Counterproductive behaviour at work: an investigation into reduction strategies

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The present study examined the interrelation of personality characteristics, organizational justice, organizational citizenship behaviour (OCB), and counterproductive work behaviour (CWB). An anonymous questionnaire survey was conducted, with 1662 participants representing a wide variety of jobs across heterogeneous organizations in Thailand. Statistical analysis indicated that CWB can be predicted by the following personality characteristics; conscientiousness, agreeableness, self-esteem, extraversion, neuroticism and openness to experience. Moderation analysis discovered that the association between personality characteristics and CWB is moderated by three factors; distributive justice, interactional justice and OCB. Structural Equation Modelling was adopted in order to examine the efficacy of the identified moderators, and revealed that interactional justice has the strongest moderating effect, followed by distributive justice and finally OCB. Implications of the findings to organizational management and personnel practitioners are discussed accordingly, including; that the occurrence of CWB could be reduced through the implementation of organizational justice enhancement policies; and that the prevalence of OCB atmosphere at work could also help alleviate the impact of personality characteristics on CWB.

Keywords: counterproductive work behaviour; organizational citizenship behaviour

Introduction

Counterproductive Work Behaviour (CWB) is commonly defined as voluntary or intentional behaviour that acts against the interests of the organization. CWB has found itself to be the focus of extensive research recently due to the pervasive and costly consequence of such behaviours which affects both the organizations and their employees. Contemporary studies have revealed subtle interrelations between employees’ deviant work behaviours and their individual characteristics, such as the Big-Five personality traits, locus of control and self-esteem (Dalal 2005; Mount, Ilies and Johnson 2006; Smithikrai, in press). While the findings of these studies are valuable and informative, verifying that certain personality characteristics are more likely to elicit CWB, the practical application of these findings is compromised for the following reasons. First, Pervin and John (2004) claimed that personality characteristics may be relatively stable and hard to manipulate, which leaves little space left for managers to manage the influence of such personality traits on CWB (This paper recognizes the drawback of Pervin and John’s viewpoint and will discuss its influences at a later stage). Second, due to the prevalence of equal opportunity policies, the exclusion of individuals based on personality traits identified during recruitment is controversial.
It is for this reason that the current study does not intend to develop tests with the objectives of identifying those prospective employees with personality characteristics that indicate the potential to engage in CWB. Rather, the aim of this study is to examine whether the relationships between personality characteristics and CWB are affected by other variables. The findings will have implications for the management of CWB, potentially developing ways to help organizational leaders and managerial practitioners to alleviate the effect of personality characteristics on CWB, reduce the occurrence of CWB, and contribute to overall organizational performance.

The nature of counterproductive work behaviour

CWB is a class of behaviours that acts against the interests of the organization, which individuals, usually, consciously choose to engage in. Examples of CWB may include playing cruel pranks, bullying/swearing at colleagues, falsifying expense reports, sabotaging others’ work and even theft. The common theme throughout these behaviours is that they are harmful to the organization, either by directly affecting its property or ability to function, or by hurting its employees in such a way that reduces their effectiveness.

There is no doubt that CWBs violate organizational norms, are detrimental to the interests of the organization, and hinder the attainment of organizational overall goals. CWBs have been described as deviance (Robinson and Bennett 1995), antisocial behaviour (Giacalone, Riordan and Rosenfeld 1997), unruliness (Hunt 1996), destructive and hazardous behaviours (Murphy 1993), and have been shown to be pervasive and costly both to organizations and to employees’ well being.

For example, 58% of women reported experiencing potentially harassing behaviours and 24% reported having experienced sexual harassment at work (Ilies, Hauserman, Schwochau and Stibal 2003). According to the American Management Association (2005), approximately 25% of companies have fired employees for misuse of the internet. Moreover, 95% of organizations find themselves the targets of employee theft and fraud (Case 2000).

These behaviours cost US businesses approximately $50 billion annually, and may account for as many as 20% of failed businesses (Coffin 2003). Although more difficult to quantify, the negative psychological impact of workplace deviance can translate into reduced employee morale, higher rates of absenteeism and turnover, and lower productivity (Hoel, Einarsen and Cooper 2003).

The dimensionality of CWB is still debated by experts; however, for the purposes of measurement, the current study uses a two-dimensional model that has received empirical support (Robinson and Bennett 1995; Gruys and Sackett 2003) and distinguishes between individual- and organization-targeted CWBs. Although CWBs can also be analyzed using other dimensions (e.g., task relevance and severity; Bennett and Robinson 2000), the interpersonal–organizational dimensions have consistently emerged in recent conceptual and empirical work on CWB, and appear to be the most relevant for analyses aimed as expounding the processes through which personality influences CWBs.

CWB and personality characteristics

One of the long-held goals of managerial science has been to establish a model that can suitably describe human personality characteristics and predict their effects on behaviour at work. There are currently a handful of models that have risen to prominence, although
some models are more widely accepted than others, whereas support for others seems to come and go in cycles (McCrae et al. 2005). One of the more prominent models in managerial science is the Five-Factor Model of personality (*FFM*: McCrae and Costa 1997), which incorporates five different variables into a conceptual model for describing personality.

