Distributive and procedural justice as predictors of employee outcomes in Hong Kong

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Summary
This study examines the extent to which employee judgments about distributive and procedural justice predict job satisfaction, intent to stay and evaluation of supervision in Hong Kong. Distributive and procedural justice each plays a role in determining work outcomes of Hong Kong employees. However, some effects of these justice variables differ from results of previous studies in the United States (U.S.). First, in previous U.S. studies, procedural justice moderates the relationship of distributive justice with evaluation of supervision, but not with job satisfaction or intent to stay. For Hong Kong employees, procedural justice moderates the effects of distributive justice on job satisfaction and intent to stay, but not on evaluation of supervision. Second, previous U.S. studies have shown that procedural justice has a larger effect on work outcomes for women, while distributive justice has larger effects on outcomes for men. For Hong Kong employees, the effects of procedural and distributive justice are about the same for men and women. Differences in the effects of distributive and procedural justice between Hong Kong and the U.S. may reflect cultural dimensions, such as collectivism/individualism and power distance, as well as the relative availability of rewards for women in the work force. Practical implications and future research directions are discussed. Copyright © 2000 John Wiley & Sons, Ltd.

Introduction
The quality of an employment relationship, which affects employee attitudes, intentions, and commitment, may be measured in several ways (Agho et al., 1993; Arvey et al., 1991; Locke, 1976; Spector, 1997; Tsui et al., 1997). Employee judgments about distributive and procedural justice are two such measures (Cropanzano and Randall, 1993). Previous studies in the United States (U.S.) have shown that employee perceptions about distributive and procedural justice may predict an employee's intention to stay, job satisfaction, evaluation of supervision and

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organizational commitment (Cropanzano and Randall, 1993; Folger and Konovsky, 1989, Greenberg, 1993; McFarlin and Sweeney, 1992; Sweeney and McFarlin, 1997). But do distributive and procedural justice have similar relationships with work outcomes for employees in other cultures? In this study, we investigate this question in Hong Kong, a work environment with industrial development similar to the U.S., but with employees that differ substantially in culture (Daryanani, 1995; Hong Kong Census and Statistics Department, 1996).

Previous research in Hong Kong concerning organizational justice has been limited to experimental studies in laboratory settings which have examined preferences for reward allocation methods (James, 1993; Leung, 1987; Leung and Bond, 1984; Leung and Lind, 1986). These studies found that Hong Kong participants preferred equal rewards for in-group members and rewards based on contribution or equity for out-group members. In similar laboratory settings, Americans preferred an opposite pattern, e.g., rewards based on contribution for in-group members and equal rewards for out-group members (Leung, 1987; Leung and Bond, 1984; Leung and Lind, 1986). The difference in preference for reward allocation has been attributed to the more collective nature of Chinese culture compared to the individualistic orientation of U.S. culture (Bond and Hwang, 1996; Leung, 1987).

These previous studies in Hong Kong have focused exclusively on how employees may interpret reward allocation methods when they are making judgments about distributive and procedural justice in an organization. However, to our knowledge, no previous studies have examined how views about the levels of distributive and procedural justice are related to employee satisfaction, intent to stay, or evaluation of supervision of Hong Kong employees. That is, assuming an organization correctly assesses Hong Kong employee preferences and rewards workers accordingly, the question of how the resulting employee assessments of distributive and procedural justice would be related to work outcomes remains to be addressed. That question is the focus of this study.

Distributive and procedural justice as predictors of outcomes for U.S. workers

Employee perceptions of organizational justice include: (a) distributive justice—the fairness of the allocation of rewards by an organization; and (b) procedural justice—the fairness of the procedures used by an organization in allocating rewards and the voice afforded employees in the allocation process (Folger and Konovsky, 1989; McFarlin and Sweeney, 1992). Some studies have also identified interactional justice, which describes the quality of the interpersonal treatment an employee receives. However, recent studies have included measures of employee voice within procedural justice and have ceased to measure interaction justice separately (Cropanzano and Randall, 1993; Greenberg, 1993). Procedural justice includes the extent to which representatives of the organization ask for and use employee input, engage in two-way communication, give employees the opportunity to challenge decisions, are familiar with the employee's work, and consistently apply standards or rules (Folger and Konovsky, 1989; Greenberg, 1993; Lind and Earley, 1992). Procedures in an organization that recognize and give 'voice' to employee concerns may also provide evidence that an individual is accorded full rights of membership in his/her employment group (Lind and Earley, 1992).

Field studies of U.S. employees have found that both distributive and procedural justice predict employee outcomes such as intent to stay, job satisfaction, evaluation of supervision, and organizational commitment (Folger and Konovsky, 1989; James, 1993; McFarlin and Sweeney, 1992; Sweeney and McFarlin, 1993; 1997). These studies also found that judgments about
procedural justice may be more strongly related to evaluation of supervision and organizational commitment, while distributive justice may be more strongly linked with job satisfaction and intent to stay (Folger and Konovsky, 1989; McFarlin and Sweeney, 1992). The stronger relationship of procedural justice with evaluation of supervisor and organizational commitment may reflect a tendency of employees to form evaluations of supervisors and organizations over time, during which the procedures used and the voice afforded employees may be given more weight. Conversely, distributive justice may have a stronger relationship with job satisfaction and intent to leave because recent recognition or rewards may influence these outcomes more (Folger and Konovsky, 1989; McFarlin and Sweeney, 1992).

