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Understanding the link between communication satisfaction, perceived justice and organizational citizenship behavior

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ABSTRACT

This study broadens the application of the justice and OCB concepts beyond pay and job satisfaction to capture previously uninvestigated effects by examining the link between communication satisfaction (CS), perceived justice, and organizational citizenship behaviors (OCB) among Chinese employees. We predict perceived justice will mediate the relationship between CS and OCB. We also predict CS will mediate the relationship between perceived justice and OCB. Quantitative analyses were used to analyze the relationships. FsQCA was used as an additional technique to test the mediating effect. Results show that OCB were influenced by CS and perceived justice. CS is a mediator between perceived justice and OCB. Perceived justice is not a mediator between CS and OCB. The finding points to the need for enhancing communication practices and creating a fair working environment in order to encourage discretionary behaviors. Theoretical and practical implications are discussed along with the limitations.

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1. Introduction

Although communication satisfaction (CS) and organizational citizenship behaviors (OCB) are essential foci to management and communication scholars and practitioners (e.g., Organ, Podsakoff, & Mackenzie, 2006; Podsakoff, MacKenzie, Paine, & Bachrach, 2000), the relationship between these two multidimensional constructs remains unclear. Unlike leader–member exchange which focuses on the exchange between employees and their supervisor (Yukl, 2006), CS refers to the degree to which employees perceive satisfaction in information and work relationships amid the total communication environment (Modaff et al., 2008; Redding, 1978). Satisfaction with organizational communication enables organizational effectiveness (Pincus, 1986), and it is a significant predictor of outcomes, including job performance (Goris, 2007) and OCB (Kandlousi, Ali, & Abdollahi, 2010). OCB, a behavior that goes beyond prescribed job duties (e.g., Organ et al., 2006; Wong et al., 2006), is also essential for organizations to be effective and accomplish its goals (Bolino & Turnley, 2003).

Despite the diverse studies associated with OCB (e.g., Cohen-Charash & Spector, 2001; Fassina, Jones, & Uggerslev, 2008; Zhang & Agarwal, 2009), a review of the literature suggests that researchers investigating the organizational processes leading to OCB may have ignored a crucial antecedent, namely the satisfaction of employees with their organizational communication practices. To date, few scholars have examined the

linkage between CS and OCB (Kandlousi et al., 2010). Thus, the association between the two constructs remains an unexplored area in the organizational behavior literature, and the relationship between the constructs remains unclear.

It is also unquestionable that communication and fair treatment accounts significantly in predicting employees' behavior and performance (e.g., Berger, Roloff & Roskos-Ewoldsen, 2009). However, there is no empirical evidence confirming a positive relationship between CS and perceptions of justice. Is satisfaction with organizational communication positively linked to the various dimensions of justice perceptions? To our knowledge, only one research examined CS, interactional justice and OCB in a university setting (Fournier, 2008). While the findings require validation, we still know little about the influence of CS on distributive justice and procedural justice. Building on earlier studies indicating that dissatisfied employees are less likely to participate in OCB (Organ, 1990), we argue that it is possible that perceptions of justice might mediate the link between CS and OCB. Surprisingly, the literature does not bring forth any empirical evidence regarding the mediating effect of perceived justice in the CS–OCB model, or the mediating effect of CS in the perceived justice–OCB model.

Given the lack of empirical research in the literature that highlights the importance of communication contributing to employee decisions to engage in extra-role behavior, this study aims to empirically explore the underlying linkages among CS, perceived justice (i.e. distributive justice, procedural justice, and interactional justice), and OCB. Specifically, we assessed how satisfaction of organizational communication affects Chinese employees' discretionary behaviors and their perceptions

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of justice. We also examine the impact of perceived justice on employees' CS-OCB relations, and the impact of CS on employees' perceived justice-OCB relations. We attempt to reexamine the relationship between CS and OCB using fsQCA, because the amount of evidence on HR practices from non-Western countries is limited (Zhang & Agarwal, 2009).

This study contributes to the literature in several ways. First, the study broadens the application of justice and OCB concepts to capture previously uninvestigated effects. The findings enhance our comprehension of the antecedents of OCB and work-related outcomes that are crucial for organizational success. Second, this is the first study to investigate the mediating effect of CS in the justice-OCB relationship. Besides revealing empirical evidence on the importance and impact of CS necessary to understand the employees' attitudes and behavior, the results may provide scholars and practitioners with a deeper understanding of employees' behavior. The study adds to the communication and justice literature by demonstrating how CS affects OCB. Thus, practitioners/managers can gain insights to make better decisions concerning communication practices in the organization. Third, by exploring the influence of the different types of justice as antecedents and mediators, managers can effectively gain valuable insights to enhance the communication systems within the organization and devise strategies to affect certain perceptions of injustice, in order to gain more positive attitudes and behaviors; while the employees can focus on the instrumental dimensions of communication to facilitate mutual understanding and improve working relationships and their work environment.

2. Literature review

2.1. Communication satisfaction and organizational citizenship behavior

Communication practices in the organization are antecedents of communication satisfaction (Carrière, Bourque, & Bonaccio, 2007). Since the availability and adequacy of work-related information are often out of employees' control, when the sources of communication adequately fulfill the information needs of employees at work, it is likely that they will perceive satisfaction with communication. CS refers to the degree to which employees perceive satisfaction in information and work relationships amid the total communication environment (Modaff et al., 2008; Redding, 1978). CS is a multidimensional construct (Downs & Hazen, 1977). Down and Hazen (1977) proposed eight dimensions of CS. *Communication climate* refers to how one assesses communication at both the personal and organizational levels in areas of competency in communication, information flows, and the effect of communication in the work process on employees' attitudes, such as motivation and employee identification. Relationship with the supervisor, or *supervisory communication*, refers to the upward and downward communication with supervisors, such as the supervisor's guidance, openness in communication, ability to pay attention, and perceived trust of the employee. *Organizational integration* refers to the information employees receive about the immediate work environment, such as information about departmental plans, job requirements, and personnel news. *Media quality* concerns the clarity and efficacy of written directives such as company memos and publications, as well as the quantity and quality of communication (e.g., meetings) in the organization. *Horizontal or coworker communication* refers to the activities and the accuracy of information in informal communication networks in the organization. *Corporate information* refers to information concerning the corporation as a whole, such as company performance, goals, and external happenings which affect the organization. *Personal feedback* refers to the adequacy in providing employees with information on their performance appraisals and how they are being judged in some formalized settings, or information that should be expected to be passed from supervisor to subordinates. Finally, *subordinate communication* covers both upward and downward communication, and looks into the extent

to which subordinates respond to communication and how employees initiate upward communication.