Specifically, the FFM dimensions are *neuroticism*, *extraversion*, *openness to experience*, *agreeableness*, and *conscientiousness*. Neuroticism refers generally to a lack of positive psychological adjustment and emotional stability. Extraversion is characterized by a keen interest in other people and external events, and venturing forth with confidence into the unknown. Openness to experience refers to the degree to which an individual is open to new experiences/new ways of doing things. Agreeableness refers to how compatible people are with others, or how able they are to get along with others. Conscientiousness describes socially prescribed impulse control that facilitates task and goal directed behaviour, such as thinking before acting, delaying gratification, following norms and rules, and planning, organizing and prioritizing tasks (McCrae and Costa 1997; Smithikrai 2007).

Since the 1990s, research examining the link between personality and work behaviour has intensified. The FFM dimensions have been replicated in a variety of studies across countries and cultures and remain fairly stable over time (McCrae et al. 2005). Studies have indicated that conscientiousness was the most relevant of the personality factors which predict job performance, both in Western context (e.g., Mount and Barrick 1995; Salgado 1997) and in Asian context (e.g., Smithikrai 2007). The FFM of personality has also been studied as a predictor of CWB; for example, conscientiousness has been found to be the strongest predictor of CWB (Dalal 2005; Hough 1992; Salgado 2002).

A meta-analysis by Berry, Ones and Sackett (2007) found that CWB-I (individual targeted) and CWB-O (organization-targeted) are moderately correlated with agreeableness, conscientiousness, and emotional stability than with extraversion or openness to experience. Agreeableness is strongly correlated with CWB-I, and conscientiousness are strongly correlated with CWB-O. Consistent with the western findings, Smithikrai (in press) found that agreeableness and conscientiousness are the two attributes that exert significant effects on CWB in the Thai population. In addition, individuals with low self-esteem may also be related with higher occurrence of CWB. In a similar vein, Lin (2005) argues that individuals with low self-esteem usually respond negatively to comments (or criticisms) different from their own. Their behaviour may upset themselves and increase dissatisfaction with their job, which then triggers the notion of counterproductive behaviour at work (Lin 2005). In view of these empirical findings, this paper infers that personality characteristics play a crucial role in determining CWB.

**CWB and organizational justice**

Organizational justice is concerned with individual perceptions of fairness and justice treatment in the workplace. Organizational justice has been well-studied in the field of management and there are three forms of justice that are widely discussed; *distributive justice*, *procedural justice* and *interactional justice*.

According to Cohen-Charash and Spector (2001), the study of fairness in management commenced with Adams’ (1965) work on equity theory, which emphasize the perceived fairness of outcomes (i.e., distributive fairness). *Distributive justice* refers to people's perceptions of the fairness of the outcomes they receive relative to their contributions and to the outcomes and contributions of others. Following the inability of equity theory
and other distributive justice models to completely explain and predict peoples’ reactions to perceived injustice, the focus of research moved on to procedural justice (see Cropanzano and Randall 1993, for a historical review).

The study of procedural justice extended from the study of distributive justice because findings showed that the distribution of rewards was not always as important as the process by which they were allocated (Lind and Tyler 1988). Procedural justice involves people’s perceptions of the fairness of the processes by which outcomes are reached.

However, during this time another conceptualization of organizational justice emerged; interactional justice. According to Bies and Moag (1986), interactional justice focuses on the interpersonal side of organizational practices; specifically, the interpersonal treatment and communication by management to employees.

Empirical studies have attempted to link justice perceptions with CWBs, with empirical investigations revealing that employees may respond to perceptions of unfair treatment with negative emotions, such as anger, outrage, resentment and desire for retribution (Folger 1993; Skarlicki and Folger 1997). The perception of organizational injustice may also have a subtle impact on organizational dynamics, which would then trigger a range of direct and indirect behavioural responses such as theft (Greenberg 1990), vandalism, sabotage, reduction of citizenship behaviours, withdrawal and resistance to change (Jermier, Knights and Nord 1994). Skarlicki, Folger and Tesluk (1999) discovered that the relationship between perceived injustice and organizational retaliatory behaviour (ORB), or CWB, is moderated by personality factors such as negative affectivity and agreeableness.

The aforementioned discussion of personality and CWB implies that employees who pose certain personality traits are more likely to demonstrate CWBs. Based on previous research on organizational justice, the current study assumes that, when organizational injustice is present, employees will demonstrate more CWBs. In other words, organizational justice is a potential moderator of CWB due to the effect of the level of organizational justice on the impact of individual personality traits on CWB.

CWB and organizational citizenship behaviour

Organizational citizenship behaviour (OCB) is generally defined as behaviour that goes beyond the formal requirements of the job and is beneficial to the organization. Examples of OCB may include assisting colleagues with their tasks, devoting time to assist new entrants to the organization, defending their organizational reputation, or even voluntary salary-cut to support the organizations. Yet there are different opinions about what causes OCB. Organ and Konovsky (1989) argued that OCB is an altruistic act, in which individuals contribute their efforts to both colleagues and organizations for selfless reasons. Such altruistic behaviours may be interpreted using either cognitive determinants (e.g., doing this task brings long-term interests to the department) or affective determinants (e.g., I belong to the organization, or I am willing to help my colleagues, as they are important to me and the company). However, OCB may also be explained by social exchange theory; Hui, Lam and Law (2000) revealed that OCB can be a simple tactic for seeking a desired outcome, and once the outcome is achieved, the occurrence of OCB decreases immediately. In other words, demonstrating OCB also brings interests to the individual in the long term.

