

Extending the job demands-resources model with *guanxi* exchange

Extending the
JD-R model

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Received 5 April 2013
Revised 14 August 2013
20 April 2014
12 October 2014
20 November 2014
Accepted 26 November 2014

Abstract

Purpose – The purpose of this paper is to differentiate between two types of job resources (i.e. task resources and social resources) and extends the job demands-resources (JD-R) model with a typically Chinese form of social exchange – *guanxi* exchange – to increase its applicability in the Chinese context.

Design/methodology/approach – Multigroup structural equation analysis was used to test the hypotheses in two cross-sectional Chinese samples of 463 police officers and 261 nurses.

Findings – Results supported the distinction between social resources and task resources. Social resources were positively related to engagement and organizational commitment (for police officers), task resources were positively related to engagement (for both nurses and police officers), organizational commitment (for police officers), and negatively to burnout (for police officers). *Guanxi* exchange with supervisors was positively associated with social resources (for both nurses and police officers), task resources (for nurses), and organizational commitment (for police officers). Moreover, *guanxi* exchange was positively related with work engagement in both nurses and police officers. Unexpectedly, *guanxi* exchange was positively related with burnout in police officers.

Research limitations/implications – Due to its cross-sectional design, longitudinal replication of the findings is desirable in order to establish causality.

Practical implications – The effects of informal interpersonal relations (i.e. *guanxi* exchange) on employees' well-being and organizational commitment should be acknowledged, especially when developing strategies to reduce burnout and increase work engagement.

Originality/value – For the first time, task resources and social resources are distinguished and a Chinese traditional concept (*guanxi* exchange) is integrated into the JD-R model.

Keywords Social resources, Job demands-resources model, *Guanxi* exchange, Task resources

Paper type Research paper

Introduction

The job demands-resources (JD-R) model (Demerouti *et al.*, 2001) has gained considerable popularity in occupational health psychology. The model posits that the characteristics of a job can be classified as either job demands or job resources, and that these are the antecedents of employee burnout and engagement. Job demands have been defined as those physical, social, or organizational aspects that require sustained physical or mental effort and are therefore associated with burnout and ill health. Job resources have been defined as those task and social job characteristics that support the employee in coping successfully with job demands, attaining work goals, and achieving personal growth and development (Schaufeli and Bakker, 2004). Excess job demands and lacking job resources exert an energy-draining effect on employees through a stress process which may lead to burnout, while high levels of job resources are related to positive outcomes such as work engagement and



organizational commitment through a motivational process. Although it has been suggested that there are different kinds of job demands (LePine *et al.*, 2005), a similar differentiation among various types of job resources has not yet been made. Therefore, the first aim of this paper is to distinguish between task-related resources and social resources (i.e. work-related interpersonal interactions). The second aim is to include a typically Chinese form of social exchange between employees and supervisors (*guanxi* exchange) in the JD-R model in order to increase its relevance to the Chinese work context.

Task resources and social resources in the JD-R model

Studies using the JD-R model typically examine the indirect links between job characteristics and work outcomes, via well-being. A high-resources job offers employees challenge and opportunities to cope successfully with job demands. Consequently, employees experience relatively little stress and feel engaged. This type of job fosters personal growth and development, leading to positive work outcomes such as high-organizational commitment (Schaufeli and Taris, 2014). However, many scholars voiced concerns that learning and growth do not happen solely as a function of task resources, arguing that this occurs in a social context. They suggested that personal learning and growth occur through social interaction with co-workers, while talking about work and observing others doing their work (Wenger, 1998). Hence, scholars have recognized that both task and social resources are positively related to employee well-being. For example, Ouweneel *et al.* (2009) found that levels of job control among health care managers were not high enough to counteract the negative effects of job demands on learning, whereas additional supervisor support affected managers' on-the-job informal learning positively.

Accumulating evidence suggests that task resources (e.g. job control, participation in decision making) as well as social resources (supervisor and co-worker support) are indirectly related to positive work outcomes (e.g. organizational commitment) through work engagement (Schaufeli and Taris, 2014). The JD-R model assumes that these aggregated job (i.e. task and social) resources can be represented as a single composite dimension. Studies using the JD-R model thus usually combine different and quite heterogeneous job resources into one job resources factor. However, it has been argued that task and social resources are theoretically and conceptually distinct (e.g. Weigl *et al.*, 2010): whereas task resources refer to the individual-level work context, social resources refer to interpersonal interactions and interdependencies that are related to the group-level work context. Task resources are therefore embedded in social resources.

