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## **Organizational uncertainty and stress among teachers in Hong Kong: work characteristics and organizational justice**

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### **Abstract**

A growing literature now exists examining the relationship between organizational justice and employees' experience of stress. Despite the growth in this field of enquiry, there remain continued gaps in knowledge. In particular, the contribution of perceptions of justice to employees' stress within an organizational context of uncertainty and change, and in relation to the new and emerging concept of procedural-voice justice. The aim of the current study was to examine the main, interaction and additive effects of work characteristics and organizational justice perceptions to employees' experience of stress (as measured by their feelings of helplessness and perceived coping) during an acknowledged period of organizational uncertainty. Questionnaires were distributed among teachers in seven public primary schools in Hong Kong that were under threat of closure (n = 212). Work characteristics were measured using the demand–control–support model. Hierarchical regression analyses observed perceptions of job demands and procedural-voice justice to predict both teachers' feelings of helplessness and perceived coping ability. Furthermore, teacher's perceived coping was predicted by job control and a significant interaction between procedural-voice justice and distributive justice. The addition of organizational justice variables did account for unique variance, but only in relation to the measure of perceived coping. The study concludes that in addition to 'traditional' work characteristics, health promotion strategies should also address perceptions of organizational justice during times

of organizational uncertainty; and, in particular, the value and importance of enhancing employee's perceived 'voice' in influencing and shaping justice-related decisions.

## **INTRODUCTION**

The pervasive level of change occurring within organizations and across occupation sectors is most certainly a global trend, with increasing globalization, constant technological developments and a volatile economic climate acting as likely macro-level driving forces (Oreg et al., 2011). Over 15 000 large-scale restructuring events within companies were recorded by the European Restructuring Monitor Database between 2002 and 2012; with an estimated 20–30 new entries each week (EMCC, 2013). A common feature of the vast majority of these cases included downsizing personnel (EMCC, 2013). The negative impact posed by poorly managed organizational restructuring and periods of uncertainty to employees' well-being is evident (e.g. Kivimäki et al., 2000; Paul and Moser, 2009). Albeit understanding how work characteristics and psychosocial factors contribute to employees' reactions, attitudes and behaviors during such transitory and tentative periods remains, comparatively, less clear. This is likely due, in part, to the pragmatic challenges posed by conducting research during this precarious and transient period of time. Notwithstanding, the implications from such accrued findings could yield important insights into methods and strategies to protect and support employees' well-being.

## **WORK CHARACTERISTICS AND STRESS: THE JOB DEMAND–CONTROL–SUPPORT MODEL**

A theoretical framework that has dominated occupational stress research for more than three decades is the job demand–control model (JDC; Karasek, 1979). The JDC model postulates that job strain results from the interaction between two dimensions of the work environment: high psychological job demands and low-job control. Chronic and prolonged exposure to job strain is predicted to have detrimental consequences to workers' health and well-being. This model was later adapted to include a third conceptual dimension (social

support at work) and, subsequently, renamed the job demand–control–support (JDCS; Karasek and Theorell, 1990). This adapted model makes two further postulations: (i) the presence of social support at work will buffer the negative impact of job strain; and (ii) those most at-risk for poor health are those who report job strain paired with low-workplace social support (a phenomenon referred to as iso-strain; Karasek and Theorell, 1990).

Consistent evidence for the independent effects of these three psychosocial work characteristics (demand, control and support) to employee well-being is well-evidenced (e.g. Noblet and LaMontagne, 2006; Hausser et al., 2010). However, the proposed interactive nature of these constructs has received, comparatively, less support (e.g. De Lange et al., 2003; Noblet and Rodwell, 2009). Despite the breadth of research examining the predictive capacity of the JDC(S) model, relatively few studies have used the model to examine the stress experienced by employees working within the context of organizational uncertainty and change (Noblet and Rodwell, 2008). Given the common occurrence of such organizational practices this is a clear and profound gap in knowledge. On the basis of this research, the present study will investigate both the main and the interactional effects of the JDSC model in relation to two measures of employee's perceived stress (namely, feelings of perceived helplessness and ability to cope) during an acknowledged period of organizational change and uncertainty.