From an organizational perspective, OCB can be a crucial aspect of an employee’s behaviour that contributes to overall organizational effectiveness. Podsakoff, Ahearne and MacMenzie (1997) discovered that higher levels of OCB among employees were associated with the overall productivity and fewer defects. Spector (2006) claimed that
OCB is most likely to occur when employees are satisfied with their jobs, have high levels of affective commitment, feel they are treated fairly, or have good relations with their colleagues. Bommer, Miles and Grover (2003) claim that OCB is contagious, as people who work in groups where people tend to demonstrate OCB are more likely to perform OCB themselves. Diefendorff, Brown Kamin and Lord (2002) also indicated that OCB is predicted by the roles of job involvement and work centrality.

In terms of OCB–CWB relationships, several meta-analyses have found that OCB and CWB share a moderately negative correlation, and represent two distinct constructs rather than a single continuum (Berry et al. 2007; Dalal 2005; Sackett, Berry, Wiemann and Laczo 2006). These findings are valuable and informative for several reasons. First, when people demonstrate more OCBs, their overall organizational performance improves. Second, OCB is not a constant variable, rather it changes along with a number of factors, including: individual desire, co-worker’s attitude toward the organization, or the prevalence of voluntary overtime at work. Third, OCB may act as a moderator to work performance, as higher levels of OCBs create better atmosphere at work (e.g., colleagues help each other, or voluntary cover-up for absentees), in which employees feel more positive about their work and are more willing to contribute to their organizations. The present study suggests that where this kind of work environment prevails, the occurrence of CWB will decline.

**Research framework**

The current study has prudently scrutinized the association between personality characteristics and CWB from different perspectives. The potential moderating effects of organizational justice and OCB are critically discussed in line with empirical studies and literature. The current study, therefore, suggests that CWB is predicted by personality characteristics (PC), such as personality traits and self-esteem; the PC–CWB relationship is moderated by both organizational justice and OCB. In order to further understand the relationships between these variables, the present study proposes four specific hypotheses:

**Hypothesis 1:** Distributive justice moderates the PC–CWB association.

**Hypothesis 2:** Procedural justice moderates the PC–CWB association.

**Hypothesis 3:** Interactional justice moderates the PC–CWB association.

**Hypothesis 4:** OCB moderates the PC–CWB association such that PC effects on CWB become stronger as OCB decreases.

**Method**

**Design and procedure**

This project adopted a cross-sectional approach using a large-scale questionnaire survey in Thailand. Participants from heterogeneous occupations and organizations were recruited. Participants were contacted through their line managers accordingly, and managers were approached using snowball sampling technique. This sampling technique enriches the data’s representativeness, as it helps collect voices of employees from different occupations with different position. Similar sampling techniques are also used in contemporary studies of organizational behaviour and justice (c.f., Kwok, An and Ho 2005; Mount et al. 2006). Questionnaires were distributed in booklet form, along with a cover-letter assuring anonymity and voluntary participation. The research aim was also briefly mentioned.
Sample
The research sample comprised of 1662 employees working in the upper north regions of Thailand, from the following professions; nursing, university, government sector, factory work and private firms. The mean age was 31.16 years, 68% of the respondents were female and 54.2% were graduates, having earned a Bachelor’s degree. The majority of the sample (95.70%) occupied operation-level positions. The mean employment tenure was 7.04 years.

Measures
The organizational citizenship behaviour scale (Lee and Allen 2002), which is comprised of 16 items, was used to measure OCB. Responses were recorded using a 5-point Likert scale (0 = never, 4 = always) which rated how often they engaged in certain behaviours. Sample items include: ‘Assist others with their duties’ and ‘Attend functions that are not required, but that help the organizational image’. The scale was translated to Thai with back-translation to ensure language equivalence and appropriateness. The internal consistency alpha was satisfactory: OCB (α = .90).

The counterproductive work behaviours scale was compiled from two standardized scales (Robinson and Bennett 1995; Gruys and Sackett 2003), and was used to assess CWB. The objective was to include behaviours that represented the 11 categories of CWB that have been empirically validated by Gruys and Sackett (2003), as well as Robinson and Bennett’s (1995) taxonomy of organizational deviance. The content validity of the instrument was assessed by three chartered psychologists. There were 22 items in total, and responses were recorded using a 5-point Likert scale (0 = never, 4 = always) which rated how often they engaged in certain behaviours. Sample items included: blaming mistakes on others and unauthorized absence. The scale was translated to Thai with back-translation to ensure language equivalence. The internal consistency alpha was satisfactory: CWB (α = .93).

The NEO-FFI-S (Costa and McCrae 1992) is a 60-item self-report questionnaire that yields subscale scores for each of the five major dimensions of personality; neuroticism (N), extraversion (E), openness (O), agreeableness (A) and conscientiousness (C). Participants’ responses were recorded using a 5-point Likert scale (0 = strongly disagree, 4 = strongly agree). The present study used the authorized Thai translation of the NEO-FFI-S (Smithikrai 2007) to collect personality data from the sample. The internal consistency alphas were satisfactory: N (α = .73), E (α = .74), O (α = .65), A (α = .65) and C (α = .71).