Existing literature shows that when employees are satisfied with communication, effective work relationships can be built between the supervisors, subordinates and peers. Empirical evidence has proved the positive effects of CS on indicators of organizational effectiveness such as productivity, job performance, organizational commitment, job satisfaction and citizenship behavior (Downs & Hazen, 1977; Moideenkutty et al., 2006; Pettit, Goris, & Vaught, 1997). Satisfaction with organizational communication can reduce conflict, improve overall satisfaction and trust (Chio, Hsieh, & Yang, 2004), and promote positive justice perceptions among employees (Gupta & Kumar, 2009). Studies on specific dimensions of CS such as personal feedback, relationship with the supervisor and communication climate showed these dimensions to be highly related with job satisfaction (Downs & Hazen, 1977).

OCB is a salient concept in human resource management practice. It has received substantial attention in organizational behavioral studies (Podsakoff et al., 2000) and ample OCB research has focused on identifying the antecedents of OCB (Podsakoff et al., 2000). OCB is a behavior that goes beyond prescribed job duties dictated by organizational policy and job description (Wong et al., 2006), and is not formally rewarded (Organ et al., 2006). There are five dimensions of OCB, namely civic virtue, sportsmanship, courtesy, conscientiousness, and altruism (Organ, 1988). Specifically, civic virtue signifies responsible political involvement; sportsmanship signifies willingness to disregard minor inconveniences that arise in the workplace; courtesy signifies the behaviors aimed at prevention of problems encountered with coworkers; conscientiousness signifies the behaviors that go beyond minimal requirements, and general compliance with rules; while altruism signifies the helping or cooperating behaviors with other colleagues. While some researchers have started to investigate the OCB dimensions separately (e.g., Brennan & Skarlicki, 2004), in this study we adopt the global OCB construct.

Social exchange is an important motivator for OCB (Podsakoff et al., 2000). When employees experience satisfaction in communication at work, their satisfaction is likely to be expressed by engaging in extra-role behavior (Bolino & Turnley, 2003). The quality of working relationships and trust with their supervisor (and organization) will be promoted, which implies that employees may perceive greater levels of justice (Niehoff & Moorman, 1993). With a fair working environment, employees are more inclined to form close working relationships, become motivated and perform in ways which benefit the individuals and organizations by reciprocation (Cropanzano & Mitchell, 2005; Karriker & Williams, 2009; Zapata-Phelan et al., 2009).

The relationships of OCB with indicators of organizational performance and effectiveness, such as satisfaction, enhanced productivity, effective coordination across work groups, and creating social capital, have been demonstrated (e.g., Organ et al., 2006; Podsakoff et al., 2000). Although numerous researchers have found an association between an employee's overall job satisfaction and OCB in various settings, to our knowledge only two studies report a strong relationship between CS and OCB. At present, empirical work regarding CS is nonexistent in the Chinese context when CS is an indicator of job satisfaction. Would Chinese employees who are satisfied with organizational communication reciprocate by demonstrating acts of citizenship?

In a study involving supervisor-subordinate dyads among Indian pharmaceutical sales representatives, CS has a strong relationship to OCB (Moideenkutty et al., 2006). Kandlousi et al. (2010) also proposed that CS could significantly predict OCB in the manufacturing industry in Iran. Based on earlier work, the first hypothesis was stated as:

H1. *Employees' satisfaction with communication has a positive impact on OCB.*

2.2. Communication satisfaction and organizational justice

Organizational justice signifies the way employees see fairness at the workplace (Greenberg & Colquitt, 2005). Previous research has highlighted perceived justice as a significant predictor of employee attitudinal reactions (e.g., pay, commitment, and trust) and behavioral reactions (e.g., OCB, turnover, withdrawal) (Beugré, 1998; Cohen-Charash & Spector, 2001; Karriker & Williams, 2009). Organizational justice is beneficial to organizations in the long run in the sense that it can foster positive employee behaviors and work attitudes (Cohen-Charash & Spector, 2001).

Perceived justice encompasses three widely accepted distinct dimensions (Cohen-Charash & Spector, 2001): DJ, PJ, and IJ (Niehoff & Moorman, 1993). DJ emphasizes fairness in outcome allocations including benefits, promotions, and office assignment (Karriker & Williams, 2009). PJ emphasizes the impartiality of the process (policies, procedures and criteria) by which results are determined (Cohen-Charash & Spector, 2001; Lind & Tyler, 1988); while IJ relates to “the human side of organizational practices” (Cohen-Charash & Spector, 2001). Researchers have categorized IJ into two commonly accepted aspects: informational justice and interpersonal justice (Colquitt et al., 2001; Lind & Tyler, 1988). The informational aspect refers to the sharing of adequate information on procedures to employees, and explaining the rationale of outcome distribution and of decisions on procedures, accuracy and timeliness; while the interpersonal aspect concerns treatment of employees with courtesy, dignity and respect by authorities in the process (Colquitt et al., 2001; Karriker & Williams, 2009). Individuals who perceive interactional injustice are expected to be unhappy with the immediate superior instead of the organization (Cohen-Charash & Spector, 2001). Despite volumes of justice research, most has mainly focused on pay, leading to calls for studies to investigate variables other than pay (Greenberg, 1980). Few focus on CS.