## **ADOPTING A SOCIAL EXCHANGE PERSPECTIVE: PERCEPTIONS OF ORGANIZATIONAL JUSTICE**

Much of the job stress literature has predominantly focused on work and role characteristics; with, comparatively, fewer studies looking at the benefits of combining social exchange variables with the more mainstream job stress models (such as, JDSC; Noblet and Rodwell, 2009). Social exchange and equity theories emphasize the conceptual importance of perceived fairness; with a central focus on the reciprocal nature, as viewed by the individual, of what is 'invested' in a relationship (e.g. time, skills and effort) in relation

to the perceived return (e.g. pay, appreciation and recognition) for this input (Adams, 1965). In the context of organizational change and uncertainty, understanding if and how feelings of equity and fairness are associated with employees' reactions, attitudes and behaviors may be a particularly salient issue to consider. Indeed, it has been suggested that perceptions of fairness and equity may become more salient during times of organizational change and uncertainty (Montes and Zweig, 2009).

One social exchange theory that may provide a useful theoretical framework in which to understand the nature and significance of employees' perceptions of equity and fairness is Organizational Justice Theory (Colquitt, 2001). Organizational justice is typically conceptualized as having four dimensions (Colquitt, 2001): distributive, procedural, interpersonal and informational. Distributive justice refers to how fairly employees perceive their 'inputs' (e.g. effort, experience and education) are rewarded in comparison to referent others. Interpersonal justice focuses on the degree to which employees are treated with respect and dignity, and informational justice refers to the extent of employees' timely and accurate information about the decision-making processes or the outcomes of those processes. Finally, procedural justice refers to the perceived fairness of the procedures and methods used to make justice-related decisions (such as those involved in performance appraisal or promotion applications). In the context of organizational change and uncertainty, this may also relate to the procedures and methods related to downsizing personnel.

A growing and now substantive body of evidence links employee perceptions of organizational justice, and its four proposed conceptual dimensions, with a number of adverse health outcomes (e.g. Robbins et al., 2012; Liu et al., 2013). However, there is growing debate within the academic literature regarding the dimensionality of organizational justice as first theoretically proposed; with a number of recent studies observing a fifth dimension termed procedural-voice justice (Jepsen and Rodwell, 2009; Maharee-Lawler et al., 2010; Noblet et al., 2012). Procedural-voice justice denotes the extent to which employees have a say or perceived influence in resource allocation decisions, and is often viewed as the associated 'voice effect' of those more 'core' conceptual components of

procedural justice (Maharee-Lawler et al., 2010). These two observed constructs to procedural justice have been conceptually distinguished by terming them procedural core and procedural-voice justice respectively (Jepsen and Rodwell, 2009). Preliminary evidence suggests that the associated 'voice effect' of procedural justice is associated with employee attitudes and behaviors (e.g. job satisfaction; Jepsen and Rodwell, 2009; Maharee-Lawler et al., 2010; Noblet et al., 2012); albeit no research, to the knowledge of the authors, has examined its respective contribution to employees' experience of stress and reported health. In light of the current debate within the academic literature, this is a clear and profound gap in knowledge.

A further notable limitation of the organizational justice theory literature has been the almost exclusive investigation of the main effects of organizations justice, with limited examination of the possible interactive nature between these variables (Lawson et al., 2009). Of particular interest to the current study is one specific hypothesized interactive effect termed: the 'fair process effect'. It is thought that perceived procedural justice may off-set the negative effects of unfavorable distributive justice. Of the available evidence, the 'fair-process effect' has been associated with employee attitudinal measures (e.g. job satisfaction; Francis and Barling, 2005; Lawson et al., 2009), albeit its explanatory contribution to measures of work related stress and well-being is less clear. In a organizational context characterized by change and uncertainty, the current authors speculate that the 'fair process' effect may act as an important explanatory factor in predicting employee's experience of stress; and, therefore, will be considered and tested within the context of this study. Further to this point, the moderating nature of procedural justice will be examined in relation to both procedural core and -voice dimensions, something that has not been conceptually considered or systemically tested previously.

## **AN INTEGRATED PERSPECTIVE: JDCS AND ORGANIZATIONAL JUSTICE**

An early study by De Boer et al. (De Boer et al., 2002) found both perceptions of fairness and JDC components made independent and unique contributions to explaining health

complaints and absenteeism. This early study spurred a growing body of research investigating whether perceptions of organizational justice contributed to an explanation of job strain or other measures employee health over and above those more traditional work stressors (e.g. demand, control and support). The majority of studies do observe the unique and independent contribution of organizational justice variables (Noblet and Rodwell, 2009; Noblet et al., 2012), albeit not all (Noblet et al., 2009; Ndjaboué et al., 2012). Consequently, the current study seeks to further contribute to this academic debate, by examining whether perceptions of organizational justice may account for significantly more of the explained variance in relation to employees' self-reported stress and ability to cope within the identified unique organizational context.