Participants’ global level of self-esteem was measured using a scale developed by Rosenberg (1965). This scale is one of the most frequently used instruments for measuring self-esteem (Brown 1998). There were 10 items in total, and responses were recorded using a 5-point Likert scale (0 = strongly disagree, 4 = strongly agree). Sample items included: ‘On the whole, I am satisfied with myself’ and ‘I feel I do not have much to be proud of’. The scale was translated to Thai with back-translation to ensure language equivalence. The internal consistency alpha was satisfactory (α = .80).

The three forms of organizational justice (distributive, procedural, and interactional justice) were measured using the 11 items developed by Rahim, Magner, Antonioni and Rahman (2001). Each item was rated using a 5-point Likert scale (0 = strongly disagree, 4 = strongly agree). Sample items included: ‘I believe that my rewards accurately reflect my contributions to the organization’, ‘My organization has in place formal channels that allow employees to express their views and opinions before decisions are made’, and ‘My supervisor treats me in a kindly manner’. The scale was translated to Thai with
back-translation to ensure language equivalence and appropriateness. The internal consistency alphas were satisfactory: distributive ($\alpha = .76$), procedural ($\alpha = .80$), and interactional ($\alpha = .87$).

Additionally, demographical characteristics of the respondents were also gathered in the survey, including: gender, age, educational levels, job tenure and job rank.

Results

The descriptive statistics, reliabilities, and intercorrelations among the variables are shown in Table 1. Mean scores and standard deviation are obtained by averaging the items, which helps explain the means and their corresponding valence within the scale. For example, in terms of Extraversion scale (i.e., 5-point Likert scale), higher means represent more extraversion-oriented ($4 = $ strongly agree), whereas lower means mean less extraversion-oriented ($0 = $ strongly disagree). Alpha ($\alpha$) shows the internal consistency reliability, that is, it measures how well a set of items (or variables) measure a single unidimensional latent construct. Correlation coefficients represent the levels of linear relationship between two variables (Field 2005).

To examine the hypotheses, Baron and Kenny’s (1986) moderation analytic procedure was adopted. According to Baron and Kenny’s equation, the moderating effect is only verified if the following three conditions are achieved: (a) an independent variable (IV) significantly predicts a dependent variable (DV); (b) a moderator (M) significantly predicts the same DV; and finally (c) the IV-M interaction significantly predicts the DV.

Following this analytic procedure, a series of regression analyses were conducted to examine the associations between CWB and all relevant variables using the Stepwise entry method, in which CWB was a dependent variable and all personality characteristics were predictors. Statistical analysis revealed that such association is moderately strong ($R = .560$). FFM (five variables) and self-esteem jointly accounted for 31.1% of the variation in CWB ($\Delta R^2$). The results of collinearity diagnostics were reasonable, indicating that multi-collinearity is not severe between predictors ($CI = 33.510$). The regression coefficients of all characteristics are shown in Table 2.

The standardized regression coefficients confirmed that FFM (five variables) and Self-esteem were valid predictors of CWB. These findings revealed that employees possessing certain personality characteristics were less likely to demonstrate CWB; specifically, the higher the level of these characteristics, the lower the occurrence of CWB ($conscientiousness \beta = - .292, p < .001; agreeableness \beta = - .254, p < .001; self-esteem \beta = - .115, p < .001; extraversion \beta = - .085, p < .001; neuroticism \beta = - .084, p < .01; openness to experience \beta = - .047, p < .05$).

In addition, the current study regards both organizational justice and OCB as moderators of CWB. Regression analyses show that CWB was significantly predicted by: distributive justice ($\beta = - .25, p < .001$), OCB ($\beta = - .17, p < .001$), interactional justice ($\beta = - .09, p < .01$), but not procedural justice ($\beta = - .25, p = .58$). For this reason, Procedural justice was eliminated from the moderational analyses.

Moderator: distributive justice

Following Baron and Kenny’s (1986) formula, a series of moderational analyses were conducted. As Table 3 shows, the association between CWB and its predictors can be moderated by distributive justice in four aspects, including: CWB-conscientiousness ($\beta = .884, R = .531, \Delta R^2 = .280, p < .001$), CWB-agreeableness ($\beta = .832, R = .495,$
Table 1. Inter-correlations across variables (N = 1662).

