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Social Comparison and Distributive Justice: East Asia Differences

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Abstract Using a survey of 393 employees who were natives and residents of China, Japan, and South Korea, we examined the extent to which employees from different countries within East Asia experience distributive justice when they perceived that their work outcomes relative to a referent other (i.e., someone with similar "inputs" such as educational background and/or job responsibilities) were (1) equally poor, (2) equally favorable, (3) more poor, or (4) more favorable. As predicted, we found that when employees perceived themselves relative to a referent other to be recipients of more favorable outcomes (i.e., pay, job security), Chinese and Korean employees were less likely than Japanese employees to experience distributive injustice. We also found that these differences were partially mediated by employees' level of materialism. Theoretical and practical implications of our findings are discussed.

Keywords Distributive justice · Social comparison · Cross-cultural differences · East Asia · Materialism

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Introduction

Distributive justice, which refers to perceived fairness of organizational outcomes that people receive (Adams 1965), has received a great deal of attention by organizational behavior scholars (Shao et al. 2013) and by ethics scholars (Bacha and Walker 2013; Harcourt et al. 2013; Wood et al. 2013). One fundamental principle in the distributive justice literature is that people form justice perceptions by comparing their outcomes to those of referent others, yielding what are termed social comparisons (Adams 1965; Cropanzano and Ambrose 2001). Researchers (e.g., Chen et al. 2002; Leung et al. 1996; Lind et al. 1998) have found that employees generally perceive work-related outcomes (e.g., pay and other types of reward allocations) to be more fair when distributed in accordance with the effort and performance of themselves and referent others (i.e., other employees with similar job responsibilities, education levels, and status).

Much has been learned from past social comparison studies of distributive justice, but several important issues have yet to be addressed. First, we know little about how the effects of social comparisons on distributive justice differ across cultures and why such cultural differences might occur. In this investigation, we examine East Asian cultures, focusing on China, Japan, and South Korea (hereafter referred to as "Korea"), for several theoretical and practical reasons. First, these three East Asian countries have been most frequently examined in previous justice research comparing Asian and Western cultures. Second, East Asian countries have been identified as a single cultural cluster (Hofstede 2001; House et al. 2004), even though they may differ substantially from one another in certain cultural values relevant to social comparison (Kim and Leung 2007; Kim et al. 2010). Third, China,

Japan, and Korea are increasingly involved in cross-national trade and alliances, both with one another and with countries in the West (World Trade Organization 2009). Understanding the nature and effects of perceived justice in these three Asian countries can help managers more effectively manage employees and conduct business in one of the most formidable markets in the world. Thus, the first goal of this study is to examine differences in the nature and effects of social comparison on perceived distributive justice across Chinese, Japanese, and Korean employees.

In addition, previous research has yet to clarify the process by which perceptions of the self and a referent other are combined to yield perceptions of fairness. One perspective indicates that perceived fairness is greatest when the outcomes received by the self and a referent other are equal. This perspective has its roots in classic discussions of social comparison (e.g., Byrne 1971; Festinger 1954) and is manifested in current justice research (e.g., Choi and Chen 2007; Leung et al. 1996). An alternative perspective suggests that perceived fairness is greatest when the outcomes for the self are somewhat greater than those of the other. This notion represents a form of egocentric bias in which people tolerate comparisons that put them in a favorable position relative to others (Greenberg et al. 2007; Messick and Sentis 1983). A third perspective, which draws from an alternative version of egocentric bias, indicates that people give greater weight to the favorability of their own outcomes when forming comparisons with others. This idea is consistent with research on comparative judgments (e.g., Chambers and Windschitl 2004; Tversky 1977), and implies that perceived fairness depends more on what the self receives than what is received by referent others. The processes that underlie these three perspectives can influence social comparisons to varying degrees, yet the relative strength of these processes remains unknown. Thus, the second goal of this study is to evaluate these perspectives as they apply to comparisons of the perceived self and other in relation to perceived fairness.

To summarize, it is important to examine how social comparison is related to perceived distributive justice and how the effects of social comparison may differ across East Asians. To achieve these ends, we examine how social comparison influences fairness perceptions regarding pay, promotion opportunity, and job security among Chinese, Japanese, and Korean employees. We focus on pay, promotion opportunity, and job security because they represent material outcomes that employees value at work (Harcourt et al. 2013; Super 1973) and have been considered important outcomes in the distributive justice literature (e.g., Brockner et al. 1986).

Theoretical Background and Hypotheses

The Effect of Mismatched Outcome on Distributive Justice

We suggest that individuals perceive outcome unfairness when their outcomes are less than what a referent other receives, for two reasons. First, according to equity theory (Adams 1965), justice requires that similar cases be treated similarly and dissimilar cases be treated dissimilarly in direct proportion to the relevant similarities and differences between them. That is, people tend to perceive unfairness when their outcomes such as pay, promotion opportunity, and job security are less favorable than those received by a referent other (Leventhal 1980). Such negatively discrepant comparisons yield perceived unfairness because individuals feel unjustly deprived of something desired that others have (Crosby 1976; Martin 1981). Consistent with this reasoning, Chen et al. (2002) found that employees tended to perceive less compensation fairness (hence less distributive justice) when their compensation was less than referent others within their organization with whom they shared common status. Second, from a cognitive perspective, outcomes that referent others receive can be used to gauge whether the self is unfairly treated (Folger and Cropanzano 1998). Folger and Cropanzano posit that when judging whether an outcome such as salary raise is fair, one of the criteria used by individuals is to imagine what the nature of the experience *would have been*. When individuals see a referent other with outcomes that are more favorable than their own, they tend to believe that they themselves would have received outcomes that are more favorable, which in turn causes them to perceive they have been harmed and unfairly treated.