Accurate and adequate information is essential in formulating fair procedures to determine allocation decisions (Niehoff & Moorman, 1993). Fair procedure can be an instrument used to deliver the message that employees are valued by the group (Niehoff & Moorman, 1993). Available literature suggests that communication and organizational justice have significant influence on the attitudes and behaviors of employees, respectively (Fournier, 2008; Kandlousi, et al. 2010). For example, Shaw et al. (2003) showed that explanations and their adequacy have strong impacts on DJ and PJ. Moideenkutty et al. (2006) also demonstrated that satisfaction with supervisory communication is significantly linked to perceptions of DJ and PJ while IJ is an important constituent of the dyadic relationship between supervisors and employees. In Kernan and Hanges' (2002) study, communication quality predicts interpersonal fairness. Since satisfaction with communication can promote positive justice perceptions among employees (Gupta & Kumar, 2009), the hypothesis for the relationship between CS and the three types of justices was stated as:

H2. *Employees' satisfaction with communication is positively linked to their perceptions of (a) DJ, (b) PJ, and (c) IJ.*

2.3. Perceived justice and OCB

Perceived justice is one of the key predictors of OCB (Organ, 1988). Adams' (1965) equity theory and Blau's (1964) social exchange theory can provide the basis for explaining the linkage between OCB and justice (Moorman 1991). The equity theory postulates that individuals try to alter their efforts (input) to resolve the stress created by inequity (Adams, 1965). The response to equity or inequity would be in altering OCB (Organ, 1988). Social exchange is necessary for OCB (Organ, 1990), and performing OCB can be considered as a kind of reciprocation in

exchange relationships (Moorman, 1991). Since social exchange falls outside the formal contracts, and social rewards are sometimes unable to be measured or exchanged equally, similar resources are likely to be exchanged in reciprocation (Foa & Foa, 1980). The resource captured in the exchange is the value of OCB delivered through discretionary acts (Moorman, 1991).

According to the literature, employees who sense fair treatment tend to participate in OCB (e.g., Wong et al., 2006). When employees value themselves as members in a group, fair procedures can act as a channel to communicate how the group values its members. Employees may also support the group's welfare by means of OCB (Lind & Tyler, 1988; Niehoff & Moorman, 1993). Individuals experiencing inequity would withdraw their OCB or restrict their effort to satisfy only the contractual obligations (Fassina et al., 2008). Several studies have confirmed the positive influence of perceived justice on OCB. OCB can be predicted by DJ and PJ (Cohen-Charash & Spector, 2001), and is positively related to fair interpersonal treatment by supervisors (Colquitt et al., 2001; Karriker & Williams, 2009). Since employees are more inclined to perform in ways which benefit themselves and their organizations by reciprocation in a fair working environment (e.g., Cropanzano & Mitchell, 2005; Karriker & Williams, 2009; Zapata-Phelan et al., 2009), the relationship between OCB and perceived justice was hypothesized as follows:

H3. *Employees' perceived (a) DJ, (b) PJ, and (c) IJ have a positive effect on OCB.*

2.4. Perceived justice and CS as mediator

The relationships among the constructs of CS, justice and OCB proposed earlier provide a rational basis for postulating perceived justice as a mediator to CS and OCB, and for CS to act as mediator to perceived justice and OCB. When employees experience satisfaction in communication, the quality of working relationships, trust, reliance and disclosure will be promoted (Lam, et al., 2013). Since exhibiting acts of citizenship—such as helping colleagues voluntarily at work, acting ethically, and communicating with coworkers to improve performance (Konovsky & Pugh, 1994; Niehoff & Moorman, 1993)—is performed at the employees' discretion (Lam et al., 2013), when they perceive unfair treatment, the employee may feel that the “extra effort” may be wasted. On the other hand, employees who perceive fair treatment may not perceive that their “extra effort” as wasted. Thus, we expect CS to enhance perception of justice, which consequently promotes OCB. In other words, when employees' information requirements are met by accurate and adequate sources of communication, whether they are motivated to perform citizenship behaviors depends on their perceived justice.

Since employees make their fairness judgments based on their beliefs of how the systems in the organization “should” operate (Karriker & Williams, 2009), it is possible that when perception of justice is low, employees would rely on the communication they receive before they decide to invest in discretionary effort. Several authors have noted that a large part of organization injustice is related to interpersonal treatment (e.g., Loi et al., 2009), such as whether one is treated with dignity and respect and has timely and accurate information for their work. It is expected that employees' daily experience of communication encounters, and their observations of treatment received by their fellow colleagues, influence whether or not to contribute the extra effort. Thus, the next two hypotheses were stated as:

H4. *Employees' perceived (a) DJ, (b) PJ, and (c) IJ mediate a positive association between CS and OCB.*

H5. *Employees' CS mediates a positive association between (a) DJ, (b) PJ, and (c) IJ and OCB.*

3. Methodology

3.1. Measurement instrument

A questionnaire consisting of four parts was designed for this research. Part I consisted of 38 items developed by Downs and Hazen (1977). These Communication Satisfaction Questionnaire (CSQ) items were applied to measure CS. All eight dimensions except subordinate communication, which could only be responded to by supervisors, were used. The question “The grapevine is active in our organization” was also excluded because even English-speaking respondents were confused about the meaning of the question (Mount & Back, 1999). The reliabilities for the eight dimensions ranged from 0.72 to 0.96, and the alpha for the whole instrument was 0.94, indicating consistently high reliability (Downs & Hazen, 1977). A sample question is “My supervisor offers guidance for solving job-related problems.”

Part II consisted of 17 items developed by Moorman (1991), and Niehoff and Moorman (1993) applied to measure DJ (five items), PJ (six items), and IJ (six items). The reliabilities for DJ and PJ were 0.74 and 0.85 respectively (Niehoff & Moorman, 1993), while the reliability for IJ was 0.93 (Moorman, 1991). Sample questions include: “I consider my work load to be quite fair”; and “My supervisor showed concern for my rights as an employee.”

Part III consisted of 22 items advanced by Podsakoff et al. (1990) used to measure respondents' OCB. The five subscales of OCB had high internal consistency reliabilities, with Cronbach's alpha ranging from 0.70 to 0.85. A sample statement is “I willingly help others who have work-related problems.”