The current study included two core task resources (job control and participation in decision making) and two core social resources (social support from colleagues and from the supervisor). Based on the above reasoning, we expect a model in which two types of job resources are distinguished (i.e. task resources (job control and participation in decision) vs social resources (supervisor support and colleague support)) to fit better to the data than a model with a single composite resources factor (*H1*):

H1. Task resources and social resources can be distinguished.

Guanxi exchange in the JD-R model

So far the JD-R model has mainly been applied in Western countries (e.g. Australia, the Netherlands, and Spain), and, if applied to non-Western samples, it was studied in its

original form (e.g. Hu *et al.*, 2011). The second objective of our study is therefore to extend the JD-R with an important, typically Chinese phenomenon – *guanxi* exchange – in order to increase its applicability in the Chinese context.

Jobs are embedded in networks of interpersonal relationships (Brass, 1981). Social resources include the formal work-related interactions at work, but people also interact in more informal ways. For example, people who have friends at work received help about four times more often than others (Argyle and Henderson, 1985). Apparently, the quality and quantity of work-related interactions (i.e. social resources) are to some degree influenced by the quality of informal interpersonal relationships. These interpersonal relationships exist in various forms. In the Chinese context, *guanxi* has been considered a typical product of Confucian values that is inherent in the work ethics of the Chinese people. As “the moral principles regarding interactive behaviors of related parties” (Chen and Chen, 2004, p. 308), *guanxi* embodies a wide range of personal ties and nuanced patterns of interpersonal dynamics. Basically, *guanxi* is constituted by reciprocity, meaning that the behavior of petitioners is governed by the social norm known as *renqing* or “favours.” Providing benefits to somebody in one’s *guanxi* network at a particular time will create a “debt” (i.e. an implicit obligation) to the petitioner, and the petitioner should return the *renqing* (favor) or will else be considered untrustworthy. *Renqing* is the most important aspect of *guanxi* exchange; it emphasizes not only a normative standard for regulating social exchange, but also a social mechanism that individuals can use to strive for desirable resources in hierarchically structured relationships (Hwang, 1987).

Contrary to Western social exchange relations which usually involve the exchange of equivalent value and timely return (Powell, 1990), Chinese *guanxi* exchange involves special favours (e.g. bonuses, promotion, fringe benefits) that go beyond an equal exchange and which can be returned in the long run (Yum, 1988). *Renqing* ensures trust among the members of the *guanxi* network, which tends to minimize the risk of uncertainty (Lovett *et al.*, 1999). *Guanxi* interaction is embedded in intricate and informal personal relationships, and these informal, unofficial relations influence the more formal structures of work-related interaction, by providing opportunities and constraints that characterize organizational life. Management in China is thought to depend largely on interpersonal relationships (Hui and Lin, 1996), and *guanxi* is considered as the basis for effective collaboration (Chen and Chen, 2004). In *guanxi* networks, people exchange more information and resources – not only pertaining to the task at hand, but also to other tasks or with an eye to possible future tasks. Because supervisors have limited time and energy, they can only develop close work relationships with a small number of employees whom they provide with material (e.g. tools, instruments) and immaterial resources (e.g. information, learning) to help them perform better. *Guanxi* exchange is a substitute for competitive disadvantages and employees use *renqing* to deal with resource scarcity and uncertainty. Consequently, employees who have good *guanxi* with their supervisors tend to receive more resources and bonuses, and are more likely to be promoted (Law *et al.*, 2000):

H2. Guanxi reciprocity is positively related to task resources.

H3. Guanxi reciprocity is positively related to social resources.

The presence of a *guanxi* relationship between a supervisor and an employee has been shown to predict preferential treatment of the employee. Employees in high-quality *guanxi* exchange receive more recognition, interpersonal support, and

appreciation, an outcome that is positively endorsed by those whom it benefits and negatively endorsed by those who lose out (Smith *et al.*, 2014):

H4. Guanxi reciprocity is positively related with work engagement.:

H5. Guanxi reciprocity is negatively related with burnout.

Further, *guanxi* emphasizes emotional attachment and obligations, which leads organization members to develop high commitment to the group and its members. The more supervisors and employees develop a high-quality interpersonal relationship and interact with each other (i.e. the better the *guanxi* exchange), the more likely employees are to experience a strong sense of a collective endeavor and group cohesion regarding the organization, in turn promoting their commitment (Molm and Cook, 1995):

H6. Guanxi reciprocity is positively related to organizational commitment.