| Variable                              | Mean | SD  | α    | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  |
|---------------------------------------|------|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1. Organizational citizenship behaviour| 2.43 | .63 | .90  |     |     |     |     |     |     |     |     |     |     |     |
| 2. Counterproductive work behaviour    | .60  | .41 | .93  | -.27** |     |     |     |     |     |     |     |     |     |     |
| 3. Neuroticism                        | 2.21 | .56 | .73  | -.26** | .21** |     |     |     |     |     |     |     |     |     |
| 4. Extraversion                       | 2.72 | .48 | .74  | .45** | -.36** | -.40** |     |     |     |     |     |     |     |     |
| 5. Openness                           | 2.51 | .45 | .65  | .34** | -.29** | -.29** | .43** |     |     |     |     |     |     |     |
| 6. Agreeableness                      | 2.38 | .49 | .65  | .31** | -.41** | -.44** | .42** | .30** |     |     |     |     |     |     |
| 7. Conscientiousness                 | 2.90 | .42 | .71  | .35** | -.47** | -.27** | .45** | .39** | .33** |     |     |     |     |     |
| 8. Self-esteem                        | 2.73 | .46 | .80  | .37** | -.39** | -.48** | .50** | .39** | .39** | .53** |     |     |     |     |
| 9. Distributive justice               | 2.03 | .83 | .76  | .24** | -.34** | -.26** | .25** | .15** | .25** | .28** | .21** |     |     |     |
| 10. Procedure justice                 | 2.12 | .76 | .80  | .34** | -.29** | -.28** | .31** | .17** | .30** | .27** | .19** | .62** |     |     |
| 11. Interactional justice             | 2.41 | .76 | .87  | .39** | -.28** | -.31** | .35** | .21** | .30** | .25** | .27** | .44** | .69** |     |

Note: **p < .01.
Table 2. Regression coefficients of predictors (N = 1662).

| Variables          | \(B\)        | Std. error | Beta (\(\beta\)) |
|--------------------|-------------|------------|------------------|
| Constant           | 2.645       | .099       |                  |
| Conscientiousness  | -.024       | .002       | -.292***         |
| Agreeableness      | -.018       | .002       | -.254***         |
| Self-esteem        | -.010       | .002       | -.115***         |
| Extraversion       | -.006       | .002       | -.085***         |
| Neuroticism        | -.005       | .002       | -.084**          |
| Openness to experience | -.004     | .002       | -.047*           |

Notes: Total R = .560; R² = .314; ΔR² = .311 (*p < .05; **p < .01; ***p < .001).

Table 3. Moderational analyses of distributive justice (N = 1662).

| Variables          | \(\beta\) of Predictors (P) | \(\beta\) of Moderator (M) | \(\beta\) of (P) x (M) | Total R | ΔR² |
|--------------------|-------------------------------|-----------------------------|------------------------|---------|-----|
| Conscientiousness  | -.667***                     | -.994***                    | .884***                | .531    | .280|
| Agreeableness      | -.687***                     | -.915***                    | .832***                | .495    | .244|
| Extraversion       | -.615***                     | -1.01***                    | .892***                | .464    | .214|
| Neuroticism        | .171**                       | -.258***                    | -.055 (p = .44)        | .362    | .129|
| Openness to experience | -.527***                  | -.943***                    | .745***                | .436    | .188|
| Self-esteem        | -.628***                     | -1.04***                    | .897***                | .488    | .237|

Notes: *p < .05; **p < .01; ***p < .001.

\(ΔR² = .244, p < .001\), CWB-extraversion (\(\beta = .892, R = .464, ΔR² = .214, p < .001\)), CWB-openness to experience (\(\beta = .745, R = .436, ΔR² = .188, p < .001\)) and CWB-self-esteem (\(\beta = .897, R = .488, ΔR² = .237, p < .001\)). However, distributive justice does not moderate the CWB-neuroticism (\(p = .44\)).

**Moderator: interactional justice**

The same analytic procedure applies here. As Table 4 shows, the association between CWB and its predictors can be moderated by interactional justice in three aspects, including: CWB-conscientiousness (\(\beta = .831, R = .510, ΔR² = .259, p < .001\)), CWB-agreeableness (\(\beta = .569, R = .450, ΔR² = .201, p < .001\)), and CWB-openness to experience (\(\beta = .352, R = .371, ΔR² = .136, p < .05\)). However, interactional justice does not moderate the CWB-extraversion (\(p = .12\)), CWB-neuroticism (\(p = .10\)), or CWB-self-esteem (\(p = .52\)).

**Moderator: organizational citizenship behaviour**

The same analytic procedure applies here. As Table 5 shows, the association between CWB and its predictors can be moderated by organizational citizenship behaviour in three aspects, including: CWB-Agreeableness (\(\beta = .439, R = .442, ΔR² = .194, p < .001\)), CWB-openness to experience (\(\beta = .710, R = .359, ΔR² = .127, p < .001\)), and CWB-self-esteem (\(\beta = .666, R = .422, ΔR² = .177, p < .001\)). However, organizational citizenship behaviour does not moderate the CWB-conscientiousness (\(p = .15\)), CWB-extraversion (\(p = .08\)), or CWB-neuroticism (\(p = .23\)).
The aforementioned statistical analyses have uncovered meaningful findings, revealing that the associations between personality characteristics and CWB are moderated by distributive justice, interactional justice and OCB, respectively. These findings imply that personality characteristics may have stronger, more negative relationships with CWB when distributive justice, interactional justice and OCB are low. To further examine these findings and the efficacy of moderating effect, the Structural Equation Modelling (SEM) technique was carried out. As prior moderation analyses verified the roles of three moderators (i.e., distributive justice, interactional justice and OCB), the efficacy of these moderators was thus regarded as latent variables in the PC-CWB association.

To account for all the variables together, three models are proposed (Figures 1, 2, and 3), in which personality characteristics predict the CWB and latent variables (oval shape) stand for the moderating efficacy on PC-CWB association.