Part IV asked the respondents' demographic information including sex, age, education, department, and tenure. All the items in Part I, II and III were assessed using a 7-point Likert scale: 1 = *Strongly Disagree/Dissatisfied*, and 7 = *Strongly Agree/Satisfied*. Two open-ended questions were placed at the end of Part I and Part III to gather input/suggestions on how to improve communication, enhance job satisfaction and productivity, and to invite comments regarding respondents' job, work environment, supervisor, company policies, or ideas to improve the work environment.

3.2. Translation and pilot study

As most respondents were Chinese employees, the questionnaire was translated into Chinese from the original English version where appropriate. The CS questions were adapted from Tsai and Lee (1998), the perceived justice questions were adapted from Lin (2004), and the OCB questions were from Hsiao (2005). Two senior employees with high Chinese proficiency were provided with a full version of the questionnaire and consulted on the readability and translation of the scale, before the pilot study involving 84 respondents using snowball sampling was conducted. Respondents completed the questionnaire at their workplace, during their break time. The average time to complete the survey was between 15 and 20 min. Based on the feedback from the pilot test, the layout of the questionnaire was revised slightly and improved to be more reader-friendly. The scale reliability was also tested. The Cronbach's alpha for CS, perceived justice and OCB was 0.962, 0.956, and 0.883 respectively, indicating that the measurement instruments were reliable for the intended use.

3.3. Sample

The respondents were employees working in major organizations in Macau. Out of 560 questionnaires sent out, 456 questionnaires were returned. However, 162 questionnaires were discarded due to excessive missing fields or serious central tendency bias issue. The response rate was 81.4% and the valid response rate was 52.5%.

The respondents received a package comprising a bilingual questionnaire and a return envelope. The cover page of the questionnaire

introduced the study, cover confidentiality and anonymity clause, and instructions to complete the survey. The English version of the questionnaire was printed on one side while the Chinese version was printed on the other side. Respondents were free to complete the questionnaire either in English or in Chinese, and were instructed to seal the envelope after inserting their completed questionnaire in the envelope.

3.4. Data analysis

The analysis was divided into two parts: quantitative analysis and qualitative comparative analysis (QCA). The results were first analyzed using the SPSS version 17.0 software. The reliability of all constructs was assessed. Descriptive statistics, correlations between variables, and regression analyses were conducted. The mediating effect was analyzed using Baron and Kenny's (1986) three-step regression approach.

To supplement the SPSS analysis, the QCA was applied using the fs/QCA software (available from www.u.arizona.edu/~cragin/fsQCA/software.shtml) to test the models that predict high scores in the outcome condition. QCA is a research methodology in the social sciences which uses a set-theoretic approach and applies Boolean algebra to determine configurations leading to specific outcomes of interest (Fiss, 2007; Ragin, 2000). Based on a set-theoretic principle, QCA examines variables as set-subset memberships instead of correlation. Compared to traditional quantitative tools, fsQCA can identify integrative effects of multiple independent variables and multiple pathways to the same outcome (Ragin, 2008). The scale values of all the study variables were transformed into fuzzy set membership before further analysis.

3.5. Evaluation of common method bias

In this study, all measures were collected from the same source in a single questionnaire. According to Podsakoff et al. (2003), a dominant single factor would appear from the factor analysis if common method bias was present. In this regard, Harman's one-factor analysis was carried out to diagnose whether common method biases exist. The results revealed 16 factors with eigenvalues above 1.0, explaining 69.20% of the variance in total, and the largest single factor explained 30.33% of the variance. Thus, there is no serious common method bias problem.

4. Results

4.1. Descriptive statistics

A majority of the respondents were female (59.9%), full-time employees (86.7%), from the 18–25 year-old age group (54.4%), have an undergraduate level education (64.3%), and were junior staff (65.6%). About two-thirds of the respondents were working in operational/front line jobs (64.3%).

The Cronbach's alpha values for all constructs ranged from 0.878 to 0.954, indicating that the internal consistencies were high and acceptable. Specifically, the reliability scores for CS, DJ, PJ, IJ, and OCB were 0.954, 0.878, 0.905, 0.907 and 0.878 respectively.

4.2. Hypothesis testing

Hypothesis 1 proposed that CS is positively related to OCB. The regression analysis showed that CS has a significant positive impact on OCB ($B = 0.379$, $p < 0.01$), explaining 23.8% of the variance in OCB. Thus, **Hypothesis 1** was supported.

Hypothesis H2a, H2b, and H2c proposed that CS is positively linked to DJ, PJ and IJ respectively. The results in Table 1 show the three hypotheses were supported. CS was strongest in predicting IJ ($B = 1.03$, $p < 0.01$), explaining 51.9% of the variance in IJ. No collinearity problems were found.

Hypothesis H3a, H3b, and H3c predicted the positive effect of DJ, PJ and IJ on OCB. The results in Table 2 show the three hypotheses were

Table 1
Regression results – communication satisfaction and three types of perceived justice.

Model	DJ		PJ		IJ	
	1	2	1	2	1	2
Control variables						
Gender	-0.207	-0.200	-0.058	-0.050	-0.066	-0.058
Age	0.286 ^b	0.132	0.127	-0.045	0.169 ^a	-0.010
Edu.	0.035	0.079	-0.044	0.006	-0.049	0.003
Position	0.027	0.069	-0.006	0.040	0.068	0.116
Job type	0.136	-0.175	0.530 ^b	0.181	0.507 ^b	0.146
E. status	0.141	-0.088	0.165	-0.092	0.241	-0.025
Tenure	-0.207 ^b	-0.028	-0.243 ^b	-0.041	-0.203 ^b	0.006
Hypothesized variables						
CS	-	0.886 ^b	-	0.995 ^b	-	1.03 ^b
Df	7/286	1/285	7/286	1/285	7/286	1/285
F	2.81 ^b	24.596 ^b	5.585 ^b	51.243 ^b	4.161 ^b	40.537 ^b
Adj. R ²	0.041	0.392	0.099	0.578	0.070	0.519
Δ in R ²	0.064	0.344	0.120	0.470	0.092	0.440

Edu. = Education; E. status = Employment status; CS = Communication satisfaction; OJ = Organizational justice; DJ = Distributive justice; PJ = Procedural justice; IJ = Interactional justice.