McFarlin and Sweeney (1992) also found that when employees perceived high levels of procedural justice, evaluations of supervision are higher across all levels of distributive justice. This moderating effect may indicate that, regardless of the personal rewards received, an employee’s judgments about supervisors and organizations may be tempered by the extent to which he/she believes fair procedures have been used (McFarlin and Sweeney, 1992; Sweeney and McFarlin, 1993). Levels of procedural justice did not moderate the effects of distributive justice on job satisfaction or intent to stay with an organization (McFarlin and Sweeney, 1992).

Other studies in the U.S. have examined the moderating effects of other variables such as gender on the effects of justice variables. For example, Brockner and Adsit (1986) found that distributive justice had a stronger relationship with job satisfaction for men compared with women. Sweeney and McFarlin (1997) found that for men, distributive justice had larger effects on evaluation of supervision, job satisfaction, and intent to stay than did procedural justice. For women, procedural justice had a stronger relationship with these work outcomes. These results may reflect historical discrepancies in the pay and promotion opportunities available to women and men within U.S. organizations (Sweeney and McFarlin, 1997). That is, if women anticipate receiving smaller rewards compared to men with equal human capital, women may direct more attention to whether they receive equal treatment in the procedural processes of an organization (Sweeney and McFarlin, 1997).

The results from these previous studies of the relationship of distributive and procedural justice with employee outcomes are summarized in Figure 1. These are (1) both distributive and procedural justice are related to job satisfaction, intent to stay, and evaluation of supervision; (2) the relationship of procedural justice is stronger with evaluation of supervision; (3) the relation-

![Figure 1. Relationships of distributive and procedural justice with employee outcomes found in previous studies of U.S. employees](image-url)
ship of distributive justice is stronger with job satisfaction and intent to stay; (4) procedural justice moderates the relationship if distributive justice with evaluation of supervision; and (5) gender moderates the relationships of both distributive and procedural justice with job satisfaction and intent to stay.

**Distributive and procedural justice in Hong Kong**

Hong Kong is a modern Asian economy with a workforce of approximately three million that is culturally homogenous (98 per cent Chinese), known for working long hours, and for changing jobs frequently (Hong Kong Census and Statistics Department, 1996; Kirkbridge and Tang, 1989; Tang et al., 1995). Although Hong Kong is now part of the People's Republic of China, employee relations are governed by an employment ordinance that is based in British law. Human resource management (HRM) departments are commonplace in Hong Kong with over 90 per cent of larger firms (200 or more employees) and two-thirds of smaller employees having HRM staff (Chiu and Levin, 1993; Tang et al., 1995).

Despite its history as a colony with economic, educational and legal systems reflecting British traditions, Hong Kong is an inherently Chinese society. Daily life in the modern economy of Hong Kong is influenced by the philosophical traditions of Confucianism (Hofstede, 1991; Lee, 1995). Indeed, Hong Kong can be seen as a society bridging the cultural worlds of Chinese traditions and the modern Western influences of industrialization (Redding, 1990). The Chinese working population in Hong Kong may differ from U.S. employees in their viewpoints about authority, or power distance and the relative importance of group affiliations, or collectivism (Bond, 1996; Bond and Huang, 1987; Hofstede, 1991). Studies have found that Hong Kong employees also differ from Americans in the influences of Confucian heritage. Confucianism includes conducting relationships according to status, placing value on reciprocity in relationships, and preferring a harmonious working atmosphere (Hofstede, 1991; Hui and Tan, 1996).

Previous studies of organizational justice in Hong Kong have focused exclusively on cultural explanations for differences between Chinese and Americans in preferences for the type of allocation rule used for rewards. These experimental studies have found that Chinese subjects prefer rewards to be allocated equally among in-group members such as co-workers (Leung, 1987; Leung and Bond, 1984; Leung and Lind, 1986). For out-group members or persons not well known, Chinese subjects preferred rewards to be based on equity or merit. In similar experiments, U.S. subjects showed opposite preferences—equity for reward allocations among in-group members and equality for assignment of rewards among strangers (Leung, 1987; Leung and Bond, 1984; Leung and Lind, 1986). These differences have been attributed to the more collective nature of Chinese culture compared to the individualistic nature of American culture. That is, Hong Kong subjects who are more collective in outlook may prefer equal rewards for in-group members as a means of strengthening group ties and reinforcing harmony within the group. Group unity and harmony may be more important to Hong Kong Chinese than is the recognition of individual contributions (Bond et al., 1987; Leung and Lind, 1986). Americans, on the other hand, may place greater emphasis on the recognition of individual contributions. Americans may prefer rewards based on the individual contribution of in-group members as a means of honoring the effort and performance of each individual group member.

