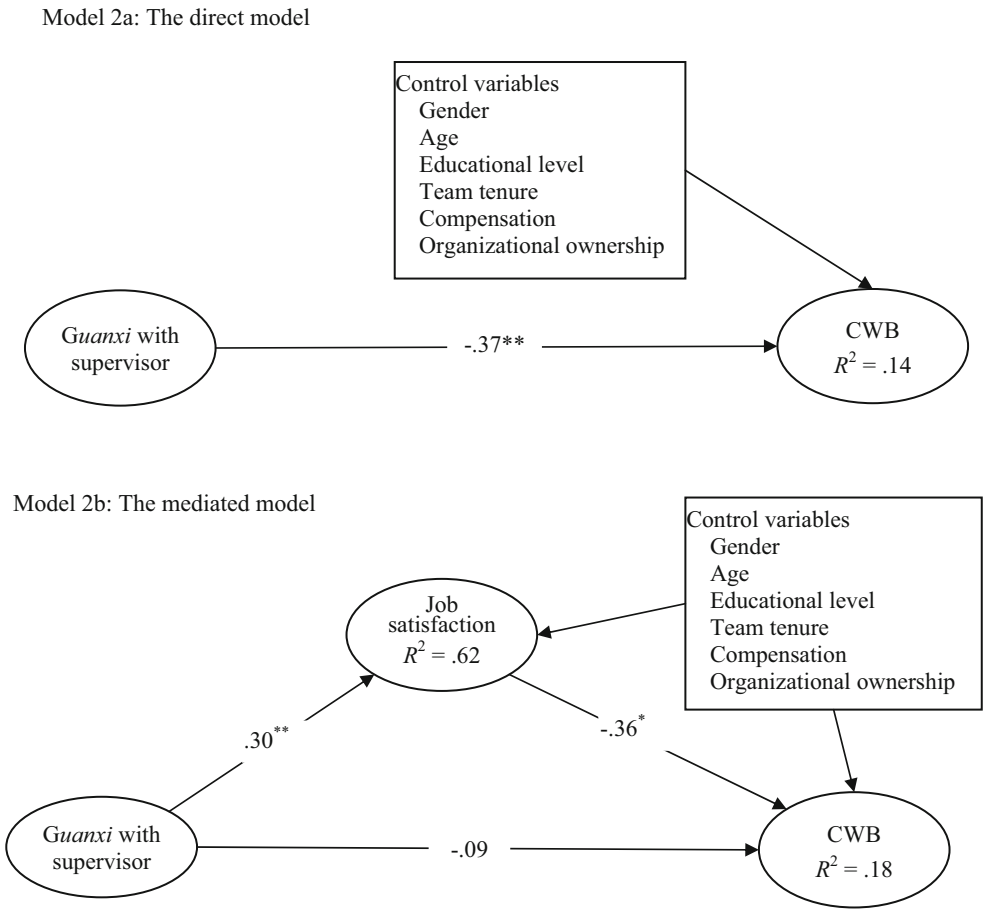

Fig. 2 The competing models explaining CWB. * $p < 0.05$, ** $p < 0.01$. Significance tests were based on Student's two-tailed t test, and t-values were determined using the bootstrapping procedure (272 observations for each subsample, 5,000 subsamples)

Similarly, we controlled for the common method variance in the model predicting CWB-O and CWB-P (see Fig. 3, Model 3b) using the ULMC technique. We found that the average variance of the indicators explained by their principal constructs (i.e., *guanxi* with supervisor, job satisfaction, CWB-O, or CWB-P) was 0.60, and the average method-based variance was just 0.016. In addition, most method factor loadings were not significant.

Although the results of the above analyses did not preclude common method bias, they did suggest that common method variance was not of high concern and thus unlikely to confound the interpretations of our results.

Discussion

The objective of this study was to investigate how *guanxi* with supervisor impacted employees' CWB. The data showed that employees' job satisfaction passed the effect of *guanxi* with supervisor on to overall CWB and CWB-P but not CWB-O.