^a Significant at the 0.05 level.
^b Significant at the 0.01 level.

supported. DJ was the strongest predictor for OCB ($B = 0.190, p < 0.01$). Although DJ, PJ and IJ were statistically significant in predicting OCB, they only account for a small percentage in the variance of OCB (R^2 ranging from 0.077 to 0.096). No collinearity problems were found.

Hypothesis 4 proposed that the justice dimensions mediate a positive association between CS and OCB; while **Hypothesis 5** proposed that CS mediates a positive association between the justice dimensions (DJ, PJ, and IJ) and OCB. To test the mediation, the three-step approach proposed by **Baron and Kenny (1986)** was conducted. The results in **Table 3** show the coefficient for CS decreasing when the justice dimension was added to the regression; no single type of justice was found to be significant. Thus, **Hypothesis 4** was not supported. In other words, DJ, PJ and IJ did not mediate the link between CS and OCB. The results in **Table 4** show the coefficient for justice dimensions became insignificant when CS was added to the regression; CS turned out to be significant. Thus, **Hypothesis 5** was supported. In other words, CS mediates the link between perceived justice dimensions (DJ, PD, and IJ) and OCB.

Table 2
Regression results – three types of perceived justice and OCB.

Model	OCB					
	1	2	1	2	1	2
Control variables						
Gender	0.222 ^b	0.262 ^b	0.222 ^b	0.233 ^b	0.222 ^b	0.234 ^b
Age	0.139 ^b	0.085	0.139 ^b	0.116 ^a	0.139 ^b	0.110 ^a
Education	0.025	0.019	0.025	0.033	0.025	0.034
Position	-0.053	-0.058	-0.053	-0.052	-0.053	-0.065
Job type	0.162	0.137	0.162	0.066	0.162	0.073
Emp. status	0.228	0.202	0.228	0.198	0.228	0.186
Tenure	-0.004	0.035	-0.004	0.040	-0.004	0.031
Hypothesized variables						
DJ	-	0.190 ^b	-	-	-	-
PJ	-	-	-	0.183 ^b	-	-
IJ	-	-	-	-	-	0.176 ^b
Df	7/286	1/285	7/286	1/285	7/286	1/285
F	3.549 ^b	7.585 ^b	3.549 ^b	6.619 ^b	3.549 ^b	7.001 ^b
Adj. R ²	0.057	0.152	0.057	0.133	0.057	0.141
Δ in R ²	0.080	0.096	0.080	0.077	0.080	0.084

OJ = Organizational justice; DJ = Distributive justice; PJ = Procedural justice; IJ = Interactional justice.

^a Correlation is significant at 0.05.
^b Correlation is significant at 0.01.

4.3. Causal recipes for OCB

Fuzzy set QCA analysis can provide complex solutions for the conditions for all factors that contribute to the outcome. In the analysis, the consistency implies the significance of a solution; while the coverage indicates the strength of how each complex causal recipe shows the variables that predicted high scores in the outcome condition (dependent variable). The consistency threshold for this study was set at 0.80. **Table 5** shows CS, IJ, together with procedural injustice and distributional injustice, can account for around 89% of the OCB in our sample (total coverage 0.94). The consistencies for CS, IJ, procedural injustice and distributional injustice are 0.98, 0.96, 0.92 and 0.91, respectively, and the coverage is 0.76, 0.69, 0.64 and 0.65 respectively. In general, more employees tend to perform OCB when they perceive CS (consistency = 0.98, coverage 0.75) and IJ (consistency = 0.96 and coverage = 0.69). These results suggest that CS and IJ are necessary conditions for OCB.

Tables 6a, 6b, and 6c show the alternative models in which CS, perceived justice (DJ, PJ, IJ) and demographic variables are important antecedents leading to high OCB scores. The coverage for each justice solution decreases significantly as compared to the coverage in **Table 5**. For example, when considering the influence of DJ alone, the most important causal recipe to explain OCB is CS (consistency = 0.98; coverage = 0.76; see **Table 6a**). Similarly, CS is the most important causal recipe to explain the influence of PJ on OCB (consistency = 0.98; coverage = 0.76; see **Table 6b**) and of IJ on OCB (consistency = 0.98; coverage = 0.76; see **Table 6c**). It should be noted that the respective justice dimension is the second most important causal recipe for OCB—suggesting the importance of justice perceptions over the individual or combined demographic recipes.

Fig. 1A, B and C show the XY plot for the causal condition with CS, justice dimensions, OCB, and demographics added to the analysis (to test the effect of demographic variables); all cases fell into the upper triangle, showing full consistency in the sufficient solution. The results suggest that the configurations are sufficient but not necessary in predicting OCB among employees. In sum, this means that CS and the justice dimensions, together with demographic variables, are factors which cause OCB behaviors among the Chinese employees. Overall, although the coverage was small, the solution suggests that demographic variables can act as antecedents of OCB, while CS is the key condition for OCB.

5. Discussion and conclusion

5.1. Discussion

The objective of this study was to explore the impact of CS on three justice dimensions and the relationship to OCB in the Chinese context. The justice dimensions positively affect OCB, but do not mediate the relations between CS and OCB. However, CS fully mediates the relations between the justice dimensions and OCB. Based on the results, the findings are reviewed and discussed accordingly.

5.2. Impact of CS on OCB and perceived justice

In this study, CS positively affects OCB. This finding is similar to that of **Kandlousi et al. (2010)**, who reported that the organizational dimension of communication (corporate information, communication climate and media quality) was the strongest predictor of OCB. CS accounted for 23.8% of the variance in OCB. In reference to the social exchange theory, when individuals are satisfied with their job through communication, they achieve higher quality in-group interactions and tend to reciprocate through unspecified returns which are likely to be expressed in OCB (e.g., **Berger et al., 2009**). Moreover, CS can contribute to positive attitudes among employees (**Kandlousi et al., 2010**).