When an individual's outcomes (e.g., pay, promotion, job security) *exceed* what a referent other receives, fairness judgments tend to become egocentric (Choi and Chen 2007). That is, as Lind et al. (1998) posit, "justice judgments have a strong self interest component—that what is seen as fair is, to some extent at least, that which benefits the individual making the judgment" (p. 3). People tend to believe that they deserve a larger share of available resources than others, and that receiving more resources than others is not unfair (Babcock and Loewenstein 1997). For instance, Messick and Sentis (1983) found that participants believed they should be paid nearly $5 more than their partners who performed identical work. In a similar vein, Loewenstein et al. (1992) found that plaintiffs in a mock court case believed it was fair for them to receive approximately twice as much in damages than the defendants. As a result, distributive justice should increase as the self's pay, promotion opportunity, and job security exceed what a referent other receives. Although receiving excess

outcomes can make individuals happy, if the excess is too extreme, they can feel uneasy and guilty, which in turn can create a sense of injustice (Weiss et al. 1999). Consistent with this, Adams (1965) posited that recipients of over-reward (i.e., "advantageous inequity") would initially justify this by cognitively distorting their inputs to be greater than the inputs of a referent other, but that guilt would occur when over-reward is extreme, causing the advantaged recipients to feel pressed to work harder. Taken together, the foregoing discussion leads us to predict that the level of outcomes people receive relative to a referent other is related to distributive justice assessments in an inverted U-shaped (hence curvilinear) curve, in a pattern consistent with the "too much of a good thing" (TMGT) effect (Pierce and Aguinis 2013). Thus, we predict

Hypothesis 1 Distributive justice increases as the self's outcomes (i.e., pay, promotion opportunity, and job security) increase toward what a referent other receives, and continues to increase as the self's outcomes exceed what a referent other receives, decreasing only when the excess is substantial.

The Effect of Matched Outcome-Levels of Varying Positivity on Distributive Justice

We offer two competing hypotheses regarding how employees will respond to matched outcome-levels. One hypothesis, which draws from equity theory (Adams 1965) and current justice research (e.g., Choi and Chen 2007), predicts that justice is perceived when the self receives the same outcomes to those received by a referent other, regardless of whether the outcomes are low or high in absolute terms. This hypothesis is consistent with the original presentation of equity theory by Adams (1965) and has been adopted by subsequent studies (e.g., Chen et al. 2002; Leung et al. 1996) of distributive justice that have not distinguished the absolute levels of outcomes in the social comparison processes, instead focusing exclusively on whether outcomes are the same as those that a referent other receives. Thus, we predict that

Hypothesis 2a Distributive justice is the same when the outcomes (i.e., pay, promotion opportunity, and job security) received by the self and a referent other are both high as when both are low.

An alternative to Hypothesis 2a is suggested by a version of egocentric bias, indicating that people give greater weight to the favorability of their own outcomes than to that of a referent other in making justice judgments based on social comparison (Chambers and Windschitl 2004). Thus, perceived distributive justice should be lower when one's outcome is low than high, regardless of what the outcomes of similar others are. Conversely, people may perceive low fairness when their outcomes are poor even though a referent other's outcomes are also poor. Consistent with this notion, Tyler and Lind (1992) suggested that few employees will view poor outcomes as fair, even when these outcomes match the level of outcomes received by a referent other. When perceived fairness increases with the outcomes received by the self irrespective of those received by a referent other, perceived distributive justice will be higher when outcomes received by the self and other are both high rather than low, with this effect driven solely by the outcomes received by the self. The reasoning leads to our second competing hypothesis:

Hypothesis 2b Distributive justice increases as the outcomes received by the self and a referent other both increase from low to high.

East Asia Differences in Social Comparison Effects

In East Asian cultures, similarities to others are socially encouraged and sometimes even forced to enhance solidarity, harmony, and cohesion. In such cultures, people tend to be knowledgeable of others and sensitive to what others have. Sensitivity to others may result in "a dense and richly elaborated store of information about others (Markus and Kitayama 1991, p. 231)." Thus, when developing fairness perceptions, East Asians are generally sensitive to social comparison with referent others. Indirect support for this argument comes from the distributive justice literature showing that, when allocating outcomes, East Asians prefer to distribute equal amounts of outcomes to referent others (i.e., equality, Leung and Bond 1982).

However, we suggest that people from China, Japan, and Korea differently assess distributive justice in response to comparing their outcomes to those of a referent other due to differences in materialism. Materialism, according to the *Oxford English Dictionary*, is "a devotion to material needs and desires, to the neglect of spiritual matters." Materialism is deemed a *cultural* value, rather than merely an individually held value, because it varies across countries (Kim and Leung 2007). Individuals with a high sense of materialism consider material well-being as the evidence of success and strive to obtain material objects that project a desired self image (Richins and Dawson 1992). As a result, when they receive lower outcomes than those of a referent other, people with higher rather than lower materialism are more likely to perceive unfairness. In addition, individuals high in materialism are more self-centered and less concerned about others (Richins and Dawson 1992). Thus, when materialists receive greater outcomes than those of a referent other, they tend to show a pronounced egocentric bias, such that they believe they deserve greater

outcomes. In short, materialists are more ego-invested in the superiority of their material outcomes, such that they will justify superior outcomes to themselves as fair.

Regarding cross-cultural differences in materialism, Kim and Leung (2007) found that Japanese were generally less materialistic relative to Chinese and Koreans. The country differences correspond to the levels of the per capita gross national product (GNP) of each country. As per capita GNP increases, materialist values decrease because improvements in the standard of living lead to decreased anxiety over basic survival needs (Inglehart 1981). These country differences in materialism, coupled with the relationship between materialism and tendencies toward egocentric biases, suggest that the more materialistic Chinese and Koreans would be more prone than the Japanese to assess fairness in egocentric ways. Some particular zones of China, such as Hong Kong, are wealthy but nonetheless materialistic, which might reflect continual immigration from the poorer mainland and the cushion that wealth provides against political uncertainty.

Materialism levels should matter in inequitable situations. On the one hand, in inequity-disadvantage situations, where an individual perceives less favorable outcomes relative to a referent other (Fehr and Schmidt 1999), the Chinese and Koreans are more likely to feel deprived than the Japanese and therefore will perceive greater unfairness. On the other hand, when material outcomes to the self are higher than those received by a referent other, Chinese and Korean employees are less likely than Japanese employees to view this inequity-advantage (Fehr and Schmidt 1999) as unfair. This reasoning suggests that individuals who have higher materialism, as we expect for Chinese and Korean employees relative to Japanese employees, should be less sensitive to being over rewarded. Thus, the location of the bend in the curvilinear relationship predicted by Hypothesis 1 should be farther above the point of outcome equivalence among the Chinese and Koreans than for the Japanese due to differences in materialism. This logic leads us to predict:

Hypothesis 3 The curvilinear relationship predicted by Hypothesis 1 is stronger for employees from China and Korea than employees from Japan such that the placement of the bend in the curvilinear relationship is farther from the point of outcome equivalence for employees from China and Korea relative to employees from Japan.

Hypothesis 4 The tendency for employees from China and Korea to have the placement of the bend in the curvilinear relationship farther from the point of outcome equivalence than employees from Japan, as predicted by Hypothesis 3, will be mediated by materialism, due to Japanese employees being the least materialistic.