## **STUDY AIMS**

The current study examines the role played by psychosocial work characteristics, as measured by the JDCS and Organizational Justice Theory models, in relation to employees' experience of stress during an acknowledged period of organizational uncertainty. The aims of the study were to test for: (i) the main (inclusive or linear and curvilinear associations) and interaction effects in relation to JDCS and organizational justice variables; and, (ii) an additive effect of organizational justice variables beyond that accounted for by the JDCS model in relation employees' feelings of perceived stress and ability to cope.

## **MATERIALS**

### **Study context and sample**

This study was conducted in the primary education sector in the Autonomous Territory of Hong Kong during a period of significant organizational change, where educational reforms has seen the closure of a third of its primary schools over the last decade (KPMG, 2010; HK SARG, 2014). In total, 20 public primary schools with the same administrative and academic structures were approached to participate in the study. Seven of the 20 approached schools agreed to participate. Following ethical approval from the University of Nottingham in the UK

conversations with Principals confirmed that all seven schools were currently experiencing reforms and were under risk of closure. Questionnaires were distributed to each of the 255 teachers employed in these schools. In total, 219 were completed (83% response rate).

### **Procedure**

Teachers in the seven schools received consent forms and questionnaires. The consent form provided information regarding the nature of the research, and informed participants of their rights and assured them of the anonymity and confidentiality of their responses. No identifiable personal details were asked for in the questionnaire. On completion, consent forms and questionnaires were placed in separate unmarked envelopes. All teachers participated voluntarily and none were paid for their participation.

### **Measures**

Although now a Chinese territory, English remains the official language for Hong Kong alongside Cantonese and is widely used in government and the private sector. Prior to data collection beginning, a pilot study was conducted using the study materials. Several teachers were shown the English language questionnaires and consent form to assess their understanding and ease of the use of the questionnaire. Participants in the pilot agreed that they understood both documents and had no difficulties in completing the questionnaires. The overall instrument was composed of three sections: (i) demographics (including, gender, age and length of teaching experience), (ii) measures of self-reported working conditions (including, demand, job control, social support at work and organizational fairness) and (iii) a measure of perceived stress. The measures used are described below.

#### *Job demands*

Job demands were measured using the 11-item Quantitative Workload Scale developed by Caplan et al. (Caplan et al., 1980). The scale assesses psychological demands and measures the amount of work performed by the employee and the pace at which it was performed. Responses were recorded on a five-point Likert scale ranging from 'rarely' (1) to



'very often' (5). High scores on the scale indicate high-job demands. The Cronbach  $\alpha$  for this study was 0.87.

#### *Job control*

Job control was measured using a nine-item scale assessing skill discretion and decision-making control (Karasek, Q2 1985). Responses were recorded on a five-point Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (5), and negatively worded items were reverse coded so that high scores indicate high levels of job control. The internal reliability for this was  $\alpha = 0.52$ .

#### *Social support*

Participants indicated their perceived level of support from co-workers on the social support measure developed by Caplan et al. (1975). Participants responded to a five-point scale on four items ranging from 'to a small extent' (1) to 'to a large extent' (5). Higher score are indicative of greater levels of co-worker social support. The internal reliability for this scale was 0.70.

#### *Organizational justice*

Perceptions of organizational justice were measured using the 20-item measure developed by Colquitt (Colquitt, 2001). Items were rated on a five-point scale according to the extent that various elements of fairness applied to the respondent, from 'to a small extent' (1) and 'to a large extent' (5). Higher scores are indicative of increased levels of perceived justice. In light of current debates in the field regarding the dimensionality of the organizational justice construct (e.g. Maharee-Lawler et al., 2010), the current study measured five forms of organizational justice using the same structural format as previous by studies (e.g. Jepsen and Rodwell, 2009; Noblet and Rodwell, 2009; Noblet et al., 2012): distributive (four items;  $\alpha = 0.95$ ), information (five items;  $\alpha = 0.90$ ), interpersonal (four items;  $\alpha = 0.86$ ), procedural-core (four items;  $\alpha = 0.56$ ) and procedural-voice justice (three items;  $\alpha = 0.66$ ). The discriminant validity of the five-factor model was tested using Confirmatory Factor Analysis using AMOS 7.0 to investigate the respective fit of the measurement model. The model was found to demonstrate an acceptable level of fit with the data:  $\chi^2(13, N= 212) = 229.33, p <$

0.001,  $\chi^2/df = 1.480$ , GFI = 0.902, IFI = 0.973, CFI = 0.973 and RMSEA = 0.048 (0.034 and Q3 0.060).