DJ, PJ, and IJ are major predictors of OCB. DJ was comparatively stronger in relation to OCB than PJ and IJ. Moreover, CS positively affects

Table 3
Test results for the mediating effects of three types of perceived justice.

Step	Dependent variable	Independent variable	B	t	Z
1	Distributive justice	Communication satisfaction	0.874	13.547 ^b	
	Procedural justice	Communication satisfaction	1.026	19.918 ^b	
	Interactional justice	Communication satisfaction	1.047	17.915 ^b	
2	OCB	Communication satisfaction	0.36	8.343 ^b	
		Communication satisfaction	3.26	5.828 ^b	
3	OCB	Distributive justice	0.046	1.148	1.126
		Communication satisfaction	0.436	6.470 ^b	
		Procedural justice	−0.068	−1.357	
		Communication satisfaction	0.383	6.003 ^b	
		Interactional justice	−0.015	−0.350	
					5.261

^b Significant at the 0.01 level.

the three justice dimensions, as hypothesized. Employees' CS was strongest in predicting IJ, while DJ was the strongest predictor among the justice dimensions in predicting OCB. This finding is unsurprising since accurate information is essential in making fair decisions, and employees are more likely to perceive fair reward allocations if their supervisor gathers information about their work (Niehoff & Moorman, 1993). Communicating accurate information and transparent policies to employees also enables them to be more focused on their work. Moreover, IJ is salient for Chinese employees irrespective of the organizations they work in (Wong et al., 2006). PJ and IJ are also critical in the justice–OCB relationship. Given that CS explained 52% of variance in IJ, management may want to foster closer interpersonal relationships between superiors and subordinates, and make decision-making more transparent. By giving employees unbiased treatment—whether interactional, procedural or distributional—managers can encourage the development of a higher quality of relationship with their subordinates, which can lead to discretionary behaviors that benefit the managers and the organization as a whole. As Karriker and Williams (2009) suggest, “the ramifications for overall productivity and performance are impressive” when the organization's shared values, beliefs, philosophy, and behaviors are characterized by excellent superior–subordinate relationships. In this regard, training programs in interpersonal relationship skills, effective supervision, and effective appraisal management skills may be beneficial for aggressive supervisors who lack human relations skills. Nevertheless, managers should not deemphasize the importance of DJ.

5.3. Mediating effect of perceived justice and CS

Perceived justice was statistically inactive as a mediator in the quantitative analysis. The QCA analysis, however, identified all three types of

Table 4
Test results for the mediating effect of communication satisfaction.

Step	Dependent variable	Independent variable	B	t	Z
1	Communication satisfaction	Distributive justice	0.442	13.547 ^b	
	Communication satisfaction	Procedural justice	0.562	19.918 ^b	
	Communication satisfaction	Interactional justice	0.500	17.915 ^b	
2	OCB	Distributive justice	0.224	6.123 ^b	
		Procedural justice	0.442	13.547 ^b	
		Interactional justice	0.562	19.918 ^b	
3	OCB	Distributive justice	0.046	1.148	7.066 ^b
		Communication satisfaction	3.26	5.828 ^b	
		Procedural justice	−0.068	−1.357	
		Communication satisfaction	0.436	6.470 ^b	
		Interactional justice	−0.015	−0.350	
		Communication satisfaction	0.383	6.003 ^b	

^b Significant at the 0.01 level.

justice to be necessary conditions among causal recipes that predict high scores in OCB. The overall solution coverage (93.9%) and solution consistency (89.2%) were high in the results; suggesting that the analyses explain a large portion of OCB among employees. In other words, the three justice dimensions should not be neglected, after considering the relationship between CS and OCB. The QCA results also reveal the alternative models in which CS, different types of justice/injustice, and demographic variables are important antecedents leading to high OCB scores. Moreover, the QCA results reveal additional recipes (e.g., combinations of demographic variables) that could account for OCB in the workplace. The alternative recipes could help to explain why perceived justice is not a mediator between CS and OCB. The results of the QCA analysis suggest that the inclusion of perceived justice is a sufficient solution but not a necessary condition for OCB, indicating that variables other than perceived justice affect the relationship.

CS fully mediates the relations between the three justice dimensions and OCB. Since different aspects of justice may affect different discretionary behaviors, and since the social exchange theory indicates that employees with a positive relationship with an organization will tend to act in beneficial ways towards the organization and others in the organization (Cropanzano & Mitchell, 2005), it is important for management to treat the employees equitably by not setting unfair deadlines, or have poor allocation of work or resources. Moreover, making decisions that affect the employees' lives without consultation (e.g., changing work shifts, relocation) might be viewed by employees as disrespectful treatment.

With the increasing use of imported labor in Macau, effective managerial communication with a diverse group of employees poses more challenge; it is harder to analyze and to adapt messages to employee needs strategically (Berger et al., 2009). All these factors could inhibit the employees' OCB. Hence, rather than using a dictatorial style of management, managers should consider more respectful treatment by

Table 5
QCA output - Solution for OCB with Communication Satisfaction and three types of perceived justice.

```

--- COMPLEX SOLUTION ---
frequency cutoff: 2.000000
consistency cutoff: 0.951619

          raw          unique
          coverage      coverage      consistency
-----
~pj      0.636551      0.025243      0.914801
~dj      0.644966      0.022550      0.912516
cs       0.758679      0.027839      0.977936
ij       0.688817      0.022021      0.959352
solution coverage: 0.938792
solution consistency: 0.892245
    
```

cs = Communication satisfaction; dj = Distributive justice; pj = Procedural justice; ij = Interactional justice.