Method

Sample and Procedures

Surveys were manually distributed to employees of companies that met the following three criteria: (1) the companies were located in highly populous urban areas and major commercial hubs within China, Japan, and Korea (i.e., Hong Kong, Yokohama, and Seoul, respectively); (2) the companies employed at least 500 employees, and (3) the companies had a human resource manager willing to distribute the surveys, identified by social network-connections involving one of the research team members. We chose large companies situated in major cities to obtain data that would be as generalizable as possible to other companies. To incentivize employees, we provided financial compensation for completing the survey. We told participants the survey was voluntary and to avoid placing their names on the survey to guarantee anonymity. The surveys were initially written in English and then were translated into Chinese, Japanese, and Korean, with the translations verified using a back-translation procedure (Brislin 1986). Two bilingual individuals from each country independently translated the survey from English to Chinese, Japanese, and Korean, respectively, and all translators blind to the study's hypotheses.

Measures

Level of the Self's Outcomes at Work

We adapted the Work Values Scale (WVS; Super 1973) and asked respondents to indicate the level of outcomes they received on a seven point scale (1 = "A small amount", 7 = "A very great amount") for three types of outcomes: pay, promotion opportunity, and job security. Pay was measured with "Salary level,", "The amount of pay, and "The opportunity to become financially wealthy." Promotion was assessed with "Opportunities for advancement", "Promotion opportunity", and "Chances for advancement." The items assessing job security asked how certain they were about: "Keeping my job", "I will always have a job," and "My job will last." We told the respondents that "these questions focus on the rewards, recognition, and other outcomes people receive for the work they do. For each outcome, we would like you to answer "How much do you have at work?".

Level of a Referent Other's Outcomes at Work

To assess the level of outcomes a referent other received at work, the foregoing items were again used with the exception that the referent in the items referred to a peer.

The survey defined "a referent other" as someone who has similar job responsibilities and similar levels of education and experiences that s/he brings into the organization, consistent with previous justice studies (e.g., Chen et al. 2002; Leung et al. 1996). The respondents were asked to assess how much their referent others have for pay, promotion opportunity, and job security at work on a seven point scale (1 = "A small amount," 7 = "A very great amount").

Distributive Justice

To assess respondents' perceived distributive justice, we again used the items drawn from the WVS, but asked respondents to indicate the extent to which they perceived their pay, promotion opportunity, and job security to be fair on a seven point scale (1 = "Not at all fair", 7 = "Extremely fair"). The items averaged together to create three types of distributive justice (i.e., fairness in pay, promotion opportunity, and job security).

Materialism

To assess respondents' materialism, we used Richins and Dawson's (1992) scale for materialism. Specifically, respondents were asked to indicate on a seven point scale (1 = "Strongly disagree", 7 = "Strongly agree") how strongly they disagreed or agreed with the following three statements: "I admire people who own expensive homes, cars, and clothes," "Some of the most important achievements in life include acquiring material possessions," and "The things I own say a lot about how well I'm doing in life." Two negatively worded items from the original scale were omitted because the use of negative phrasing is connotatively different in other language than it is in English (e.g., Farh et al. 1997). One more item was deleted to increase reliability (i.e., "I like to own things that impress people.").

Country

Two dummy variables were created to operationalize respondents' nationality (i.e., $D1$, Japan = 0 and China = 1; $D2$, Japan = 0 and Korea = 1).

Analysis

The effects of social comparison on distributive justice were tested using polynomial regression analysis (Edwards 1994, 2002; Edwards and Parry 1993). A general expression for the equation that tests the effects of social comparison on distributive justice is as follows:

$$\text{Distributive justice} = b_0 + b_1 S + b_2 O + b_3 S^2 + b_4 SO + b_5 O^2 + e$$

In the above equation, S and O represent the outcomes the self receives and the outcomes a referent other receives, respectively.

To test the moderating effects of country, we used hierarchical regression analysis. We created product terms by multiplying each term in the polynomial regression by country dummy variables. We tested the incremental in R^2 yield by these product terms, controlling for country dummy variables and the original terms in the equation. Then, we substituted 0 or 1 for the dummy variables, computed compound coefficients that described surfaces for each country, and compared the compound coefficients for each country. Coefficients were compared across countries using the procedure outlined by Dwyer (1983) for testing linear combinations of regression coefficients.

In addition, to test the mediating effects of materialism, we used Edwards and Lambert's (2007) approach. Specifically, we calculated the reduced form equation for the second stage moderation model by combining two equations: the regression equation for M (i.e., $M = a_0 + a_1 D_1 + a_2 D_2 + e_M$) and the regression equation for Y (i.e., $Y = b_0 + b_1 S + b_2 O + b_3 S^2 + b_4 SO + b_5 O^2 + b_6 D1 + b_7 D2 + b_8 SD1 + b_9 OD1 + b_{10} S^2 D1 + b_{11} SOD1 + b_{12} O^2 D1 + b_{13} SD2 + b_{14} OD2 + b_{15} S^2 D2 + b_{16} SOD2 + b_{17} O^2 D2 + b_{18} M + b_{19} IM + b_{20} OM + b_{21} I^2 M + b_{22} IOM + b_{23} O^2 M + e_Y$). Here, Y represents distributive justice, $D1$ and $D2$ represent country dummy variables, and M represents materialism. In the reduced form equation, where we replaced M in the regression equation for Y with the regression equation for M, we tested whether materialism mediated the country differences in the social comparison effects using bootstrapped bias-corrected confidence intervals based on 10,000 bootstrap samples.

Results

Sample Characteristics

Table 1 shows the sample size, response rate, participant age, tenure, and sex by country. Respondents were employed in finance (10.4 %), service (22.3 %), information technology (22.8 %), manufacturing (21.3 %), education (6.2 %), and other sectors (17.0 %). There were some cross-cultural differences with regard to industry (e.g., in finance, Korea = 29.2 %, China = 3.4 %, and Japan = 4.6 %) and sex (i.e., there were more male respondents in China than in Korea). Age and tenure also differed significantly across countries ($r = .13$, $p < .01$, $r = .20$, $p < .01$). Japanese respondents were significantly

older than the Chinese and Korean respondents, whereas the Chinese respondents had less work experience than respondents from other countries. Thus, sex, age, tenure, and industry were controlled in subsequent analyses to rule out the possibility of alternative explanations for the observed cross-cultural differences.