### *Perceived helplessness and coping*

The 14-item perceived stress scale (Cohen et al., 1983) was used to measure the degree to which respondent's perceived their situation in the past month as being stressful. Using a five-point Likert scale (0 = 'never' and 4 = 'very often') respondents indicated the frequency of events, behaviors and feelings they encountered or experiences in the past month. While intended as a single-construct measure, a number of studies (see Lee, 2012 for a review) have observed a two-factor model, creating two subscales measuring related but observably independent components of perceived stress, distinguishing between perceived helplessness and feelings of coping.

Informed by previous studies, the current study used two subscales to measure perceived stress among teachers: perceived helplessness (seven items;  $\alpha = 0.88$ ) and ability to cope (seven items;  $\alpha = 0.85$ ). Higher scores are indicative of higher levels of perceived helplessness and perceptions of poorer coping. The discriminant validity of the two-factor model was further tested using CFA to determine the fit of the model. The model was found to demonstrate an acceptable level of fit to the data and, therefore, perceived stress was measured using two subscales:  $\chi^2(72, N = 212) = p < 0.01$ ,  $\chi^2/df = 1.515$ , GFI = 0.934, IFI = 0.973, CFI = 0.973 and RMSEA = 0.049 (0.029 and 0.068).

### **Analytical framework**

Data screening and assumption testing for multiple regressions were undertaken prior to data analysis. Interpersonal justice was observed to violate the assumption of normality; and was, therefore, transformed using squared root transformation. Following the data transformation, the evaluation of requirements for normality, linearity and homoscedasticity of the data and developed variables indicated that these assumptions were met. Bivariate parametric two-way correlations were conducted among the explanatory and outcomes measures. Hierarchical multiple regression analyses using SPSS 20.0 assessed the

additive, main and interaction effects associated with the predictor variables in relation to the two-specified outcome measures. To test the main effects for JDCS and organizational justice variables both linear and curvilinear effects were examined and tested. To aid interpretability the variables were first 'centred' (Aiken and West, 1991). Socio-demographic variables (age, gender and length of teaching experience) were controlled for in the analysis.

A bootstrapping procedure was employed, specifying 500 samples to be randomly generated with the calculation of 95% confidence intervals as a cross-validation method. Bootstrapping procedure is recommended when the underlying distribution is not well-known, and allows a manner to account for the distribution caused by the specific sample that may not be fully representative of the population (Ader et al., 2008). Informed by the analytical approach employed by previous studies (e.g. Lawson et al., 2009; Noblet et al., 2012), a hierarchal regression using a block-entry method was used to examine the posed research questions. Blocks of variables were sequentially entered starting with: the covariates; JDCS components (centered terms, squared terms, two-way interactions and three-way interactions) and followed by organizational justice variables (centered terms, squared terms and two-way interactions).

## **RESULTS**

A total of seven cases had incomplete information and were not included in the final sample, yielding a final sample of 212 cases. In general, the vast majority of surveyed teachers were female (77.8%), between the ages of 31–40 years (36.8%) and had between 6- and 10-year experience teaching (24.1%; see Table 1 for overview of collected demographic data).

Bivariate two-tailed correlations were calculated among the independent and dependent measures (see Table 2).

[INSERT TABLE 1 HERE]

[INSERT TABLE 2 HERE]

[INSERT TABLE 3 HERE]

### **JDCS work characteristics and organizational justice: main and interactive effects**

The results of the regression analysis demonstrate that a limited number of investigated variables were found to significantly predict teachers' perceived helplessness (see Table 3). Only two independent variables were found to be significant predictors: job demands and procedural-voice justice. Higher self-reported job demands (centered term;  $\beta = 0.484$ ,  $p < 0.01$ ) and lower levels of perceived procedural-voice justice (squared term;  $\beta = -0.227$ ,  $p < 0.05$ ) were observed to significantly predict increased feelings of helplessness among surveyed teachers. The nature of these observed associations was both linear (job demands) and curvilinear (procedural-voice justice). None of the other tested JDCS or organizational justice individual components, or any of the interaction terms, were significant predictors of teachers' feelings of helplessness.