Table 6a

QCA output - solution for OCB with communication satisfaction, distributive justice and demographic variables.

```

--- PARSIMONIOUS SOLUTION ---
frequency cutoff: 1.000000
consistency cutoff: 0.958454

      raw      unique
      coverage coverage consistency
-----
~tenure      0.593711    0.006924    0.872650
~education   0.364746    0.006828    0.933088
cs           0.758679    0.008943    0.977936
dj           0.680786    0.008847    0.963197
position*~jobtype 0.325031    0.000000    0.782861
position*~gender 0.548178    0.000000    0.763272
gender*~jobtype 0.117944    0.001923    0.721471
~position*gender 0.107222    0.000000    0.930330
~gender*jobtype 0.362968    0.007308    0.718952
~position*jobtype 0.143716    0.000000    0.935524
solution coverage: 0.969132
solution consistency: 0.765863
    
```

cs = Communication satisfaction; dj = Distributive justice.

giving clear, precise instructions and feedback; including employees in the decision-making process; demonstrating they truly care for their employees by allowing time off to have high-quality interactions/social exchange; giving them a voice in various ways, before implementing new procedures or ways of doing things; and being tolerant of cultural differences, to minimize employees' job stressors leading to undesirable organizational consequences. As Beugré (1998) indicated, process control provides people with the opportunity to influence their outcomes. Furthermore, gestures by management—to allow employees to provide input into the decision-making process, even when the outcome is not to their advantage (Thibaut & Walker, 1975)—can change perceptions of what may otherwise be seen as unfair and non-transparent, thus encouraging employees to exhibit extra-role behaviors and offer cooperative contributions.

Our findings also suggest that a fair working environment alone is not sufficient for employees to form meaningful working relationships or be motivated to invest in extra-role behaviors. Since satisfaction with communication can impact employees' attitudes and behaviors, management and practitioners should place more attention on the overall organizational communication rather than rely on immediate managers to act as organizational messengers; and they should foster a positive workplace to encourage discretionary behaviors. By exploring the mediating effect of perceived justice on the association between CS and OCB, and the mediating effect of CS on the association between the justice dimensions and OCB, this study extends the understanding of the

Table 6b

QCA output - solution for OCB with communication satisfaction, procedural justice and demographic variables.

```

--- PARSIMONIOUS SOLUTION ---
frequency cutoff: 1.000000
consistency cutoff: 0.955217

      raw      unique
      coverage coverage consistency
-----
position      0.884124    0.028993    0.755464
gender        0.386191    0.005674    0.680678
jobtype       0.631214    0.016924    0.694603
cs           0.758679    0.005481    0.977936
pj           0.692326    0.000962    0.964563
solution coverage: 0.991201
solution consistency: 0.719496
    
```

cs = Communication satisfaction; pj = Procedural justice.

Table 6c

QCA output - solution for OCB with communication satisfaction, interactional justice and demographic variables.

```

--- PARSIMONIOUS SOLUTION ---
frequency cutoff: 1.000000
consistency cutoff: 0.960185

      raw      unique
      coverage coverage consistency
-----
~tenure      0.593711    0.007885    0.872650
~education   0.364746    0.006731    0.933088
ij           0.688817    0.007693    0.959352
age          0.241225    0.005433    0.955619
position*~gender 0.548178    0.049909    0.763272
~position*jobtype 0.143716    0.010434    0.935524
~empstatus   0.137273    0.002741    0.732051
cs           0.758679    0.007356    0.977936
solution coverage: 0.955140
solution consistency: 0.790018
    
```

cs = Communication satisfaction; pj = Procedural justice.

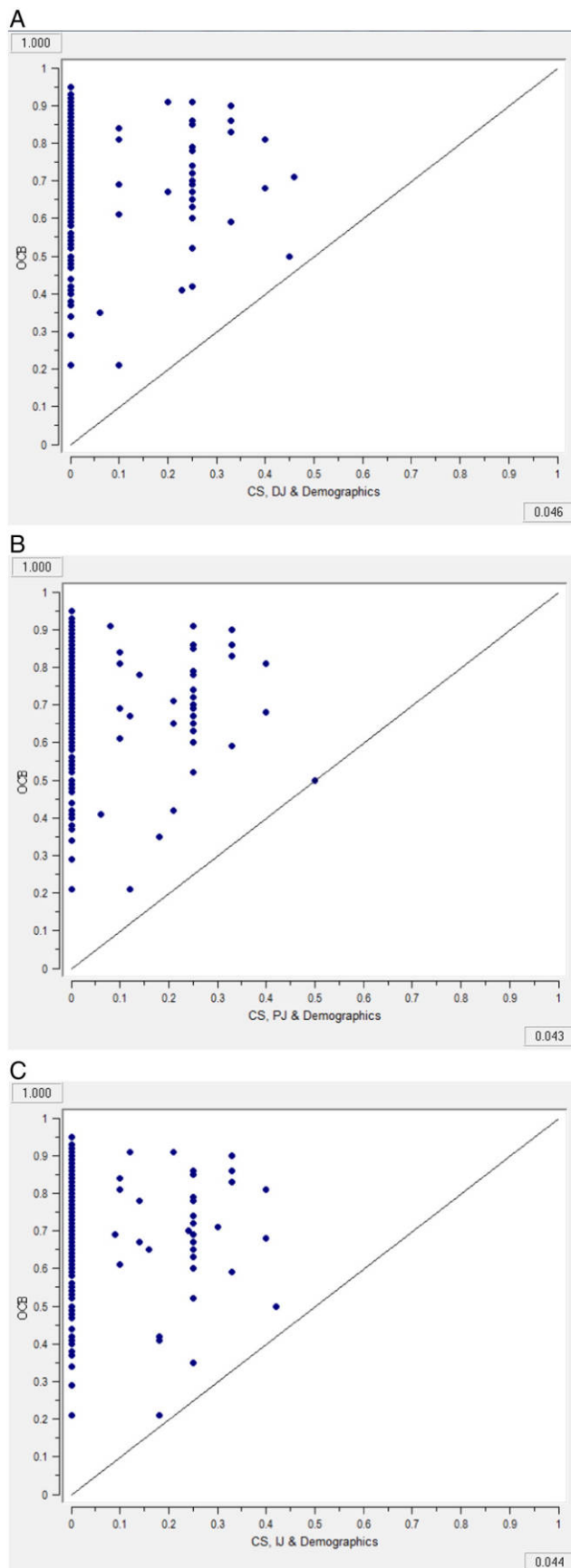
role that communication and perceived justice play in the Chinese context. Overall, the results indicate that Chinese employees perceive CS as a significant factor in how they view justice within their organization and their performance at work, which includes their participation in citizenship behavior.