In terms of model fit index, the present study did not adopt Chi-square ($\chi^2$) and degree of freedom ($df$), as these indices are easily affected by the sample size and data distribution (Bentler 1986). Due to this, the present study adopted more accurate fit indices, including: goodness of fit index (GFI; Jöreskog and Sörbom 1988), comparative fit index (CFI; Bentler 1990), and root-mean-square error of approximation (RMSEA; Brown and Cudeck 1993).

Three discrete SEMs were conducted to analyse the aforementioned moderators, that is, distributive justice, interactional justice and OCB. In Figure 1, $M^1$ stands for the moderating value of distributive justice ($\chi^2$ (14, $N = 1662) = 173.80$, $p < 0.001$; GFI = .97; CFI = .97; RMSEA = .083). In Figure 2, $M^2$ stands for the moderating value

### Table 4. Moderational analyses of interactional justice ($N = 1662$).

| Variables          | $\beta$ of Predictors (P) | $\beta$ of Moderator (M) | $\beta$ of (P) x (M) | Total R | $\Delta R^2$ |
|--------------------|---------------------------|---------------------------|----------------------|---------|--------------|
| Conscientiousness  | -.746****                 | -.856***                 | .831***              | .510    | .259         |
| Agreeableness      | -.638****                 | -.582***                 | .569***              | .450    | .201         |
| Extraversion       | -.409****                 | -.347**                  | .234 ($p = .12$)    | .401    | .159         |
| Neuroticism        | .021 ($p = .78$)          | -.351***                 | .141 ($p = .10$)    | .309    | .094         |
| Openness to experience | -.404***              | -.503***                 | .352*                | .371    | .136         |
| Self-esteem        | -.380***                 | -.268*                   | .102 ($p = .52$)    | .429    | .183         |

Notes: *$p < .05$; **$p < .01$; ***$p < .001$.

### Table 5. Moderational analyses of organizational citizenship behaviour ($N = 1662$).

| Variables          | $\beta$ of Predictors (P) | $\beta$ of Moderator (M) | $\beta$ of (P) x (M) | Total R | $\Delta R^2$ |
|--------------------|---------------------------|---------------------------|----------------------|---------|--------------|
| Conscientiousness  | -.533****                 | -.321*                   | .256 ($p = .15$)    | .487    | .236         |
| Agreeableness      | -.595****                 | -.458***                 | .439***              | .442    | .194         |
| Extraversion       | -.433****                 | -.319**                  | .271 ($p = .08$)    | .386    | .147         |
| Neuroticism        | .257**                    | -.152*                   | -.120 ($p = .23$)   | .310    | .094         |
| Openness to experience | -.578***              | -.695***                 | .710***              | .359    | .127         |
| Self-esteem        | -.650***                 | -.622***                 | .666***              | .422    | .177         |

Notes: *$p < .05$; **$p < .01$; ***$p < .001$.

### Path analysis of moderators

The aforementioned statistical analyses have uncovered meaningful findings, revealing that the associations between personality characteristics and CWB are moderated by distributive justice, interactional justice and OCB, respectively. These findings imply that personality characteristics may have stronger, more negative relationships with CWB when distributive justice, interactional justice and OCB are low. To further examine these findings and the efficacy of moderating effect, the Structural Equation Modelling (SEM) technique was carried out. As prior moderation analyses verified the roles of three moderators (i.e., distributive justice, interactional justice and OCB), the efficacy of these moderators was thus regarded as latent variables in the PC-CWB association. To account for all the variables together, three models are proposed (Figures 1, 2, and 3), in which personality characteristics predict the CWB and latent variables (oval shape) stand for the moderating efficacy on PC-CWB association.
of *interactional justice* ($\chi^2 (5, N = 1662) = 43.83, p < 0.001; \text{GFI} = .99; \text{CFI} = .98; \text{RMSEA} = .068$). In Figure 3, $M^3$ stands for the moderating value of *organizational citizenship behaviour* ($\chi^2 (5, N = 1662) = 35.44, p < 0.001; \text{GFI} = .99; \text{CFI} = .99; \text{RMSEA} = .061$). The fit indices (i.e., GFI, CFI and RMSEA) of three SEMs were acceptable, indicating that these structural diagrams are adequate. Findings from these SEM models are meaningful and interpreted in several ways:

First, the moderator *distributive justice* stems from five variables (personality characteristics), including: conscientiousness ($\beta = 3.58$, $p < .001$), agreeableness ($\beta = 3.37$, $p < .001$), extraversion ($\beta = 3.95$, $p < .001$), openness to experience ($\beta = 2.93$, $p < .001$) and self-esteem ($\beta = 3.24$, $p < .001$). These variables are also moderated by *distributive justice* ($\beta = 0.32$, $p < .001$). However, such moderation has a negative impact on CWB ($\beta = -0.25$, $p < .001$), implying that *distributive justice* helps alleviate the impact of personality characteristics on CWB.