Descriptive Results

Descriptive statistics, reliability estimates, and the correlations for all measures are reported in Table 2. As shown in Table 2, all reliability estimates exceeded the .70, except for materialism (i.e., .61). Correlations between the self's outcomes and the outcomes a referent other received were generally high, probably reflecting that participants described others in similar jobs with similar prospects. The correlation patterns among measures were similar across countries except that the correlation between the self's promotion opportunity and fairness in promotion opportunity was relatively stronger among Koreans, compared to Chinese and Japanese ($r = .61$, .38, and .41, respectively).

Testing Measurement Models

To assess the discriminant validity of the measures, confirmatory factor analyses (CFAs) were conducted using LISREL 8.80. The CFA consisted of the measures assessing study participants' perceptions of their own three types of outcomes, perceptions of the three types of outcomes received by a referent other, and justice perceptions for the three outcomes. We evaluated model fit using Chi square statistics, Chi square to degrees of freedom ratio, comparative fit index (CFI), the non-normed fit index (NNFI), and root mean square error of approximation (RMSEA). The CFA results show that the nine factor model fits the data well (χ^2 (261) = 695.85, $p < .01$; CFI = .98, NNFI = .98, and RMSEA = .06), and better than the six-factor model that treats the outcomes of the self and the outcomes a referent other as the same (i.e., χ^2 (233) = 845.34, $p < .01$, CFI = .97, NNFI = .95, and RMSEA = .09) and the three-factor model treats the outcomes of the self, the outcomes of a referent other, and fairness as the same (i.e., χ^2 (214) = 1,200.81, $p < .01$, CFI = .96, NNFI = .94, and RMSEA = .11).

In addition, to examine whether a cross-cultural comparison of these measures can legitimately be undertaken, we conducted configural invariance and metric invariance tests (Vandenberg and Lance 2000). First, the configural invariance fit indices were above the minimum requirements (i.e., χ^2 (783) = 1,448.17, $p < .01$, CFI = .97, NNFI = .96, and RMSEA = .07), suggesting that the same number of factors was applied to each country and that the items were loaded on the same dimension for each country. Second, the metric invariance fit indices were above the minimum requirements (i.e., χ^2 (819) = 1,510.90, $p < .01$, CFI = .97, NNFI = .96, and RMSEA = .07), indicating that the factor loadings were invariant across countries. Taken together, the data collected from the three countries can be legitimately combined to test structural relationships among the measures (Vandenberg and Lance 2000).

Effects of Social Comparison on Distributive justice

We first regressed the control variables (i.e., age, sex, tenure, and industry) to fairness in pay, promotion opportunity, and job security. Results showed that age, sex, and tenure were not significantly associated with fairness in pay, promotion opportunity, and job security. However, employees working in information technology reported higher fairness in pay than employees in manufacturing. R-square values for fairness in pay, promotion opportunity, and job security are .06 ($p < .01$), .05 ($p < .05$), and .02 (ns), respectively.

Recall that Hypothesis 1 predicted that distributive justice would increase as the self's outcomes (i.e., pay, promotion opportunity, and job security) increased toward what referent others received, and continued to increase as the self's outcomes exceeded what referent others receives, decreasing only when the excess is substantial. Consistent with Hypothesis 1, Table 3 (i.e., polynomial regression analysis with the control variables) shows that the slope of the surface was positive along the $O = -S$ line at the point $S = 0$, $O = 0$ for pay, promotion, and job security ($b_1 - b_2$ = .55, .65, and .45, respectively, all $p < .01$), and the downward curvature along this line was negative and significant for pay and job security ($b_3 - b_4 + b_5 = -.42$ and $-.29$, respectively, both $p < .05$). As can be seen in Fig. 1 along the $O = -S$ line, pay fairness had a curvilinear relationship with the pay the self and a referent other receives. Specifically, pay fairness increased as the self's pay increased toward the pay a referent other receives, leveled off as the self's pay exceeded the pay a referent other receives, and then decreased when the excess became extreme. The same patterns occurred for fairness in job security. However, the downward curvature along the $O = -S$ line was negative but not significant for fairness in promotion opportunity ($b_3 - b_4 + b_5 = -12$, ns). Thus, these results provide a support only for fairness in pay and job security.

Hypotheses 2a and 2b predicted the extent to which individuals would perceive distributive justice under matched outcome-circumstances—specifically, when the outcomes they and a similar other received were both high versus both low. Table 3 shows that $b_1 + b_2$ was positive and significant for pay, promotion, and job security (.67, .57, and = .64, respectively, all $p < .01$), indicating that

Table 1 Sample characteristics

Country	Sample size	Response rate (%)	Age		Sex (%)		Tenure (year)	
			M	SD	Male	Female	*M*	*S*D
Chinese	144	37	28.9	7.0	53	47	3.3	4.8
Japanese	104	27	32.9	11.4	66	34	6.7	8.4
South Korean	145	37	31.4	5.2	59	41	6.3	5.2

Table 2 Means, standard deviations, correlations, and reliabilities for variables in all data