Since Hong Kong and the U.S. employees have substantial cultural differences (collectivism/individualism, power distance, and Confucianism), the relationships of distributive and procedural justice with job satisfaction, intent to stay and evaluation of supervision in Hong Kong may be different than those shown in Figure 1 for U.S. workers (Hofstede, 1991; Hui and Tan,
For example, being accustomed to greater power distance in organizational relationships, Hong Kong workers may have very limited expectations about fairness in organizational rewards or procedures and react less than Americans to perceived injustice (Bond and Hwang, 1987; Hui and Tan, 1996; James, 1993). If so, distributive and procedural justice in Hong Kong may have limited effects on work outcomes. In addition, Confucianism suggests that social relationships should be governed by the relative hierarchical status of persons. Thus, procedural justice may have very weak relationships with outcomes such as evaluation of supervision. Since Confucianism and Collectivism emphasize harmonious relationships, Hong Kong workers may have stronger desires for respectful treatment and support at work. If so, levels of procedural justice might have larger effects on job satisfaction and intent to stay for Hong Kong employees compared with Americans (Hui and Tan, 1996; Lind and Earley, 1992).

In addition, since other studies have found that Hong Kong men and women have similar views of the relative importance of work–family conflict in determining job satisfaction (Aryee et al., 1999), distributive and procedural justice may have similar effects on outcomes for both men and women. Thus, based on cultural dimensions, a model of the relationships of justice variables with work outcomes for Hong Kong employees may look considerably different from that shown in Figure 1 for U.S. workers.

An alternative viewpoint is that exposure to Western business and employment practices within industrialized countries tends to lead to a convergence of work-related values and expectations across cultures (Ralston et al., 1993). This perspective may have validity in Hong Kong since it is a modern industrialized economy with workers accustomed to organizational practices that may be similar to those used in the U.S. (Daryanani, 1995; Hui and Tan, 1996). For example, studies have found that many human resource management practices used in Hong Kong are similar to those used in U.S. companies (Tang et al., 1995). Since work environment and organizational variables are similar to those in the U.S., employee expectations about organizational relationships may also be similar. Indeed, a quasi-experimental study by Chen (1995) using a sample of employees from companies in the U.S. and China found that Chinese employees competing under China's economic reforms favoured the use of reward allocations based primarily on the individual contribution for co-workers. This preference is opposite from the preferences attributed to Chinese cultural collectivism in earlier experimental studies. Chen's (1995) results may reflect the influence of economic and organizational variables that have assumed greater importance than the cultural tendencies of the Chinese workers. That is, economic progress and successful competition in world markets are priorities that may place focus on individual contributions within work organizations in China (Chen, 1995). Organizational goals may not have influenced the university students who were subjects in the earlier experimental studies. Further, studies of sex roles have found that both Chinese and American subjects tend to view men as more dominant, with Chinese subjects showing greater degrees of sex role differentiation than Americans (Bond and Hwang, 1987; Chu and Leung, 1995). Other studies suggest that Chinese men may place greater emphasis on rewards than women, while women may place greater value on tolerance and trustworthiness (Hui and Tan, 1996). These results suggest that distributive and procedural justice may be related to work outcomes in Hong Kong much the same way as in the U.S. If so, the predictive model for Hong Kong employees will be very similar to that for Americans shown in Figure 1.

Unfortunately, studies that have tested these two perspectives (similarities due to organizational influences versus differences due to cultural influences) have produced ambiguous results. For example Ralston et al. (1993) found that work values of managers from the U.S., Hong Kong (while still a colony) and China seemed to reflect both cultural differences and organizational objectives. In particular, in some areas, Hong Kong managers were more like managers
from China despite greater similarity in the levels of industrialization of Hong Kong and the U.S. Given these ambiguities, we have followed Xie (1996) and proposed four study hypotheses that are based on the results of previous studies of U.S. employees. The hypotheses together test the viewpoint that distributive and procedural justice will predict work outcomes in Hong Kong in the same way as in the U.S. (see Figure 1). The study hypotheses are:

Hypothesis 1: Both distributive justice and procedural justice will be related to Hong Kong employees' intent to stay with the current organization, job satisfaction, and evaluation of supervision.

Hypothesis 2: Procedural justice will moderate the relationship of distributive justice with Hong Kong employees’ evaluation of supervision, but not with intent to stay or job satisfaction.

Hypothesis 3: Gender will moderate the relationship of distributive and procedural justice with intent to stay, job satisfaction, and evaluation of supervision so that procedural justice will have a stronger relationship than distributive justice with work outcomes for Hong Kong women.

Hypothesis 4: Procedural justice will have a larger effect on Hong Kong employees’ evaluation of supervision, and distributive justice will have larger effects on Hong Kong employees’ intent to stay and job satisfaction.