Poorer perceived coping among surveyed teachers was predicated by: high job demands ( $\beta = 0.190$ ,  $p < 0.05$ ; see Table 3); low self-reported job control ( $\beta_{\text{centred-term}} = -0.187$ ,  $p < 0.05$ ;  $\beta_{\text{squared-term}} = -0.207$ ,  $p < 0.01$ ); lower levels of procedural-voice justice ( $\beta = -0.243$ ,  $p < 0.01$ ). A linear association was observed in relation to job demands, job control and procedural-voice justice and a curvilinear association in relation to both job control and procedural-voice justice. The remaining independent JDCS and organizational justice components did not significantly predict surveyed teachers' perceived coping. Among the tested interaction effects, only one was statically significant: distributive justice  $\times$  procedural-voice justice.

Further analysis was conducted to examine the nature of this interactive relationship. Surveyed teachers were categorized into high ( $n = 52$ ), moderate ( $n = 115$ ) and low ( $n = 45$ ) procedural-voice justice groupings. Low and high-justice groups were defined as those scores in the first and fourth quartile of the distribution, and the moderate groups as any score within one standard deviation above or below the mean. Among those reporting moderate and high levels of procedural-voice justice the observed correlation between distributive justice and perceived coping levels was not significant. However, among those

teachers that reported a low level of procedural-voice justice a moderately strong association between distributive justice and perceived coping levels was found:  $r = -0.487$ ,  $p < 0.001$ ,  $n = 45$ . Results from this analysis demonstrate that as procedural voice justice decreased among the surveyed teachers, the nature of the association between distributive justice and levels of impaired perceived coping was amplified in nature.

### **Organizational justice: evidence of an additive effect**

In total, 27.4% (adjusted R<sup>2</sup>) of teachers' perceived helplessness was accounted for by the investigated variables inclusive of both the JDCS and organizational justice variables. Following controlling for covariates, the addition of the JDCS main effects (Steps 2–3) yielded a significant increase to the total explained variance  $\Delta R^2 = 0.253$ ,  $F(3, 184) = 21.035$ ,  $p < 0.001$ ; and  $\Delta R^2 = 0.046$ ,  $F(3181) = 4.044$ ,  $p < 0.001$ . The addition of the interactive JDCS terms, in Steps 4 and 5, did not demonstrate a significant additive effect. Further to this point, the addition of the main (Steps 6 and 7) and interactive (Step 8) effects of the examined organizational justice variables did not contribute to a statistically significant increase in the explained variance of perceived helplessness among the surveyed teachers.

In terms of teachers' perception of coping, 26.3% (adjusted R<sup>2</sup>) of the explained variance was accounted for by the tested model. Controlling for covariates, the addition of the JDCS main effects (Steps 2 and 3) both significantly contributed to an increase in the explained variance:  $\Delta R^2 = 0.143$ ,  $F(3, 184) = 10.502$ ,  $p < 0.001$ ; and  $\Delta R^2 = 0.143$ ,  $F(3, 184) = 10.502$ ,  $p < 0.001$ . The tested two-way and three-way JDCS interactions terms, in Steps four and five, did not demonstrate a significant additive effect. In relation to the organizational justice dimension, the addition of the main effects did not demonstrate a significant increase in the explained variance. However, the demonstrated change in R<sup>2</sup>, observed in Step 6, was approaching statistical significance:  $\Delta R^2 = 0.044$ ,  $F(5, 172) = 2.230$ ,  $p = 0.053$ . The addition of the interaction organizational justice terms, in the final step, of the equation did yield a statistically significant additive effect:  $\Delta R^2 = 0.025$ ,  $F(2, 165) = 3.244$ ,  $p < 0.05$ .

## **DISCUSSION**

The current study examined the role played by JDCS work characteristics and organizational justice variables in relation to teachers' experience of stress, as measured by their feelings of perceived helplessness and coping, during an acknowledged period of organizational uncertainty. The study investigated the main (inclusive of linear and curvilinear associations), interaction and additive effects in relation to the explored explanatory variables.