Variables	1	2	3	4	5	6	7	8	9	10	*M*	SD	Cronbach's α
One's treatment[a]													
1. Pay	–	.58	.54	.45	.40	.34	.62	.35	.33	−.07	3.17	1.07	.76
2. Promotion opportunity	.62	–	.51	.38	.66	.43	.39	.58	.31	.03	3.11	1.29	.93
3. Job security	.49	.51	–	.22	.35	.64	.43	.34	.63	.01	3.63	1.11	.76
Other's treatment													
4. Pay	.61	.38	.30	–	.71	.57	.34	.20	.20	−.12	3.80	1.02	.78
5. Promotion opportunity	.47	.69	.37	.70	–	.65	.28	.37	.25	−.07	3.54	1.15	.90
6. Job security	.38	.41	.68	.55	.58	–	.28	.28	.39	−.07	3.98	.96	.71
Fairness													
7. Pay	.65	.47	.39	.41	.32	.25	–	.69	.62	−.12	3.44	1.23	.84
8. Promotion opportunity	.47	.61	.35	.30	.40	.27	.76	–	.55	−.04	3.52	1.37	.94
9. Job security	.37	.37	.62	.22	.23	.42	.64	.62	–	−.03	3.76	1.22	.88
10. Materialism	.10	.08	.01	.12	.04	.05	−.06	−.03	−.05	–	5.02	1.07	.54
Mean	2.82	2.90	3.39	3.27	3.19	3.57	3.24	3.34	3.61	4.47			
SD	1.08	1.26	1.23	1.07	1.10	1.06	1.21	1.33	1.25	1.17			
Cronbach's α	.83	.93	.84	.85	.90	.81	.88	.94	.89	.61			
One's treatment[b]													
1. Pay	–	.63	.45	.63	.48	.32	.69	.55	.33	.00	2.72	1.02	.83
2. Promotion opportunity	.60	–	.50	.32	.62	.31	.60	.68	.40	.02	2.82	1.19	.91
3. Job security	.44	.52	–	.14	.22	.70	.35	.41	.71	−.04	3.25	1.30	.89
A similar other's treatment													
4. Pay	.67	.38	.56	–	.70	.38	.43	.37	.09	.01	3.10	.99	.84
5. Promotion opportunity	.42	.77	.52	.58	–	.40	.37	.47	.13	−.04	3.04	.98	.87
6. Job security	.33	.44	.67	.54	.62	–	.16	.29	.47	−.07	3.41	1.07	.86
Fairness													
7. Pay	.63	.42	.36	.46	.27	.26	–	.79	.57	−.10	3.10	1.10	.86
8. Promotion opportunity	.50	.55	.29	.31	.36	.18	.82	–	.57	−.02	3.17	1.22	.93
9. Job security	.44	.40	.49	.39	.27	.38	.76	.76	–	−.08	3.48	1.26	.91
10. Materialism	.11	.04	−.13	.06	−.04	−.08	−.12	−.17	−.20	–	4.24	1.10	.61
Mean	2.50	2.70	3.25	2.78	2.91	3.22	3.16	3.32	3.56	4.04			
SD	1.03	1.05	1.29	.92	1.10	.99	1.30	1.38	1.25	1.14			
Cronbach's α	.89	.96	.83	.88	.92	.80	.94	.94	.88	.56			

[a] N = 393; China = 144; Japan = 104; South Korea = 145. Overall correlations are below the diagonal, and overall Mean, SD, reliabilities are the last three rows. China correlations are above the diagonal, and China's Mean, SD, and reliabilities are the last three columns. For overall, correlations above |.11|, $p < .05$; above |.12|, $p < .01$. For China correlations, correlations above |.19|, $p < .05$; above |.21|, $p < .01$

[b] N = 393; China = 144, Japan = 104, and South Korea = 145. Japan's correlations are below the diagonal, and Mean, SD, reliabilities are the last three rows. South Korea correlations are above the diagonal, and Mean, SD, and reliabilities are the last three columns. For Japan correlations, correlations above |.19|, $p < .05$; above |.25|, $p < .01$. For South Korea correlations, correlations above |.17|, $p < .01$

distributive justice increased as the outcomes received by one and a similar other both increased from low to high. Thus, Hypothesis 2b was supported.

East Asia Differences in the Social Comparison Effects

Hypothesis 3 predicted that the curvilinear relationship predicted by Hypothesis 1 would be stronger for employees from China and Korea than employees from Japan, such that the placement of the bend in the curvilinear relationship is farther from the point of outcome equivalence for employees from China and Korea relative to employees from Japan. Hierarchical regression analyses revealed a significant country difference for job security ($\Delta R^2 = .04$, $p < .01$). The effects of social comparison on fairness in job security were significantly different between Japanese employees and employees from China and Korea (i.e., ($F(5, 365) = 5.05$, $p < .01$; ($F(5, 365) = 4.56$, $p < .01$, respectively), as shown in Table 4. Specifically, when their job security relative to those received by a referent other was higher, and the discrepancy increased, Japanese perceived unfairness in job security, as shown in Fig. 2b (i.e., a downward curvature along $O = -S$ line). However, among Chinese and Koreans, fairness in job security had a linear relationship with the job security the self and a referent other receives. That is, they perceived fairness even when their job security relative to those received by a referent other was higher, and the discrepancy increased, as shown in Fig. 2a and 2c (i.e., a linear surface along $O = -S$ line).

For fairness in pay, there was no overall significant cross-cultural difference ($\Delta R^2 = .02$, ns). However, as predicted, the effects of social comparison on fairness in pay differed significantly between Japanese and Chinese and between Japanese and Koreans (i.e., $F(5, 365) = 2.61$, $p < .05$; $F(5, 365) = 2.50$, $p < .05$, respectively), as shown in Table 4. Specifically, as can be seen in Fig. 3b along the $O = -S$ line, fairness in pay had a curvilinear relationship with the pay the self and a referent other receives among Japanese. That is, the Japanese perceived unfairness when they received more pay than what a referent other received. The Chinese also perceived unfairness when they received more pay than what a referent other received, but its effect was weaker than Japanese. On the other hand, for Koreans, fairness in pay had a linear relationship with the pay the self and a referent other receives along the $O = -S$ line, shown in Fig. 3c. These results suggest that the Japanese, compared to the Chinese and Koreans, are more likely to perceive unfairness when they receive more pay than what a referent other receives. However, for fairness in promotion opportunity, there was no overall significant cross-cultural difference ($\Delta R^2 = .02$, ns) nor significant difference between the Japanese and others in the social comparison effects (i.e., ($F(5, 365) = 1.68$, ns; ($F(5, 365) = .61$, ns, respectively), as shown in the column 'country differences' of Table 4. Thus, Hypothesis 3 was supported for fairness in pay and job security but not for fairness in promotion opportunity.

Finally, we tested whether materialism significantly explains the Japan–China and the Japan–Korea differences in the social comparison effects associated with pay and job security. As expected, the Chinese were more materialistic than the Japanese (Means = 5.02 vs. 4.04, $p < .01$), whereas no difference was observed between Koreans and Japanese (Means = 4.24 vs. 4.04, ns). Materialism significantly moderated the relationship between social comparison and fairness for pay and job security ($\Delta R^2 = .03$, $p < .01$; $\Delta R^2 = .02$, $p < .05$, respectively). In addition, the moderated path analytic procedures show that the Japan–China difference in the social comparison effects were significantly mediated by materialism for fairness in pay and job security ($-.363$ [$-.694$, $-.101$], $p < .01$; $-.221$ [$-.392$, $-.067$], $p < .05$, respectively). Thus, Hypothesis 4 was supported for only the Japan–China differences in the social comparison effects associated with pay and job security.