5.4. Implications

CS mediated the relations between the various justice dimensions and OCB. Given that this is the first study to report the mediating effect of CS between the justice dimensions and OCB, the findings offer several important implications for research and practice. While the findings warrant further validation and collaboration, we also encourage future researchers to use CS rather than leader-member exchange, since it is the “total communication environment” that influences employees' attitudes, which consequently affect other individual and organizational outcomes. Future research should also examine CS in greater depth to determine the mediating effect of the various CS dimensions in relations to OCB.

On the practical side, respondents who reported dissatisfaction with organizational communication commented on “sudden change in policies where they were not notified”; provided various suggestions for improvement in the reward/promotion system; noted the lack of transparency in implementing policies; wrote, “Even though management acknowledged the issues that employees voiced, there were usually no corresponding responses or attempts to address these concerns or problems”; and indicated the need for management to “spend less time speaking and more time listening”. They also perceived that usually their voices were not heard by management or supervisors. While these responses are consistent with Wan's (2010) observation, the frequent changes in policies can leave employees at loose ends. Hence, it would be beneficial if employees are updated in a timely manner so that they can make necessary adjustments. Management and supervisors could reconsider ways to cultivate better communication practices, such as setting up regular meetings, providing an anonymous mailbox for employees to voice concerns and offer feedback, and developing more flexible and practical policies that fit the actual requirements of the operations for various departments.

Since effective and efficient management of internal communication can reduce the uncertainty perceived by employees, managers and supervisors should take concrete measures to enhance CS (e.g., providing timely information) and promote justice in order to enhance the various justice perceptions and encourage extra-role behavior. Some suggestions to promote justice perceptions from Greenberg and Colquitt (2005) include (1) taking steps to ensure that work



schedules and responsibilities are allocated equitably among staff, and that employees are paid in accordance to the market rate; (2) involve their staff in the decision-making process, and promote opportunities to the staff to voice their concerns through regular meetings, employee surveys and employee suggestion schemes; (3) execute procedures in an accurate and consistent manner, provide unbiased treatment to employees, and communicate negative decisions in a respectful manner with adequate explanations; (4) implement an open communication and management style, and disclose the decisions made publicly whenever possible or made available to employees who need to know them, instead of being kept secret; and (5) provide training to managers on procedural and interactional justice in order to facilitate a fair working environment.

5.5. Limitations and suggestions for future research

The following limitations may limit the generalizability of the findings. First, data was collected through snowball sampling and cluster sampling. An obvious drawback of the snowball sampling method is that the general population may not be well represented, as the more selective group of participants may share similar interests and values based on their interrelationships (VanderStoep & Johnson, 2008). Despite the challenges in selection of the sample, control over the representativeness, and risks in sampling errors, the methods used in this study were timely and less expensive, and helpful in reaching employees working in different organizations. Second, OCB was measured on a self-rated scale, which may be prone to bias (Karriker & Williams, 2009), such as the tendency for participants to over-report behaviors that are believed to be socially desirable and vice versa (Donaldson & Grant-Vallone, 2002). Third, few supervisors were willing to participate in the study. Thus, one dimension of CS, subordinate communication, was omitted. By not involving supervisor–employee dyads in the study, the objectivity of the supervisor was also omitted. Moreover, the mean scores for CS and PJ were within the middle ranges, which might have affected the hypotheses being tested. Finally, due to resource and time constraints, the survey was done in a one-off process.

Based on the limitations, further research is needed to fill in the gaps brought about by the limitations. While employees' turnover may present some difficulties for longitudinal studies, future researchers should continue to assess the CS construct, pay more attention to the interactions of the various dimensions of communication with OCB, use the complete CSQ scale, and include the participation of supervisors in the survey. Their participation may give different results from the present study. Given the continuing interest in OCB and justice and the numerous studies on its antecedents and consequences, the scarce attention to the CS aspect also highlights the need for filling this gap in the literature. Specifically, future research may benefit from adopting alternative research methodologies, such as mixed methods including qualitative and quantitative, so as to develop a more complete appreciation of employee attitudes and behaviors. In addition, the use of a panel study with a questionnaire designed that involves pairs of peers and supervisors may minimize the impact of biases such as common rater effects including consistency motif and social desirability; it may be advantageous as well to collect data at different points in time, and to obtain measures of the predictor and criterion variables from different sources (Podsakoff et al., 2003). In other words, future researchers need to fully understand the context where data is to be collected and carefully design the study. Moreover, given the increasingly diverse work environment, a potential variable to be included in the model could be culture (e.g., using dimensions of masculinity, uncertainty avoidance, power distance, individualism, and long-term orientation)—a scope not limited to

Fig. 1. A. XY plot for the OCB Recipe with communication satisfaction, distributive justice and demographics B. XY plot for the OCB Recipe with communication satisfaction, procedural justice and demographics C. XY plot for the OCB Recipe with communication satisfaction, interactional justice and demographics.

communication, but also considered in relation to employees' attitudes and behavior.

6. Conclusion

This study broadens the application of the justice and OCB concepts beyond pay and job satisfaction to capture previously uninvestigated effects. The findings reveal the significance and impact of CS in order to understand employees' perceptions of justice and OCB. Both CS and perceptions of justice are variables which can be practically controlled and influenced by supervisors and management. Since OCB is discretionary, the valuable insights gleaned from the findings can be useful in guiding management to make more effort to enhance communication strategies and create a fair working environment, in order to encourage positive attitudes and behaviors, manage and retain employees, and make better decisions regarding communication and dissemination of information within the organization. This approach is critical particularly at times of manpower shortages, when employees may be required to perform more than their designated workload and responsibilities.

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