### **The influence of JDCS work characteristics**

Perceived high-job demands are a salient feature of the teaching population's psychosocial working conditions (Montgomery and Rupp, 2005; Hakanen et al., 2006), and have been previously linked to their experience of stress and a myriad of negative health outcomes (e.g. Hakanen et al., 2006). In congruence with previous research, higher job demands were observed to significantly predict surveyed teachers' increased feelings of helplessness and poorer perceived coping. While significant in relation to both outcome variables, the magnitude of this association was particularly strong in relation to teachers' feelings of helplessness.

Preliminary evidence suggest that employees typically report an increased workload during times of organizational change and uncertainty (Kieselbach et al., 2010; Oreg et al., 2011), with some evidence to suggest employees voluntarily increasing their Workloads in order to remain valuable to the organization (Kieselbach et al., 2010). Due to the cross-sectional nature of this study, it was not possible to examine the trajectory nature of perceived job demands as influenced by the organizational context from a temporal perspective. However, understanding how and if this work characteristic evolves during times of organizational change and uncertainty, and its association to employees' experience of stress, has clear empirical importance; and practical value for the development of targeted and tailored workplace health promotion strategies. This should be viewed as an important future avenue for research.

Lower levels of perceived job control was found to predict increased feelings of inability to cope among surveyed teachers; but was not associated to their reported feelings of helplessness. This observed main effect was found to have curvilinear properties, which has been observed in previous studies (de Jonge and Schaufeli, 1998). Social support from co-workers was not observed to have a direct or interactive effect in relation to teachers' experience of stress, which is in contrast to much of the broader stress literature (e.g. Hausser et al., 2010; Luchman and Gonzales-Morales, 2013). However, the current study only looked at social support derived from co-workers, and potentially different results might have been observed if support from supervisors (e.g. Hakanen et al., 2006), or outside the workplace, was examined (e.g. Montgomery and Rupp, 2005). None of the tested JDCS interaction effects were significant predictors within the given sample of teachers. Previous studies have observed consistent evidence of the main effects of the JDCS work characteristics (Noblet and LaMontagne 2006; Hausser et al., 2010; Luchman and Gonzales-Morales, 2013); however, evidence of their interactive nature of these variables is mixed and observably weak (van der Doef and Maes, 1999; De Lange et al., 2003).

### **Organizational justice: the importance of 'voice'**

Like previous research, the current study observed an association between perceptions of justice and employees' perceived stress (Francis and Barling, 2005; Lawson et al., 2009). However, this association was observed in relation to one variable in particular: the emerging construct of procedural-voice justice (Jepsen & Rodwell, 2009). More specifically, the current study observed high levels of perceived 'voice' and influence in decision-making procedures acted as an important resource for employees; and, moreover, appears to act as a protective factor in relation to teachers' experience of stress. Of the available studies that have examined the correlates of this construct, procedural-voice justice has previously been linked with employee attitudes and behaviors (e.g. Jepsen and Rodwell, 2009; Maharee-Lawler et al., 2010; Noblet et al., 2012). However, this is the first investigation to test and, in turn, observe an association with a measure of stress. Beyond the observed main effects, an

interactive effect was also observed; with procedural-voice justice significantly mitigating the association between the low distributive justice and poorer coping among surveyed teachers.

Collectively this body of evidence highlights the importance of employees' perceived 'voice' and influence in justice-related decision-making procedures and process in relation to employees' experience of stress. This finding has clear empirical importance and makes a clear theoretical contribution. First, it further substantiates the growing debate (e.g. Jepsen and Rodwell, 2009; Noblet et al., 2012) regarding the dimensionality of organizational justice as originally proposed, and highlights the need to consider the 'voice effect' of procedural justice independently of the other examined organizational justice variables. Furthermore, this exploratory study identifies preliminary evidence of procedural-voice justice as an important health resource in the workplace during times of organizational change and uncertainty. Examining the etiological role of procedural-voice in different and more varied workplace contexts and professionals will contribute to the assessment of the reliability and validity of this finding, and will provide further insight into how this psychosocial work-related factor could be integrated into workplace health promotion interventions.