Data and Measures

Sample

The data for Hong Kong employees were obtained in 1995 from structured closed-end telephone interviews. Respondents were chosen at random based on a probability sampling of residential telephone numbers in Hong Kong. Interviewers contacted 1014 persons and obtained responses from 887 for a response rate of 87 per cent. Respondents were limited to full-time employees working 35 hours or more per week for an employer. Self-employed and part-time workers were excluded from the interviews. Respondents working in more than one job were included in the sample, as long as they worked 35 or more hours for one employer. The sample is representative of the 1995 Hong Kong workforce in gender, age and industrial composition (Hong Kong Census and Statistics Department, 1996).

The interview questions were originally developed in English, and subsequently translated to colloquial Cantonese (the dialect spoken in Hong Kong) by a research assistant majoring in Chinese Language Translation at a university in Hong Kong. This translation was reviewed and corrected by the third author. The questions were then back translated from verbal Cantonese and written Chinese to English by two other research assistants. After modification to improve the agreement of the back-translated version with the English, the third author also listened whilst interview supervisors asked the questions in the Cantonese dialect. This assured that the written Chinese was translated properly when verbalized in colloquial Cantonese. The survey originally included 122 questions. Our pilot tests of this survey indicated that the length needed to be reduced to increase the likelihood of completing the survey within one phone call. Thus, the final interview was reduced to 91 questions. The average interview time was 16 minutes. The 91 closed-end interview questions were presented to each interviewer in written Chinese via a computer assisted interview system, which captured the responses at the time of the interview. This system helped assure that the same questions were asked in the same order in each interview.
Measures

*Intent to stay.* This variable is measured by the responses to a single question asking: ‘Taking everything in to consideration, how likely is it that you will make a genuine effort to find a new job with another employer within the next year?’ Possible responses were: 1 = very likely; 2 = somewhat likely; and 3 = not at all likely.

*Job satisfaction.* This variable is measured as the mean of a 5-item scale ($x = 0.68$). Three of the items are drawn from a scale for job satisfaction used previously by Quinn and Staines (Cook *et al.*, 1981). The five questions address the extent to which the respondent would encourage a friend to take a similar job, the respondent would decide again to take the same job, the job measures up to the job the respondent wanted, and the respondent is satisfied overall with the job.

*Evaluation of supervision.* This is measured as the mean of a 4-item scale ($x = 0.70$). Three of the items are drawn from a similar scale used previously by Quinn and Staines (Cook *et al.*, 1981). The four items address the extent to which an employee’s supervisor is concerned about the welfare of employees, is helpful to employees in getting their work done, praises work done well, and is competent in supervision.

*Distributive justice.* This variable is measured as the mean of a 5-item scale ($x = 0.68$). The items describe the respondent’s perceptions that in his/her organization, job decisions are unbiased, pay and benefits are fairly distributed, and promotions are based on other criteria besides favouritism. The items are consistent with other measures of distributive justice (Folger and Konovsky, 1989; Cropanzano and Randall, 1993; McFarlin and Sweeney, 1992).

*Procedural justice.* This is measured as the mean of a 5-item scale ($x = 0.69$). The items cover the extent to which in the respondent’s organization people affected by decisions are asked for input, employees can appeal against management decisions, and the organization promotes employee happiness. These items are consistent with the dimensions of procedural justice (Folger and Konovsky, 1989). The items are framed to request the respondent to characterize his/her organization.

*Gender of respondent.* This is measured as the interviewer’s identification of the sex of the respondent at the time of the interview. It is coded 1 = male; 2 = female.

Consistent with earlier studies (McFarlin and Sweeney, 1992; Sweeney and McFarlin, 1997) we statistically controlled variables that may affect employee job satisfaction, intent to stay and evaluation of supervision. The variables used previously were age, education level, tenure, and salary level. Tenure is measured as the number of years a respondent has worked for his/her current organization. Salary is based on each respondent placing his/her current salary from their primary job into one of 11 categories of amounts expressed in Hong Kong dollars earned per month. This response was converted to the dollar amount corresponding to the mid-point of each category. Education is measured as a categorical variable with separate values for completion of some secondary school or less, completion of secondary school or a diploma and completion of a university degree or more. Since the intervals between the categories are not equal in size, we followed Pedhazur (1982) and dummy-coded a variable to compare the higher education levels with the lowest category. Age is measured in years as reported by each respondent.
Results

After deletion of cases with missing values on the study variables, our sample contains 783 Hong Kong employees. The means, standard deviations and zero-order correlations of the variables are shown in Table 1. As this Table shows, the outcome variables are significantly intercorrelated (mean correlation = 0.28, p < 0.01). Job satisfaction and evaluation of supervision have the largest correlation (0.40, p < 0.01), possibly reflecting the influence of supervisory style on employee job satisfaction (Locke, 1976; Spector, 1997). Distributive and procedural justice are also significantly correlated with the outcome measures (mean correlation = 0.30, p < 0.01).