Discussion

Our findings provide several implications to justice literature. First, social comparisons had a significant curvilinear relationship with distributive justice. Specifically, distributive justice increased as the self's outcomes increased toward what a referent other received, continued to increase as the self's outcomes exceeded what a referent other received, and decreased when the excess became extreme. These results suggest that employees perceive unfairness about organizational outcomes when they receive better outcomes as well as worse outcomes than what a referent other receives. In addition, distributive justice significantly increased as the outcomes that the self and a referent other received both increased. This finding contributes to justice literature by directly testing whether justice is achieved by giving the same outcome to those who are similar (e.g., Adams 1965; Chen et al. 2002). It would be worthy to examine how the industry standard (a different comparison other) can influence distributive justice when both the self's and other's outcomes are low. In addition, our study is the first to empirically examine how social comparisons relate to distributive justice using the social comparison process, which reveals the joint effects of similarities and differences in the outcomes of the self and a referent other. This approach can be applied to other comparison standards such as needs and past experiences (Rice et al. 1985), and can increase our understanding of

Table 3 Results for the social comparison effects on distributive justice and slopes along lines of interest

Dependent variables	Results for the polynomial regression after controlling age, sex, tenure, and industry						$O = S$		$O = -S$	
	S	O	S^2	SO	O^2	R^2	$b_1 + b_2$	$b_3 + b_4 + b_5$	$b_1 - b_2$	$b_3 - b_4 + b_5$
Fairness in pay	.64**	.10	−.03	.19**	−.20**	.46**	.74**	−.03	.55**	−.42**
Fairness in promotion opportunity	.62**	−.03	−.03	.05	−.04	.39**	.58**	−.02	.65**	−.12
Fairness in job security	.55**	.10	−.09**	.15**	−.05	.42**	.65**	.01	.45*	−.29*

$N = 393$. Unstandardized regression coefficients were used. S and O represent the outcomes of the self and the a similar other. Columns labeled $b_1 + b_2$ and $b_3 + b_4 + b_5$ represent the slope of each surface along the $O = S$ line, and columns labeled

$b_1 - b_2$ and $b_3 - b_4 + b_5$ represent the slope of each surface along the $O = -S$ line (b_1, b_2, b_3, b_4, and b_5 are the coefficients on S, O, S^2, SO, O^2, respectively)

* $p < .05$

** $p < .01$

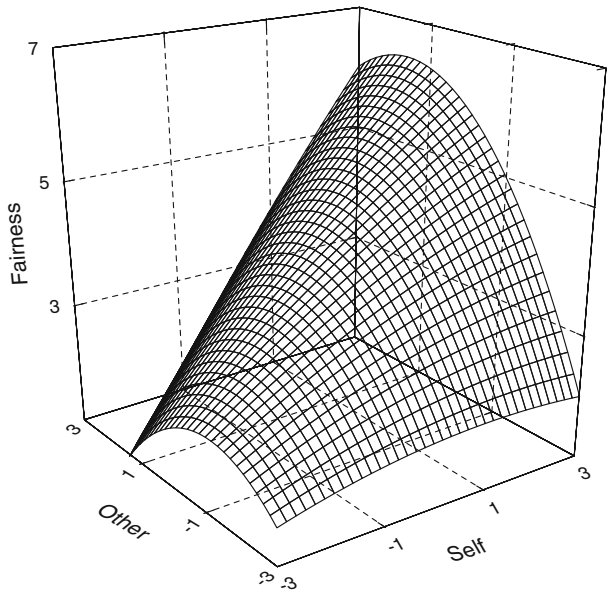

Fig. 1 Estimated surfaces relating pay fairness to pay the self and others receive

the underlying psychological processes by which people make distributive justice.

Second, distributive justice significantly increased as the outcomes that one and a similar other received both increased. Our result suggests that when employees believe that they and a similar other both receive poor rewards from their organizations, they perceive the poor-outcome distribution as being unfair. This finding contributes to justice literature by directly testing whether justice is achieved by giving the same outcome to those who are similar (e.g., Adams 1965; Chen et al. 2002) using a polynomial regression analysis. It would be worthy to examine how the industry standard (a different comparison other) can influence distributive justice when both the self's and other's outcomes are low.

Notwithstanding the general linkage between social comparison and distributive justice, perhaps the most important implication of our findings is that the social comparison effects can vary among East Asians. For example, the Japanese perceived unfairness when they received better pay and job security than what a referent other received, whereas the Chinese and Koreans did not perceive it as unfair. These results contribute to justice research by showing that the effects of social comparison on distributive justice can vary due to contextual factors such as country (Kruglanski and Mayseless 1990). They also extend to cross-cultural justice literature by showing how cultures relate to the underlying psychological processes by which people form distributive justice using a consistent approach for all forms of distributive justice. Moreover, our findings are consistent with others research indicating differences among East Asians in their cognitive, attitudinal, and behavioral patterns (Kim and Leung 2007; Kim et al. 2010). The present study thus adds to the scant few that have begun calling for management scholars to recognize in their theories and empirical designs the need for cultural nuances among (not just between) various cultural groups.

It is also noteworthy that the country differences in forming distributive fairness in pay and job security are to some extent explained by materialism. Specifically, materialism significantly explains the Japan–China differences in the effects of social comparison on fairness in pay and job security. These results provide a good starting point for future studies to reveal country differences in social comparison effects associated with justice judgments. Although these results need cautious interpretation because the reliability of materialism is relatively low (i.e., Cronbach's $\alpha = .61$), they provide a good starting point for future studies to reveal the country differences in social comparison effects associated with justice judgments. Future research should consider other variables that can reveal

Table 4 Country differences in the social comparison effects

	Results after controlling age, sex, tenure, and industry						Shape along $O = -S$ line		Country differences[c]
	S	O	S^2	SO	O^2	R^2	$b_1 - b_2$	$b_3 - b_4 + b_5^{ab}$	
Fairness in pay									
C	.64**	.14	.03	.13	−.22**	.47**	.50*	−.32*	J versus C, $F(5, 365) = 2.61$*
J	.41*	.39	−.25**	.48**	−.28*	.48**	.02	−1.00**	J versus K, $F(5, 365) = 2.50$*
K	1.00**	−.27*	.10	.15	−.26**	.57**	1.27**	−.30	
Fairness in promotion opportunity									
C	.73**	−.15	.04	−.11	.09	.39**	.88**	.24	J versus C, $F(5, 365) = 1.68$
J	.69**	−.26	−.11	.04	−.03	.42**	.95**	−.18	J versus K, $F(5, 365) = .61$
K	.78**	−.06	−.01	.21*	−.21*	.53**	.85**	−.43**	
Fairness in job security									
C	.67**	−.01	−.05	−.02	.06	.41**	.67*	.03	J versus C, $F(5, 365) = 5.05$**
J	.35**	.23	−.22**	.30**	−.18*	.42**	.12	−.70**	J versus K, $F(5, 365) = 4.56$**
K	.89**	−.19	.09*	.03	−.06	.57**	1.07**	.01	