Theoretical Implications and Suggestions for Future Research

This study contributed to theories on CWB and *guanxi* with supervisor in three ways. First, by confirming *guanxi* with supervisor as an antecedent to CWB, this study expanded the research that related leadership to CWB from two aspects. On one hand, this study highlighted the importance of informal leader–member connections, rather than more formal leadership structure and behaviors (Holtz and Harold 2013; Kessler et al. 2013) in CWB management. On the other hand, this study was among the first to explore the leadership-CWB relationship in a non-Western culture. As little has been known about the dynamics between informal interpersonal ties and CWB, particularly in a global context, we encourage further study along this line of research.

Second, this paper revealed the contingent role of job satisfaction between *guanxi* with supervisor and CWB. In particular, job satisfaction failed to pass the effect of *guanxi* with supervisor on to CWB-O. A possible reason for this nonsignificant finding is that organizations usually

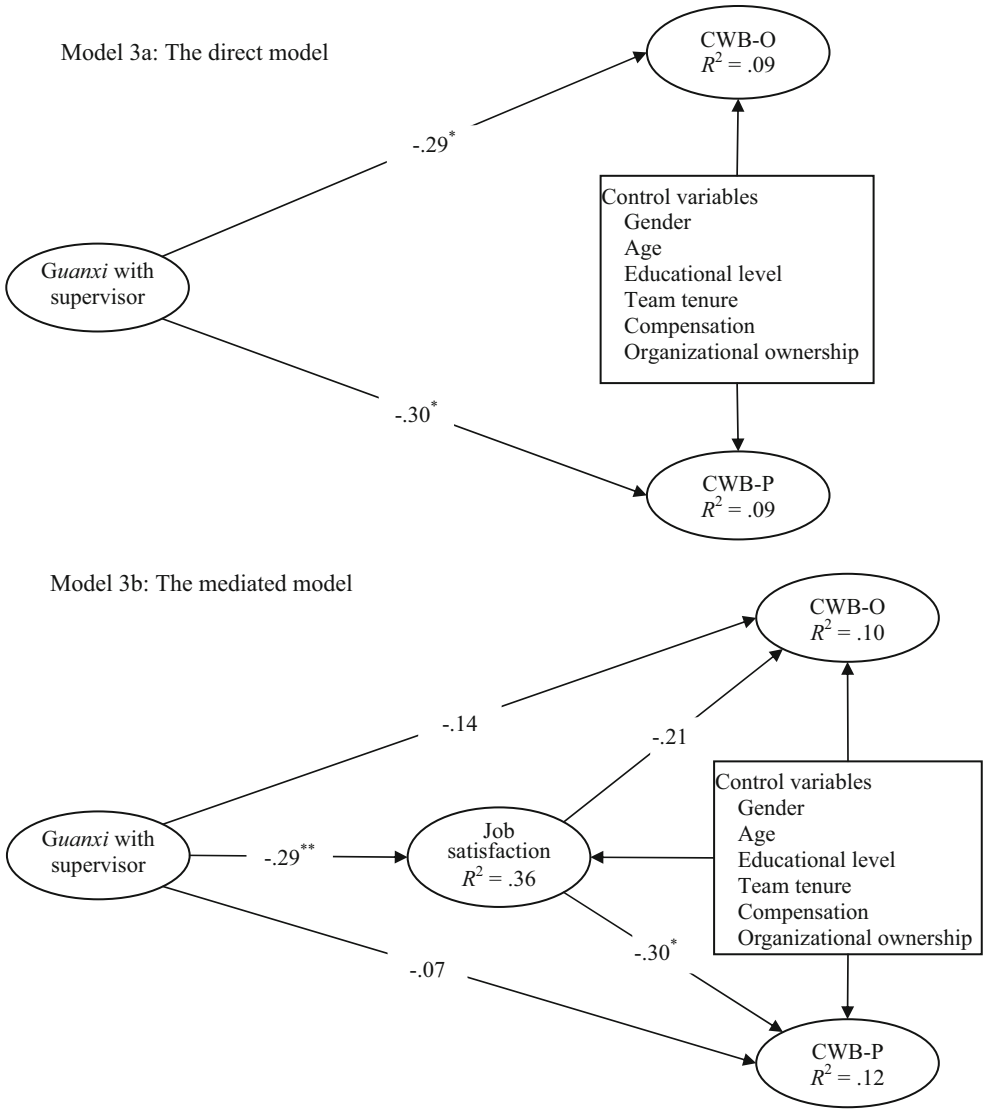

Fig. 3 The competing models explaining CWB-O and CWB-P. * $p < 0.05$, ** $p < 0.01$. Significance tests were based on Student's two-tailed t test, and t-values were determined using the bootstrapping procedure (272 observations for each subsample, 5,000 subsamples)