While there a number of important theoretical contributions made by this exploratory study in relation to the new and emerging concept of procedural-voice justice, an important limitation should be considered. The current study, like those previously, measured this construct using a three-item measure derived from the well-established Colquitt (Colquitt, 2001) measure of organizational justice. The utilized three-item subscale demonstrated an acceptable, but relatively weak, level of reliability (as seen in other studies; e.g. Jepsen and Rodwell, 2009; Maharee-Lawler et al., 2010; Noblet et al., 2012). Like previous research, the use of this three-item measure of procedural-voice justice was the direct result of pragmatic necessity, due to the absence of a suitably rigorous alternative measurement of this construct. Without a purposely developed and tested measurement of this construct, it is difficult to understand the full scale and nature of the contribution of the 'voice effect' of procedural justice to employees' experience of stress and other measures of health. This



highlights two important areas of future research. First, the need to further define the conceptual understanding of procedural-voice justice (something that has received limited attention); and (ii) the development of purpose-driven measurement to further examine the nature and associated correlates of this construct.

In so doing, this will yield a more granular understanding of this work-related psychosocial factor and its association to employee well-being. From a practical perspective, a better understanding of the direct and moderating role of the multifaceted and complex nature of the 'voice effect' may yield new insights into the development and implementation of interventions aimed to manage and prevent work-related stress. In the context of organizational change and uncertainty, this evidence would suggest that finding ways of soliciting employee's views and participation in the change process may be a useful technique to mitigate the effects of stress during such times. This is, as viewed by the authors, a clear and important future direction for research.

### **The additive value of organizational justice theory**

The vast majority of previous studies have observed perceptions of organizational justice variables to significantly contribute, above and beyond those traditional work characteristics (e.g. job demand, control and social support) to the explained variance of employees' experience of stress and well-being (Noblet and Rodwell, 2009; Noblet et al., 2012); albeit not all (Ndjaboué et al., 2012). The current study observed mixed evidence of the additive value of organizational justice variables above and beyond examined JDCS work characteristics. Perceptions of organizational justice were observed to yield a significant incremental value of the explained variance of teachers' perceived coping, but not their measured feelings of helplessness. Consequently, the current study finds mixed evidence for the overall additive value of organizational justice theory above and beyond JDCS work characteristics across measures teachers' experience of stress. While the evidence of overall additive contribution of organizational justice theory within the study is mixed; there is

however, comparatively, compelling evidence of the unique contribution of procedural-voice justice above and beyond those tested JDACS work characteristics.

### **Study limitations and methodological considerations**

There are several noteworthy methodological limitations that should be considered when interpreting the results of the current study. First, a cross-sectional study design was utilized. Consequently the temporal nature of the observed association cannot be determined, and generalizing the results of the study beyond the defined sample should be done with caution. Secondly, the reliability coefficients for two measures ( job control and procedural-core justice) had slightly lower values; and, therefore, a certain degree of caution should be exercised when interpreting the dependability of these findings. Finally, due to the reliance on self-report data obtained from the same source, for both predictors and outcome variables, common method variance is a possibility (Podsakoff & Organ, 1986).

### **Concluding thoughts**

The study concludes that, in addition, to targeted interventions aimed at actively managing and addressing 'traditional' work characteristics, workplace health promotion strategies should also address perceptions of organizational justice during times of organizational uncertainty. In particular, health promotion strategies should consider the potential value of cultivating and supporting employees' perceived 'voice' in influencing procedural justice-related decisions, which may be a particularly salient approach during periods of uncertainty and change. In particular workplace initiatives that find ways of soliciting employees' views and participation in the change process may yield important avenues to enhance employees' perception of procedural-voice justice. Some examples of practical approaches may include: the inclusion of employee representatives on a steering group overseeing the change process or participation in strategic organizational meetings; or the use of an organizational consultation process that aims to collect meaningful information from employees and which seeks to act upon and/or responded to their solicited views. The authors would argue that

central to the success of any workplace initiative that aims to enhance employee's sense of voice in organizational procedures and processes should aim to do so in a meaningful manner, which seeks to both listen and respond to employees' views.