To test Hypothesis 1, that predicts both procedural and distributive justice are related to an employee’s intent to stay, job satisfaction, and evaluation of supervision, we analysed three separate hierarchical regressions, which are presented in Table 2.

In each of the regression models, we first entered the control variables (age, tenure, salary level and education) as a block, followed by the measures of distributive and procedural justice. As Table 2 shows, both distributive justice and procedural justice are significant predictors of a Hong Kong employee’s job satisfaction and evaluation of supervision. Although entry of both justice variables significantly improved the fit of the regression model, only distributive justice is a predictor of intent to stay for Hong Kong workers. These results generally support Hypothesis 1 that predicts that both procedural and distributive justice will be related to work outcomes.

To test Hypothesis 2, which predicts that procedural justice will moderate the relationship of distributive justice with Hong Kong employees’ evaluation of supervision, we entered a variable modelling this interaction into the three regression models. These results are also shown in Table 2. For Hong Kong employees, adding the interaction of procedural and distributive justice to the multiple regression models following the main effects resulted in a significant change in the fit of the models predicting intent to stay and job satisfaction, but not the model predicting evaluation of supervisor. While the change in $R^2$ associated with entering the interaction term is small (0.01, p < 0.05), it is statistically significant. Interaction variables often have small effects in regression models that also contain the main effects (McClelland and Judd, 1993). The sign of the interaction term is positive which indicates, as hypothesized, that when Hong Kong employees have higher levels of procedural justice, they also have higher levels of job satisfaction across all levels of distributive justice (Cohen and Cohen, 1983). The moderating relationship is graphed in Figure 2. Following Cohen and Cohen’s (1983) suggested procedure, we evaluated the regression predicting job satisfaction for high (median plus one standard deviation) and low (median minus one standard deviation) levels of procedural justice.

These results do not support Hypothesis 2, since procedural and distributive justice have interactive effects on Hong Kong employees’ intent to stay and job satisfaction rather than on evaluation of supervision.

To test Hypothesis 3, which predicts that procedural justice will be more strongly related to work outcomes for women, we entered variables which model the interaction of gender with distributive and procedural justice into the three regression models after entering the main effects. The results are also shown in the lower portion of Table 2. Contrary to Sweeney and McFarlin’s (1997) findings for U.S. employees, none of the interactions of gender with distributive or procedural justice significantly changed the fit of the regression models for Hong Kong employees. These results do not support Hypothesis 3.

Hypothesis 4 predicts that procedural justice will have a stronger relationship with evaluation of supervision, and distributive justice will have a stronger relationship with intent to stay and job satisfaction. This hypothesis was tested by examining the incremental increase in regression $R^2$.
<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Job satisfaction</td>
<td>2.54</td>
<td>0.42</td>
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<tr>
<td>2. Intent to stay</td>
<td>2.36</td>
<td>0.69</td>
<td>0.33</td>
<td></td>
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<tr>
<td>3. Evaluation of supervisor</td>
<td>2.73</td>
<td>0.60</td>
<td>0.40</td>
<td>0.12</td>
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<tr>
<td>4. Gender of respondent</td>
<td>1.35</td>
<td>0.48</td>
<td>0.06</td>
<td>0.04</td>
<td>0.04</td>
<td></td>
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<tr>
<td>5. Age</td>
<td>34.97</td>
<td>10.39</td>
<td>0.09</td>
<td>0.34</td>
<td>−0.08</td>
<td>−0.21</td>
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<tr>
<td>6. Tenure</td>
<td>5.81</td>
<td>6.57</td>
<td>0.03</td>
<td>0.20</td>
<td>−0.05</td>
<td>−0.13</td>
<td>0.44</td>
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<tr>
<td>7. Salary (000's)</td>
<td>13.81</td>
<td>7.91</td>
<td>0.08</td>
<td>0.02</td>
<td>0.02</td>
<td>−0.15</td>
<td>0.07</td>
<td>0.32</td>
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<tr>
<td>8. Less than secondary education</td>
<td>0.36</td>
<td>0.48</td>
<td>−0.02</td>
<td>0.16</td>
<td>−0.08</td>
<td>−0.13</td>
<td>0.38</td>
<td>−0.04</td>
<td>−0.34</td>
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<tr>
<td>9. Secondary/diploma education</td>
<td>0.50</td>
<td>0.50</td>
<td>0.01</td>
<td>−0.08</td>
<td>0.05</td>
<td>0.17</td>
<td>−0.31</td>
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<td>−0.01</td>
<td>−0.75</td>
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<td>10. University degree or more</td>
<td>0.14</td>
<td>0.35</td>
<td>0.02</td>
<td>−0.10</td>
<td>0.04</td>
<td>−0.07</td>
<td>−0.09</td>
<td>0.00</td>
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<td>−0.41</td>
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<tr>
<td>11. Distributive justice</td>
<td>2.80</td>
<td>0.60</td>
<td>0.36</td>
<td>0.21</td>
<td>0.38</td>
<td>0.04</td>
<td>0.07</td>
<td>0.06</td>
<td>0.04</td>
<td>−0.02</td>
<td>−0.01</td>
<td>0.04</td>
<td></td>
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<tr>
<td>12. Procedural justice</td>
<td>2.50</td>
<td>0.60</td>
<td>0.30</td>
<td>0.10</td>
<td>0.46</td>
<td>0.07</td>
<td>−0.05</td>
<td>−0.02</td>
<td>−0.02</td>
<td>−0.03</td>
<td>0.05</td>
<td>−0.02</td>
<td>0.38</td>
<td></td>
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</tbody>
</table>