Second, the moderator *interactional justice* stems from three variables (personality characteristics), including: conscientiousness ($\beta = 3.41$, $p < .001$), agreeableness ($\beta = 3.37$, $p < .001$) and openness to experience ($\beta = 2.73$, $p < .001$). These variables are also moderated by *interactional justice* ($\beta = 0.32$, $p < .001$). However, such
moderation has a negative impact on CWB ($\beta = -0.028$, $p < .001$), implying that interactional justice helps alleviate the impact of personality characteristics on CWB.

Third, the moderator OCB stems from three variables (personality characteristics), including: agreeableness ($\beta = 3.56$, $p < .001$), openness to experience ($\beta = 2.97$, $p < .001$) and self-esteem ($\beta = 3.10$, $p < .001$). These variables are also moderated by OCB ($\beta = 0.34$, $p < .001$). However, such moderation has a negative impact on CWB ($\beta = -0.24$, $p < .001$), implying that OCB helps alleviate the impact of personality characteristics on CWB.

Finally, in terms of moderating statistical value, interactional justice is the strongest ($\beta = -0.028$, $p < .001$), followed by distributive justice ($\beta = -0.025$, $p < .001$) and OCB ($\beta = -0.024$, $p < .001$). Apart from these SEMs findings, the moderation analyses have also revealed: (a) distributive justice moderates the PC-CWB association; (b) interactional justice moderates the PC-CWB association; and (c) OCB moderates the PC-CWB association. This supports all hypotheses apart from Hypothesis 2.

**Discussion**

As counterproductive work behaviours (CWBs) are pervasive in the workplace, costly to organizations and detrimental to employee’s quality of work life, there is keen interest in understanding what can be done to alleviate the impact of CWB or, more proactively, prevent it. Contemporary studies have attempted to measure the influence of personal characteristics on CWB and their findings are meaningful. For example, both Western and Eastern researchers have discovered the stronger correlation between employees’ deviant work behaviours and their individual characteristics, such as Big-five personality traits, locus of control and self-esteem (c.f., Dalal 2005; Mount et al. 2006; Smithikrai, in press). These studies have yielded valuable correlational information about the personality and attitudinal predictors of CWBs and provided a foundation upon which further research could build. The logical next step in this area of research would be to examine whether such correlations can be affected by other variables, as the findings of such research would help organizational leaders and managerial practitioners to alleviate the impact of personality characteristics on CWB, reduce the occurrence of CWBs, and, ultimately, contribute to the overall organizational performance.

Accordingly, the current study formulates and tests an integrative model that examines relationships among personality characteristics, moderators and CWB. The present findings contribute to understanding CWB in several ways.

To begin with, the current study reveals that CWB is predicted by a series of personality characteristics, including: FFM (five variables) and self-esteem. That is to say, employees with certain personality characteristics are more likely to demonstrate CWB. Inspired by empirical studies, the current study compares the predictive power of these CWB predictors and discovers that conscientiousness is the strongest predictor of CWB (congruent with Dalal 2005; Salgado 2002), followed by agreeableness, self-esteem, extraversion, neuroticism and openness to experiences. These new findings not only confirmed the influences of personality characteristics on CWB but also ranked their magnitude (i.e., predictive power).

Second, the current study affirms that the associations between personality characteristics and CWB are moderated by distributive justice, interactional justice and organizational citizenship behaviour (OCB). However, procedural justice is not a valid moderator in this case. These findings are meaningful in several aspects: (a) distributive
justice and interactional justice are perceived as important to the employees, implying that
the fairness of outcomes and interpersonal treatment at work plays a key role in
employees’ evaluation toward their workplace; (b) OCB is also perceived important to
the employees; (c) the aforementioned points have jointly conveyed a clear message that,
when organizational injustice exists (or when the occurrence of OCB is scarce), employees
with extreme personality characteristics are more likely to demonstrate CWB; and, finally,
(d) procedural justice may not be as important as other types of justice to the employees in
this study. This phenomenon may be interpreted by an assumption that employees tend to
focus on final allocation of their fairness/interests rather than the allocational procedure per
se. Certainly this interpretation is an assumption in nature and requires further verification.

Third, the findings extracted from the SEM have clarified the magnitude
(i.e., moderating efficacy) of three moderators. The strongest is the interactional justice,
followed by distributive justice and organizational citizenship behaviour. These findings
are helpful to management in the prevention of CWB. To be exact, the occurrence of
CWB can be reduced by: (a) the implementation of justice enhancement programmes,
especially the interactional justice and distributive justice; and (b) the prevalence of an
OCB atmosphere at work can also help alleviate the impact of personality characteristics
on CWB.

Finally, the findings of the current study have extended contemporary personality-
CWB interrelation (e.g., Salgado 2002; Dalal 2005; Smithikrai, in press) literature by
scrutinizing the influences of organizational justice and organizational citizenship
behaviour. These findings first and foremost pave a way to interpret the association
between personality characteristics and CWB. These findings also convey valuable and
informative messages to the general managerial practitioners. Implications of these
findings are critically discussed below.

Implications to the managerial practitioners
Due to the prevalence of the equal opportunity policy, personnel officers may not easily
preclude candidates with certain personality characteristics during the recruitment or
promotional procedure. Personality assessment serves as only part of the personnel
assessment and evaluation process, and the psychometrics results may not necessarily
represent the characteristics (or performance) of an individual in the workplace.