have high vigilance against CWB-O (Spector et al. 2006). As a result, organizational factors dominate employees' decisions whether to conduct CWB-O, potentially minimizing the impact of other factors. This account, however, can only partially apply to the current situation because *guanxi* with supervisor as a people-centered factor impacted CWB-O even after controlling for employees' demographics (i.e., gender, age, educational level, and team tenure), compensation, and organizational ownership (-0.29, $t = 2.31$; see Fig. 3, Model 3a). A more plausible explanation relates to employees' attribution processes of job dissatisfaction. This study addressed how employees handled job dissatisfaction resulting from *guanxi* with supervisor by conducting CWB. Since *guanxi* with supervisor centers on people, rather than the organization, employees whose job dissatisfaction resulted from this interpersonal tie are more likely to attribute their job dissatisfaction to people-related factors than to organizational factors. Correspondingly, employees are more likely to regain balance through conducting CWB-P than through conducting CWB-O.

The contingent role of job satisfaction between *guanxi* with supervisor and CWB has important implications for future research. Since *guanxi* with supervisor had a "main" effect on CWB-O (see Fig. 3, Model 3a), but job satisfaction did not mediate between them (see Fig. 3, Model 3b), further work is needed to explore how *guanxi* with supervisor affects CWB-O and to identify viable mediators between them. In addition, although job satisfaction was hypothesized to relate more strongly to the organizational

factors than to people-related factors according to the norm of reciprocity, our data yielded the opposite result. This finding provided empirical support for a recent argument that the intentions behind some CWBs were not always readily recognized (Sakurai and Jex 2012). Therefore, future research should take caution in using the norm of reciprocity (Gouldner 1960) to explain CWB.

A third and final contribution of this study related to the debate on the ethics of *guanxi* with supervisor (Zhang et al. 2013). Some scholars extolled *guanxi* with supervisor by linking it to positive attitudes and behaviors, but some others criticized it by linking it to negative work outcomes (Warren et al. 2004). The present study joined this debate from a new perspective by showing how *guanxi* with supervisor helped to reduce CWB, a set of negative behaviors. In addition, in contrast to most of the previous studies that put undue emphasis on either the dark or the bright side of *guanxi* with supervisor, this study presented a more balanced view because it revealed that *guanxi* with supervisor was not equally effective in reducing different types of CWBs. In a sense, this finding echoed a recent study (Chen et al. 2011) that confirmed the positive as well as negative effects of *guanxi* practices on procedural justice simultaneously. Given the suggested complexity of *guanxi* with supervisor, it will be intriguing and fruitful to further explore the intricate mechanisms by which this informal tie impacts work outcomes.

Limitations

A limitation of this study related to the data that were self-reported and collected through the same questionnaire during the same period with cross-sectional research design. Above all, this data collection method could have caused common method bias. Fortunately, Harman's single-factor test (Podsakoff and Organ 1986) and the ULMC technique (Liang et al. 2007) both suggested that common method variance was not a real concern for the interpretation of the results. Furthermore, the cross-sectional data were not sufficient to establish the proposed causal relationships among *guanxi* with supervisor, job satisfaction, and CWB. Future research needs to address this issue using a longitudinal design.

In addition, the self-reported data could have been flawed due to social expectancy bias. In other words, the respondents could have overstated the quality of *guanxi* with supervisor while underreported the frequency of CWB. This bias may partly explain the relatively low frequency of the reported CWB in the data. Previous research, however, revealed that CWB still tended to be low even when it was other-reported (e.g., the boss; Mount et al. 2006) or measured repeatedly (e.g., Meier and Spector 2013). Therefore, there may be other reasons for the low frequency of CWB. One possible reason had to do with the social norm that people should not harm others and/or their organizations. Given the collective culture in China, we expect this social norm to be effective in restraining CWB in the workplace. Another reason related to the formative scale of CWB in this study. Formative indicators, unlike reflective ones, do not have to be highly correlated with one another. As far as CWBs concerned, people intend to exhibit only certain CWBs in response to perceived disequilibria in the workplace (Spector et al. 2006). As a result, the mean values of CWBs tended to be low at the individual level. Future research can take two measures to handle the seemingly low frequency of CWB. One is to use data collection techniques that are not influenced by social expectancy bias, for example, using attendance records or other-rated scales; the other is to focus on specific CWBs because the scores for specific CWBs had a wider range than that for the overall CWB, at least in the present study.