Correlations larger than 0.06 are significant at $p < 0.05$; correlations larger than 0.08 are significant at $p < 0.01$. 
Table 2. Results of hierarchical multiple regression analyses (N = 783)

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Betas for dependent variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intent to stay</td>
</tr>
<tr>
<td>Gender of respondent</td>
<td>0.12*</td>
</tr>
<tr>
<td>Age</td>
<td>0.30</td>
</tr>
<tr>
<td>Tenure</td>
<td>0.06</td>
</tr>
<tr>
<td>Salary</td>
<td>0.05</td>
</tr>
<tr>
<td>Secondary education/diploma</td>
<td>-0.06</td>
</tr>
<tr>
<td>University degree or more</td>
<td>-0.12†</td>
</tr>
<tr>
<td>ΔR² for Control Variables</td>
<td>0.14</td>
</tr>
<tr>
<td>F for ΔR²</td>
<td>20.93†</td>
</tr>
<tr>
<td>Distributive justice</td>
<td>0.16†</td>
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<tr>
<td>Procedural justice</td>
<td>0.05</td>
</tr>
<tr>
<td>ΔR² for justice variables</td>
<td>0.03</td>
</tr>
<tr>
<td>F for justice variables</td>
<td>15.80†</td>
</tr>
<tr>
<td>Total R²</td>
<td>0.17</td>
</tr>
<tr>
<td>Total regression F</td>
<td>20.25†</td>
</tr>
</tbody>
</table>

**Interactions**

| Distributive × procedural justice            | 0.45           | 0.50             | 0.30                      |
| ΔR²                                         | 0.01           | 0.01             | 0.00                      |
| F for interaction variable                  | 4.35†          | 5.41†            | 2.21                      |
| Distributive justice × sex of respondent    | 0.01           | -0.18            | 0.13                      |
| ΔR²                                         | 0.00           | 0.00             | 0.00                      |
| F for interaction variable                  | 0.00           | 0.87             | 0.49                      |
| Procedural justice × sex of respondent      | 0.03           | -0.26            | 0.10                      |
| ΔR²                                         | 0.00           | 0.00             | 0.00                      |
| F for interaction variable                  | 0.03           | 2.21             | 0.33                      |
| Distributive × procedural justice × sex      | 0.11           | -0.06            | 0.12                      |
| ΔR²                                         | 0.00           | 0.00             | 0.00                      |
| F for interaction variable                  | 0.77           | 0.21             | 1.12                      |

* p < 0.10; † p < 0.05; ‡ p < 0.01.

when each type of justice was entered into the regression models following the other justice variable (Cohen and Cohen, 1983; Folger and Konovsky, 1989). These results are shown in Table 3.

Adding procedural justice after distributive justice into the regression models results in significant increases in the regression R² for job satisfaction (0.03) and evaluation of supervision (0.11), but not for intent to stay. The change in fit of the regression model predicting evaluation of supervision is substantially larger. The changes in R² of both regression models for intent to stay and job satisfaction due to the addition of distributive justice after procedural justice (0.02 and 0.07 respectively) are larger than the increases associated with adding procedural justice after distributive justice (0.00 and 0.03 respectively). The change in regression R² for evaluation of supervision due to adding distributive justice (0.05) after procedural justice is substantially smaller than the increase associated with adding procedural justice (0.11) after distributive justice. These results support Hypothesis 4.

The relationships of distributive and procedural justice with job satisfaction, intent to stay and evaluation of supervision for Hong Kong employees are summarized in the lower portion of Figure 3. To facilitate comparison of our results with the relationships among distributive justice, procedural justice, and work outcomes that have been found in previous studies of U.S. employees, we have included the diagram from Figure 1 in the upper portion of Figure 3.
Figure 2. Moderating effects of procedural justice on job satisfaction of Hong Kong employees

Table 3. Incremental improvement in regression fit ($R^2$) for distributive and procedural justice

<table>
<thead>
<tr>
<th>Incremental change in fit due to adding procedural justice after distributive justice in regression</th>
<th>Dependent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\Delta R^2$</td>
<td>Intent to stay</td>
</tr>
<tr>
<td>F increment</td>
<td>Job satisfaction</td>
</tr>
<tr>
<td></td>
<td>Evaluation of supervision</td>
</tr>
<tr>
<td>0.00</td>
<td>0.03</td>
</tr>
<tr>
<td>0.11</td>
<td>1.51</td>
</tr>
<tr>
<td>30.34†</td>
<td>116.97†</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Incremental improvement due to adding procedural justice after procedural justice in regression</th>
<th>Dependent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\Delta R^2$</td>
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</tr>
<tr>
<td>0.02</td>
<td>0.07</td>
</tr>
<tr>
<td>0.05</td>
<td>21.30†</td>
</tr>
<tr>
<td>60.78†</td>
<td>55.05†</td>
</tr>
</tbody>
</table>

* $p < 0.05$; † $p < 0.01$.