Method

Sample and procedure

All nurses from a general hospital and all officers from the police force in Yongkang city, China, received paper-and-pencil questionnaires. An accompanying letter introduced the goal of the study and emphasized the confidentiality and anonymity of the participants' answers. The nurse sample included 261 females (response rate 74.5 percent; $M_{\text{age}} = 28.38$ years, $SD = 7.47$). The police officers sample included 401 males and 65 females (response rate 93.2 percent; $M_{\text{age}} = 36.76$, $SD = 9.82$).

Measures

All job characteristics were assessed by the Chinese version of the Questionnaire on the Experience and Evaluation of Work (QEEW) (Van Veldhoven *et al.*, 2002) developed by Hu *et al.* (2011, 2013). These items were scored on seven-point rating scales (0 = "never," 6 = "always").

Three challenge job demands were included in the present study: workload (five items, e.g. "Do you have too much work to do?"), physical load (seven items, e.g. "Does your work require physical strength?"), and mental demands (five items, e.g. "Does your work demand a lot of concentration?").

Job resources included two task resources and two social resources. Task resources were job control (three items, e.g. "Can you decide on your own how your work is executed?") and participation in decision making (six items, e.g. "Do you have a lot of say over what is going on in your work area?"). Social resources were supervisor support (three items, e.g. "Can you count on your direct supervisor when you encounter difficulties in your work?") and colleague support (three items, e.g. "If necessary, can you ask your colleagues for help?").

Burnout was assessed with the exhaustion and cynicism subscales of Hu and Schaufeli's (2011) Chinese version of the Maslach Burnout Inventory – General Survey (Schaufeli *et al.*, 1996). Exhaustion was assessed with five items (e.g. "I feel used up at the end of the workday") and cynicism with four items (e.g. "I have become less enthusiastic about my work") (0 = "never," 6 = "daily"). High scores on the exhaustion and cynicism subscales signify burnout.

Work engagement was assessed with the Chinese version (Hu *et al.*, 2011) of the Utrecht Work Engagement Scale (UWES-9) (Schaufeli *et al.*, 2006). The UWES-9 taps three underlying dimensions with three items each: vigor (e.g. "At my work, I feel

bursting with energy”), dedication (e.g. “My job inspires me”), and absorption (e.g. “I get carried away when I am working”). A similar scoring was used as for burnout (see above).

Organizational commitment (five items, e.g. “I feel like ‘a member of the family’ in my workplace”, 1 = “never,” 5 = “always”) was assessed by a scale from the QEEW (Hu *et al.*, 2011, 2013).

A scale assessing *guanxi* exchange between employee and supervisor was developed based on the exchange of favors (“*renqing*”). Ten statements were derived from in-depth interviews held with Chinese employees. Four items referred to *renqing* investments, and the other six items referred to *renqing* rewards (cf. the list below). Participants used a five-point scale (1 = “strongly disagree”, 5 = “strongly agree”) to rate their agreement with the statements. A confirmatory factor analysis of a correlated two-factor solution with *renqing* investments and *renqing* rewards as latent factors showed acceptable fit among nurses (χ^2 (df = 34) = 35.22, GFI = 0.97, TLI = 1.00, CFI = 1.00, RMSEA = 0.01) and police officers (χ^2 (df = 34) = 150.31, GFI = 0.94, TLI = 0.92, CFI = 0.94, RMSEA = 0.09).

The two *guanxi* exchange scales are as follows:

(1) *Renqing* investment:

- I have to do a favor to my supervisor from time to time to maintain a good *guanxi*;
- I have to spend a lot of time and effort outside of my work to maintain a good *guanxi* with my supervisor;
- I have to express very often my understanding and empathy to my supervisor to maintain a good *guanxi*; and
- I have to offer my supervisor gifts in the expectation that he/she will do me favor when I need it.

(2) *Renqing* rewards:

- I have developed a good *guanxi* with my supervisor whom I can call on for support when I need to get things done;
- I have developed a good *guanxi* with my supervisor which increases my social status in my work team;
- my supervisor will help me with my troubles at work because I have a good *guanxi* with him/her;
- my supervisor provides me with adequate and timely information because I have a good *guanxi* with him/her;
- my supervisor gives me my favorite tasks because I have a good *guanxi* with him/her; and
- my supervisor supports my career because I have a good *guanxi* with him/her.

The hypotheses were tested using structural equation modeling techniques as implemented in the IBM SPSS AMOS 21 (IBM-SPSS Inc., Chicago, IL, USA).