$N = 393$; China (C) = 144, Japan (J) = 104, and South Korea (K) = 145

[a] Columns labeled $b_1 - b_2$ and $b_3 - b_4 + b_5$ represent the slope of each surface along the $O = -S$ line

[b] b_1, b_2, b_3, b_4, and b_5 are the coefficients on S, O, S^2, SO, O^2, respectively

[c] Betas for b_1, b_2, b_3, b_4, and b_5 were compared between two countries. Denominator $df = 5$, numerator $df = 375$

* $p < .05$

** $p < .01$

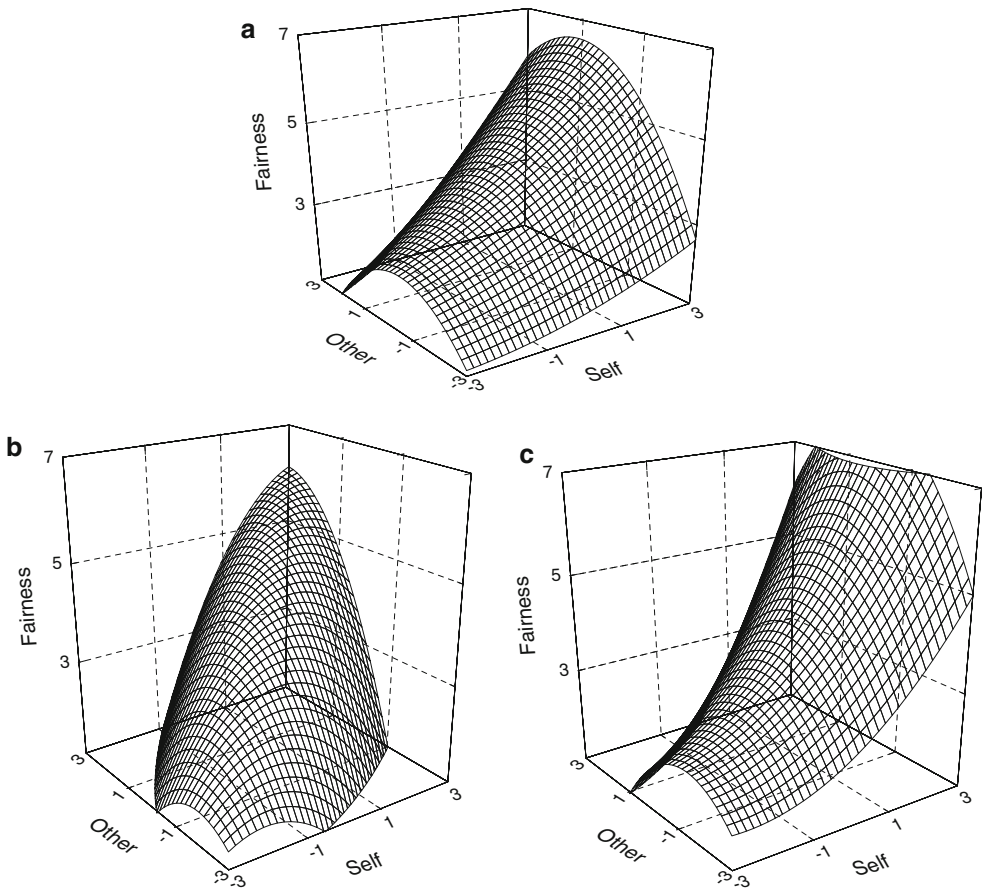

Fig. 2 Estimated surfaces relating the pay which the self and others receive to fairness in pay across countries. **a** China. **b** Japan. **c** South Korea