It is possible some of the relationships among our variables are inflated due to use of a common method for collecting all of the measures (Podsakoff and Organ, 1986). We addressed this concern empirically by examining alternative confirmatory factor models. The simplest of these models links all of our measures to a single factor, a representation which suggests that all of the relationships are due to method variance (Podsakoff and Organ, 1986; Sweeney and McFarlin, 1997). We compared the fit of this model with two others: (a) a two factor model with work outcome and justice variables linked to one factor and the control variables to the second; and (b) a three factor model linking outcomes, justice variables and control to separate factors. The three factor model, which corresponds to our study, fit the data far better than the others (change in $\chi^2$ from the one factor model = 5124.85, $d.f. = 3$, $p < 0.001$; change in $\chi^2$ from the two factor model = 24.54, $d.f. = 2$, $p < 0.001$). While this analysis does not preclude
Figure 3. Comparison of distributive and procedural justice as predictors of work outcomes for Hong Kong and U.S. employees. (a) Relationships of distributive and procedural justice with employee outcomes found in previous studies of U.S. employees. (b) Relationships of distributive and procedural justice with employee outcomes for Hong Kong employees.

method variance as an influence, it does suggest that the constructs we studied are empirically separable.

Discussion

After controlling the differences in age, salary, gender, tenure and education, distributive and procedural justice accounted for 3 per cent of the variance in intent to stay, 15 per cent of the variance in job satisfaction and 26 per cent of the variance in evaluation of supervision of Hong Kong employees. These results alone represent an advance in the literature as we are unaware of any research that has examined how organizational justice variables predict these work outcomes for Hong Kong employees.

We found support for two hypotheses that predicted the relationships of distributive and procedural justice with work outcomes for Hong Kong employees would be similar to the
relationships found in previous studies of U.S. employees. Two other hypotheses derived from these previous studies of U.S. workers were not supported. Comparing the predictive model for U.S. employees with the predictive model for Hong Kong employees (refer to Figure 3) shows that the main effects are similar, but the moderating effects are different.

First, consistent with findings for U.S. employees (McFarlin and Sweeney, 1992; Sweeney and McFarlin, 1997), both distributive and procedural justice have effects on Hong Kong employees' job satisfaction and evaluation of supervision. This result suggests that cultural differences aside, employees in both Hong Kong and the U.S. consider both reward allocations and the nature of an organization's dealings with employees in constructing judgments about job satisfaction, intent to stay, and evaluation of supervision. Second, consistent with previous studies in the U.S., procedural justice has a larger influence on evaluation of supervision and distributive justice has a larger effect on intent to stay and job satisfaction in Hong Kong. Despite cultural differences, Hong Kong and U.S. employees may focus primarily on the adequacy and fairness of the rewards and recognition actually received when assessing job satisfaction and intention to stay with an organization.

Contrary to previous findings for U.S. employees, procedural justice does not moderate the relationship of distributive justice with evaluation of supervision for Hong Kong workers. Instead, in Hong Kong, procedural justice moderates the effects of distributive justice with job satisfaction and intent to stay. This difference between U.S. and Hong Kong employees may be attributable to the cultural influences of power distance and collectivism (Hofstede, 1991; Bond and Hwang, 1987). For example, one defining feature of lower power distance cultures such as the U.S. is the tendency for employees to seek justification for differences in rewards (Bond and Hwang, 1987). Thus, in the U.S., evaluation of supervision may be contingent on perceptions of how well the procedures of the organization justify differences in the allocation of individual rewards such as pay, status and power. If U.S. workers perceive high levels of procedural justice, they tend to evaluate supervision more favourably across all levels of distributive justice. However, Hong Kong employees, who are accustomed to greater power distance in organizations, may expect that rewards will be allocated without procedural justification (Bond and Hwang, 1987). If so, levels of procedural justice may have no effect on how Hong Kong employees evaluate supervision across levels of distributive justice.