Another limitation of this study had to do with the measurement of CWB. As an improvement upon prior work on CWB measurement, we established a reflective-formative HCM of CWB and examined this measurement model and the hypothesized relationships simultaneously. However, there were alternative measurement models of CWB. To check the robustness of the test results for Hypothesis 1, we ran PLS-SEM with different measurement models of CWB, all other things being equal. Specifically, we examined three alternative measurement models of CWB: (1) a first-order formative model; (2) a formative–formative HCM with the LOCs from CWB-O and CWB-P as its LOCs and the manifest indicators as the formative indicators of these LOCs; and (3) a reflective-formative HCM with CWB-O and CWB-P as its LOCs and the latent variable scores for CWB-O and CWB-P in their respective models as their reflective indicators. The results showed that Hypothesis 1 held across these measurement models of CWB.

Hypotheses 2 and 3 were also retested with alternative CWB-O and CWB-P measurement models, all other things being equal. Specifically, CWB-O and CWB-P were measured with two types of alternative models: (1) first-order formative models; and (2) formative–formative HCMs with their respective dimensions as the LOCs and the manifest indicators as the formative indicators of the LOCs. The results rejected Hypothesis 2 but supported Hypothesis 3, consistent with what we had found.

Practical Implications

In a practical sense, the present findings suggest that building and developing *guanxi* with supervisor be a

feasible approach to CWB management in Chinese companies. However, although this informal connection is effective in reducing both CWB-O and CWB-P, it impacts CWB-O and CWB-P through different mechanisms. As shown in this study, job satisfaction successfully passes the effect of *guanxi* with supervisor on to CWB-P but not to CWB-O. Therefore, managers should take caution to identify effective "translator(s)" before they apply *guanxi* strategy in CWB management.

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Appendix

See Table 3.

Table 3 Counterproductive work behaviors by subscale

CWB item	Sub-category
CWB-O	
Purposely damaged a piece of equipment or property	Sabotage
Purposely wasted your employer's materials/supplies	Sabotage
Purposely dirtied or littered your place of work	Sabotage
Stayed home from work and said you were sick when you were not	Withdrawal
Taken a longer break than you were allowed to take	Withdrawal
Left work earlier than you were allowed to	Withdrawal
Purposely did your work incorrectly	Production deviance
Purposely worked slowly when things needed to get done	Production deviance
Took supplies or tools home without permission	Theft
Stolen something belonging to your employer	Theft
Put into be paid for more hours than you worked	Theft
Told people outside the job what a lousy place you work for	Abuse
Been nasty or rude to a client or customer of the company	Abuse
CWB-P	
Threatened someone at work, but not physically	Verbal aggression
Verbally abused someone at work	Verbal aggression
Started an argument with someone at work	Verbal aggression
Made an obscene gesture (the finger) to someone at work	Physical aggression
Hit or pushed someone at work	Physical aggression
Threatened someone at work with violence	Physical aggression
Insulted or made fun of someone at work	Teasing
Made fun of someone's personal life	Teasing
Played a mean prank to embarrass someone at work	Teasing
Insulted someone about their job performance	Undermining
Did something to make someone at work look bad	Undermining
Blamed someone at work for error you made	Undermining
Purposely failed to follow instructions	Other behavior
Stole something belonging to someone at work	Other behavior

Definitions of the sub-categories: *Sabotage* defacing or destroying physical property belonging to the employer; *Withdrawal* restricting the amount of time working to less than is required by the organization; *Production deviance* purposeful failure to perform job tasks effectively the way they are supposed to be performed; *Theft* take money or physical property belonging to the employer without permission; *Verbal aggression* abuse behaviors against others that harm through making threats or nasty comments; *Physical aggression* abuse behaviors that harm or intend to harm others physically; *Teasing* the act of harassing others playfully or maliciously; *Undermining* behaviors that weaken others' abilities to work effectively; *Other behavior* behaviors against others that cannot be included in other sub-categories

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