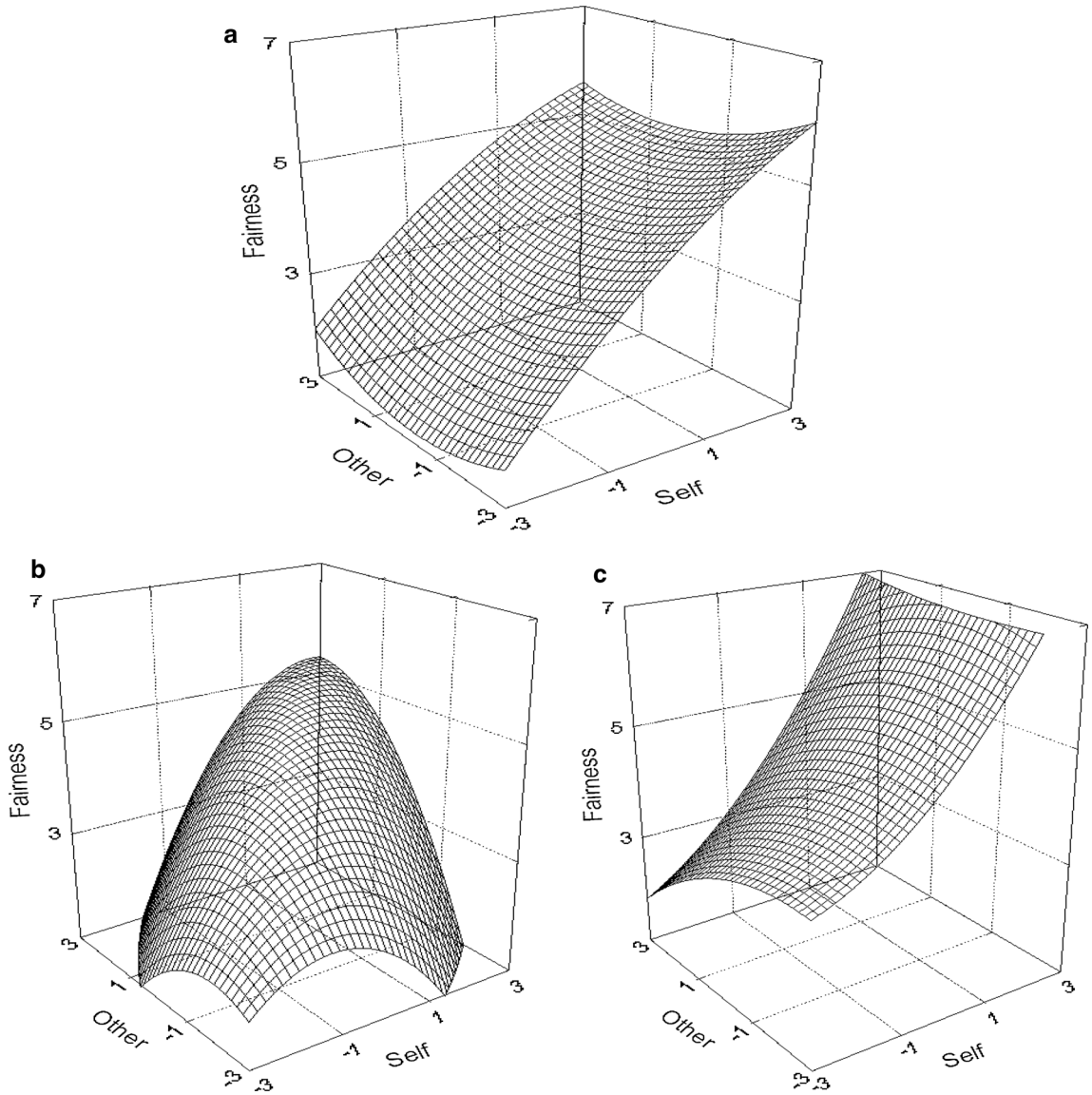

Fig. 3 Estimated surfaces relating the job security which the self and others receive to fairness in job security across countries. **a** China. **b** Japan. **c** South Korea

what explains country differences. For example, in Japan, more than China and Korea, companies emphasize "wa" (i.e., group loyalty, harmony, and consensus, Alston 1989). Since *wa* values mutually beneficial relationships and co-existence among group members, more outcomes than others with the same inputs can be perceived as unfair to Japanese.

Although some of the cross-cultural differences occurred as expected, there was no significant difference in the effects of social comparison on fairness in promotion opportunity. It is plausible that promotion may provide socioemotional outcomes such as higher status and pride as well as materialistic values (cf., Lind and Tyler 1988), and may affect people's justice judgments differently depending on whether promotion is perceived to be socioemotional or material outcomes. However, in this study design, we could not distinguish whether the respondents perceive promotion opportunity as being socioemotional or material outcomes. Future research should confirm this effect and further explore whether promotion can be perceived as socioemotional or material outcomes differently across countries.

How might these implications benefit management scholars and managers interested in enhancing ethical behavior in the workplace? Answering this empirically is a need in future research. However, our findings offer a starting point due to the fact that unethical behavior, such as stealing, has been linked to employees' perceptions of unfairness (Greenberg 1993). Consistent with this and

more broadly, justice researchers have found that when employees perceive distributive injustice (i.e., unfair outcome-allocations), they are more likely to engage in justice-restoring actions including a reduction of inputs (e.g., a choice to work less hard, withdraw from the workplace, or behave counterproductively, Colquitt et al. 2001). As such, increased unethical behaviors on the part of employees who perceive unfairness is likely. This is why it behooves ethics scholars, whose aim among other things is to accurately predict and explain when more ethical behaviors will occur in organizations, to understand antecedents to distributive justice, such as those illuminated by our findings.

Our findings also offer three practical implications. First, managers are likely to enhance perceptions of distributive justice, hence potentially also more ethical behavior, when they treat all employees more rather than less positively in terms of valued outcome-allocations (rewards), when they similarly reward employees who are similar to each other or, when this is not appropriate, when they transparently explain why employees' outcome-allocations differ. Second, our findings suggest that it may behoove managers to recognize that the value of materialism helps to explain employees' reactions to the level of outcome-allocations they see themselves and others receiving (or not receiving) in the workplace. Third, our findings suggest that managers need to *avoid* assuming that employees who are "Asian" (as opposed to "Western) will react similarly to outcome-allocation events—helped by recognizing as a starting point that East Asians do make social comparisons among each other (as all people do), and East Asians—at least those in Japan, Korea, and China as studied here—differ from each other in the value they place on materialism.

Limitations and Future Research

This study has several limitations that should be noted. First, all data were self-reported and collected at a single point in time, raising questions about inflated inter-item correlations due to the common method variance. However, common method variance is unlikely to generate nonlinear relationships that form the core of our results (Evans 1985; Siemsen et al. 2010). Nonetheless, it would be useful to corroborate the findings of this study by using temporal separation of measurement (i.e., a longitudinal design study).

Second, although this study focused on a referent other that has been most frequently used in cross-cultural justice research, comparison others could vary in their salience and effect on perceived fairness (Leung et al. 2001). For example, people could choose more favorable referents for ego-protection in social comparison associated with justice judgments (Kulik and Ambrose 1992). Thus, future research needs to build a more comprehensive model that examines how various types of comparison referents affect distributive justice differently within or across countries.

In addition, there are several limitations regarding the characteristics of the data used in this study. For instance, respondents may not be fully aware of the responsibilities, education, and experiences of a referent other. Although subjective perceptions of a referent other are important in the social comparison associated with justice judgments (Chen et al. 2002), future research needs to validate the current findings in the comparison with others whose inputs are actually similar to those of a focal person or by measuring and statistically controlling the perceived contributions of the self and the other. Our findings also suffer from the limitation of convenience sampling which resulted in samples for each country that were not identically matched in participant-qualities. For example, 30 percent of the Korean sample was female as compared to the average of 47 percent of Chinese sample. However, demographic explanations for observed cross-cultural differences are unlikely given that we statistically controlled for demographic variables when testing hypotheses. Nevertheless, there is need to interpret our conclusions about country differences with caution. Additionally, we note that the practical challenges associated with obtaining cross-cultural data is why cross-cultural research is dominated by convenience sampling (Bhagat and McQuaid 1982; Yeganeh et al. 2004), and that there is need for further research on the relationships found in our data to be conducted in a manner enabling greater experimental control. Finally, our study may not have sufficient statistical power to detect significant results (e.g., materialism was not a significant mediator to account for the differences between Japanese and Koreans although the pattern is consistent with expectation). The sample size for each country is one the low side given that complex regression analyses were conducted. Another plausible reason for the null finding is that the reliability of materialism is marginal.

Future research could benefit from examining other variables that can moderate the social comparison effects associated with distributive justice such as equity sensitivity, the difference preferences for under versus over-reward equity (Huseman et al. 1987). Future research can also attain more incisive evidence concerning the cognitive processes underlying the bend in the curve and cultural differences therein by following up this study with an experiment that manipulates the features of the referent other. Given the tendency for employees who perceive less justice to behave less ethically (McCain et al. 2010), increased understanding about social comparison-related dynamics that influence distributive justice may improve prediction and explanations regarding when and why (un)ethical behaviors occur in organizations.

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