In addition, because U.S. employees are more individualistic, they may consider procedural justifications as largely unimportant in assessing the effects of distributive justice on job satisfaction and intention to stay. What may count is whether individual effort and performance, is adequately rewarded. Thus, levels of procedural justice do not alter the effects of distributive justice on intent to stay and job satisfaction of U.S. workers. On the other hand, the more collective orientation of Hong Kong employees may result in more attention on the social and group effects of procedural justice. For Hong Kong workers, higher levels of procedural justice may equate to more respectful social treatment, which is a highly valued personal outcome (Hui and Tan, 1996). In addition, high levels of procedural justice may be viewed by Hong Kong employees as indicating acceptance and fair treatment within their work group (Tyler, 1989; Tyler et al., 1996). This outcome may be considered as important as other rewards available from work (Lind and Earley, 1992; Tyler et al., 1996). Thus high levels of procedural justice may be related to higher levels of Hong Kong employees' job satisfaction and intent to stay regardless of the levels of distributive justice.

Although Sweeney and McFarlin (1997) found that procedural justice had significantly larger effects on work outcomes than did levels of distributive justice for U.S. women, gender did not interact with distributive or procedural justice in predicting outcomes for Hong Kong women employees. Sweeney and McFarlin's (1997) explanation for U.S. women placing greater emphasis
on procedural justice is that they may perceive that their ability to obtain higher levels of rewards are blocked. Women may view chances of obtaining rewards as remote due to long standing discrepancies in pay levels of men and women with similar human capital (Jacobs, 1992). These limitations in expected rewards may lead U.S. women to focus more attention and importance on procedural justice because it is attainable (Sweeney and McFarlin, 1997). However, in our random sample, Hong Kong women's average earnings are 83 per cent of the average for men, compared with 64 per cent in a similar random sample of U.S. employees (Fields, 1994 Dissertation, Georgia Institute of Technology, U.S.A.). In addition, the correlation of gender with pay level in our study data (−0.15) is significantly smaller (t = 6.23, p < 0.01, after Fisher's r to Z transformation (Hays, 1988)) than the correlation of gender with pay (−0.37) in the sample of U.S. workers studied by Sweeney and McFarlin (1997). Thus, the absence of moderating effects of gender for Hong Kong employees may be attributable to more favourable relative pay levels for women in Hong Kong. That is Hong Kong women may not place less emphasis than men on distributive justice because women in Hong Kong expect to obtain fair treatment in the allocation of rewards.

Practical implications and directions for future research

Our results provide new insight into how cultural differences may alter the effects that organizational practices have on employees in different countries. In this case, cultural dimensions must be considered in anticipating how employees may interpret and react to distributive and procedural justice in different countries. In a global economy, managers have to be concerned about whether strategies to build employee commitment that work in the U.S. will also work in locations such as Hong Kong. Our results suggest, for example, that Hong Kong workers pay attention to both distributive and procedural justice. In addition, like U.S. workers, perceived fairness in reward allocations (distributive justice) has the most effect on employee job satisfaction and intentions to stay with an organization. However, our results also show that in Hong Kong, more favourable employee views of the procedures used in allocating rewards and fairness in treatment (procedural justice) will tend to moderate the effects of rewards on intention to stay and job satisfaction. Thus, paying more attention to fairness of treatment of employees in Hong Kong may have substantial pay-offs in individual employee loyalty and happiness. While previous studies of U.S. workers suggest that women may pay more attention to procedural justice than men, our results suggest that women in Hong Kong weight distributive and procedural justice about the same as men. This result suggests that Hong Kong women employees may expect equal treatment with men in recognition and rewards, an expectation U.S. companies must be prepared to meet when employing staff in Hong Kong.

While our data provide a unique look at Hong Kong workers across industries, there are also limitations. Our data are cross-sectional and can not be used to infer causality. The differences we found between the effects of justice perceptions on work outcomes of Hong Kong workers compared with the results of previous studies for U.S. workers seem to be attributable to cultural dimensions. However, whether the similarities between the patterns of the relationship for U.S. and Hong Kong employees reflect the institutionalization of western organization–employee relationships in Hong Kong or reflect universal values held across cultures is impossible for us to answer. These underlying causes should be investigated further in future studies.

We have used measures that have been used previously in studies of English speakers. Although the internal reliabilities of the multi-item measures were acceptable, we have not
investigated construct equivalence from English to Chinese. Future research should address this
issue by asking the same questions of similar samples of U.S. and Hong Kong employees and
testing measurement equivalence (Riordan and Vandenburg, 1994). In this study we also relied
on a single item measure for intent to stay. Thus we are concerned about this measure’s reliability.
There is some evidence within our data that this measure does behave much as we would expect.
That is, intent to stay has a larger positive correlation with job satisfaction than with evaluation
of supervisor, has moderately large positive correlations with age and tenure, and significant
negative correlations with higher levels of education. It would also be useful for future studies to
measure and control for whether an employee’s supervisor is of the same or different sex as well
as the possible effects of occupation type and job level on work outcomes.

Our results suggest that neither cultural dimensions nor institutionalized organizational
practices provide a complete answer to questions of how justice perceptions may play out in
different cultural settings. This question needs to be explored more completely in future studies.
Future studies might include measures of power distance and collectivism so that the influence
of these cultural dimensions on the relationships among justice and work outcomes could be
directly assessed.

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J. Organiz. Behav. 21, 547–562 (2000)