Trying to find honest, reliable answers is also challenging due to the potential affect of
the social desirability effect, and the reliability of psychometrics has been continually
debated by both academics and field users. Both the positive and the negative observations
regarding the application of psychometrics at work are valid in their circumstances,
resulting in a lack of consensus (Pervin and John 2004).

Nevertheless, from a practical perspective, the current study has opened a new avenue
for managerial practitioners to tackle CWB. Specifically, the findings here have revealed
that CWB can be alleviated by the implementation of distributive justice, interactional
justice and OCB enhancement. Details of these enhancement tactics follows.

First, organizational managers and team leaders should be aware that there may be
some factors (e.g., interactional injustice and distributive injustice) embedded in their
workplace, which are currently provoking CWB and affecting their employees. Without
removing these provoking factors, any CWB intervention programmes may not reach their
maximum efficacy.

Second, since the moderating effect of interactional justice and distributive justice are
significant, there is an urgent need to develop corporate policies to enhance organizational
justice. Both government and local authorities should also monitor the implementation of these justice enhancement policies and offer on-site advice accordingly, so that employees are guaranteed that they are treated with fairness at work. The current study believes that both employees and employers can benefit from these policies, as CWB can be more efficiently managed or even reduced.

Third, from a preventive perspective, carrying out an organizational justice audit is informative to the human resources management. Once injustice is detected, the management staff can tackle the sources of injustice and devise coping strategies appropriately, and, ideally, the impact of injustice on CWB can be regulated from the beginning.

Furthermore, organizational management staff should acknowledge the value of OCB and, if applicable, praise it with substantial rewards. As previously mentioned, OCB is contagious in nature (Bommer et al. 2003). If people who demonstrate OCB receive substantial rewards, other employees may also follow and demonstrate more OCB themselves. Following this advice (i.e., giving rewards) may be initially costly to the organizations; however, the consequences should bring foreseeable benefits to both employers and employees in the long run.

Limitations of the study

Almost every research project has its drawbacks and there is no exception for the current study. The initial drawback is that questionnaire respondents have been shown to give socially desirable responses, despite their anonymity being guaranteed (also known as the Social Desirability Effect). Fox and Spector (1999) argue that the reliance on cross-sectional and self-report methodology is essentially problematical in organizational behaviour research, as the use of a single source of data, such as self-report questionnaires, may result in an overstatement of relationships among the variables. However, given the current study’s focus on affective and behavioural responses to the perceived, rather than objective, environment, the difficulty of obtaining uncontaminated measures of CWB, and ethical concerns with the possibility of putting research participants at risk in the accumulation of evidence of CWB, the current study asserts that anonymous self-reports are still able to provide the closest available approximation of these relations.

In the current study, the analytic steps are inclined to explain that personality generates a subtle impact on the occurrence of counterproductive behaviour. Although such explanation was supported by the data, it is not concluded that this is the only relationship between personality traits and CWB. From a different perspective, it could be argued that the moderating variables (e.g., interactional justice) could be a consequence of individuals’ attempts to rationalize their CWB. If this is the case, personality traits may not be a CWB-trigger, but rather be a recipient of interactional justice. It is possible that the dynamics across these variables are much more complicated than the expectation in the current study. Future researchers may wish to broaden the scope of personality-CWB framework and further analyse the dynamics across variables.

The current study regards personality as a constant variable (see Pervin and John 2004). Due to this, the findings here must be interpreted with caution, as experts have not unanimously verified the stability of personality. If personality is not a constant variable, its impact on CWB may require further investigation. Future research may extend the scope by analyzing the stability of personality characteristics and measuring their influences on CWB.

Situational variables may also influence the personality-moderator-CWB nexus and would be useful for future research to explore. These include leadership style,
organizational culture, presence of electronic monitoring and reward systems (e.g., Martin, Gundlach and Douglas 2002; Marcus and Schuler 2004). The SEM models only provide a parsimonious framework that is theoretically and empirically grounded for other researchers to build on, but the current study recognizes that the inclusion of perceptual and situational variables is also useful and may change the path estimates obtained here.

Finally, the findings here have highlighted that organizations may be able to reduce the occurrence of CWB that undermine their effectiveness by developing managerial interventions/policies, such as the enhancement of organizational justice and OCB. Although the implementation of such interventions may sometimes incur financial pressure to the organizations; however, both employers and employees will receive worthy benefits in the long run.

Notes
1. Correlation coefficients represent the levels of linear relationship between two variables (Field 2005), including: strong correlation (.70 – .99), moderate correlation (.40 – .69), weak correlation (.10 – .39), and zero correlation (below .10). For the sake of clarity, original correlation coefficients are not specified here. Readers should refer to the original sources for further statistical details.

2. From an integrated perspective, it is expedient to incorporate three discrete models in one single diagram. However, the significant correlation between distributive justice, interactional justice and OCB (see Table 1: rs = .24**, .39** and .44**, respectively) may yield to multi-colinearity phenomenon if these three variables are computed in a single model. Multi-colinearity phenomenon often makes the interpretation more difficult and misleads the researchers (Field 2005). Considering the nature and validity of the data interpretation, the authors thus decided to conduct three separate analyses so individual variables in the diagram can be further examined and multi-colinearity phenomenon can be reduced.

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