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Table 1  
Demographic information of the study sample

Group	%
<b>Gender</b>	
Male	18.4
Female	77.8
<b>Age</b>	
21-30	22.6
31-40	36.8
41-50	26.4
51-60	12.3
<b>Teaching experience</b>	
5 years or less	13.7
6 to 10 years	24.1
11 to 15 years	20.8
16 to 20 years	15.6
21 to 25 years	10.8
26 to 30 years	7.5
30 years or more	5.7

Note. 3.8%, 1.9% and 1.9% of the sample did not indicate their gender, age, and length of teaching experience respectively

Table 3

Summary of hierarchical regression analyses for variables predicting perceived helplessness &amp; perceived coping

Step	Predictor	Perceived Helplessness			Perceived Coping		
		$\beta$	B	Basis	$\beta$	B	Basis
Step 1	Gender	-.052	-.642	-.134	.030	.310	-.116
	Age	-.015	-.079	-.182	-.150	-.645	-.001
	Length of work experience	-.078	-.228	.050	.087	.211	-.004
	$\Delta R^2$	.009			.022		
Step 2	Demand	.484**	.424	.002	.190*	.138	-.007
	Control	-.089	-.131	-.020	-.187*	-.228	-.007
	Social support	-.12	-.248	-.012	-.121	-.205	.013
	$\Delta R^2$	.253***			.143***		
Step 3	Demand <sup>2</sup>	.017	.002	.002	.107	.010	.001
	Control <sup>2</sup>	-.144	-.040	.002	-.207**	-.048	-.002
	Social support <sup>2</sup>	-.017	-.009	.008	-.096	-.040	-.002
	$\Delta R^2$	.046**			.103***		
Step 4	Demand X control	.003	.001	.000	-.079	-.016	.001
	Demand X social support	.043	.013	.005	.078	.020	.001
	Control X social support	-.130	-.066	-.008	-.138	-.058	.002
	$\Delta R^2$	.013			.007		
Step 5	Demand X control X support	-.017	-.001	.000	.07	.003	.002
	$\Delta R^2$	.001			.000		
Step 6	Distributive justice	.101	.133	.022	-.102	-.111	.020
	Interpersonal justice	.113	.940	.108	-.035	-.239	.147
	Informational justice	-.033	-.044	-.014	-.073	-.082	-.022
	Procedural-voice justice	-.048	-.105	-.006	-.120	-.215	-.035
	Procedural-core justice	.05	.094	-.027	.211	.328	-.019
	$\Delta R^2$	.009			.044		
Step 7	Distributive justice <sup>2</sup>	-.001	0	.001	-.072	-.018	-.003
	Interpersonal justice <sup>2</sup>	-.072	-.591	-.061	-.037	-.247	.011
	Informational justice <sup>2</sup>	.093	.024	-.004	.033	.007	.002
	Procedural-voice justice <sup>2</sup>	-.227*	-.190	.002	-.243**	-.167	-.008
	Procedural-core justice <sup>2</sup>	-.012	-.006	.006	.072	.028	-.007
	$\Delta R^2$	.028			.016		
Step 8	Distributive justice X Procedural-core	-.059	-.028	-.005	-.076	-.029	.015
	Distributive justice X Procedural-voice	.158	.085	.004	.256*	.114	.004
	$\Delta R^2$	.010			.025*		
(Constant)			18.276**	0.298		15.648**	.104

Note:  $N = 190$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$



Table 2

Descriptive statistics, correlations and reliability coefficients among study variables

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Job Demand	40.08	5.69	(.87)									
2. Job control	30.77	3.33	-0.122	(.52)								
3. Social support	12.79	2.46	-.347**	.302***	(.70)							
4. Distributive justice	10.61	3.78	-.265***	.360***	.346***	(.95)						
5. Interpersonal justice	15.00	2.77	-0.135	.437***	.268***	.456***	(.87)					
6. Informational justice	16.29	0.63	-.175*	.330***	.274***	.501***	.618***	(.90)				
7. Procedural-voice justice	11.57	2.30	-.175*	.247***	.284***	.463***	.187**	.399***	(.66)			
8. Procedural-core justice	6.61	2.66	-.209**	.316***	.390***	.452***	.430***	.398***	.351***	(.56)		
9. Perceived helplessness	15.44	5.00	.498***	-0.051	-.189**	-0.121	.000	-0.097	-0.093	-0.042	(.88)	
10. Perceived coping	13.94	4.01	.294***	-.232**	-.241**	-.319***	-.203**	-.256***	-.229**	-0.098	.446***	(.85)

Note:  $N=200$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ; Coefficient alpha reliabilities are reported in (parenthesis) along the diagonal