Results

Table I provides the means, standard deviations, reliabilities (Cronbach’s α ’s), and correlation coefficients for the study variables. The reliabilities of most scales – except

Table I.
Means, SDs, internal consistencies and intercorrelations between the study variables

	Police		Nurses																	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i> (722)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Workload	3.87	1.08	3.82	0.96	0.64	0.86-0.78	0.47**	0.31**	0.15*	0.25**	0.08	0.08	0.17**	0.16**	0.05	-0.07	-0.05	0.40**	0.36**	-0.09
2. Mental demands	4.34	1.17	5.07	0.98	-8.91**	0.60**	0.76-0.87	0.39**	0.07	0.10	-0.04	-0.08	0.03	0.01	0.06	-0.03	-0.05	0.23**	0.16*	-0.04
3. Physical demands	2.82	1.07	4.22	1.10	-16.61**	0.41**	0.74-0.88	0.07	0.10	-0.12	-0.12	-0.17**	0.14*	0.12*	-0.14*	-0.22**	-0.25**	0.36**	0.36**	-0.23**
4. Supervisor support	3.37	1.28	3.16	1.14	2.28*	0.25**	0.31**	0.17**	0.87-0.80	0.60**	0.42**	0.34**	0.16*	0.04	0.14*	0.05	0.06	0.05	-0.01	0.02
5. Colleague support	3.56	1.17	3.22	1.11	3.88**	0.31**	0.29**	0.26**	0.68**	0.62-0.84	0.36**	0.36**	0.23**	0.21**	0.23**	0.12	0.12*	0.06	0.04	0.11
6. Job control	2.51	1.30	2.36	1.28	1.51	-0.13**	-0.03	-0.07	0.19**	0.10*	0.81-0.79	0.53**	0.06	0.07	0.11	0.20**	0.21**	-0.15*	-0.17**	0.17**
7. Participation in decision	2.39	1.17	2.49	1.24	-1.06	-0.07	-0.04	-0.08	0.182**	0.12**	0.59**	0.84-0.92	0.19**	0.15*	0.27**	0.29**	0.29**	-0.17**	-0.14*	0.31**
8. <i>Renqing</i> reward	3.12	1.27	2.96	1.33	1.58	0.21**	0.18**	0.16**	0.29**	0.28**	-0.09*	-0.04	0.73-0.78	0.53**	0.27**	0.20**	0.22**	-0.02	0.02	0.12*
9. <i>Renqing</i> investment	2.61	1.25	2.59	1.31	0.20	0.29**	0.19**	0.25**	0.17**	0.20**	-0.12**	-0.06	0.62**	0.66-0.77	0.17**	0.09	0.14*	0.02	0.06	0.21**
10. Vigor	3.08	1.32	2.37	2.13	4.88**	0.13**	0.18**	0.03	0.35**	0.34**	0.08	0.21**	0.23**	0.17**	0.774-0.53	0.58**	0.61**	-0.19**	-0.19**	0.27**
11. Dedication	2.90	1.33	2.10	1.26	8.04**	0.20**	0.24**	0.07	0.36**	0.35*	0.15**	0.22**	0.26**	0.25**	0.84**	0.78-0.86	0.87**	-0.37**	-0.31**	0.47**
12. Absorption	2.82	1.41	2.02	1.27	7.81**	0.10*	0.15**	0.03	0.34**	0.29**	0.06	0.17**	0.20**	0.23**	0.79**	0.84**	0.87-0.86	-0.39**	-0.34**	0.45**
13. Exhaustion	3.02	1.35	3.48	1.25	-4.62**	0.48**	0.32**	0.40**	0.13**	0.21**	-0.20**	-0.23**	0.25**	0.33**	-0.11*	0.00	-0.11*	0.67-0.90	0.86**	-0.30**
14. Cynicism	2.55	1.48	3.05	1.39	-4.54**	0.35**	0.16**	0.30**	0.08	0.12**	-0.27**	-0.29**	0.25**	0.37**	-0.20**	-0.08	-0.12**	0.84**	0.70-0.92	-0.32**
15. Commitment	3.61	1.14	2.96	1.17	7.72**	0.11*	0.15**	0.01	0.33**	0.32**	-0.03	0.17**	0.32**	0.26**	0.56**	0.53**	0.53**	-0.12**	-0.16**	0.69-0.67

Notes: The differences between the mean scores of police officers and nurses on the study variables was tested using *t*-tests with 722 df. *M*, means; *SD*, standard deviations; internal consistencies (Cronbach's α on the diagonal, in italics), and correlations between the study variables for police officers ($n = 463$, lower half) and nurses ($n = 261$, upper half). * $p < 0.05$; ** $p < 0.01$

colleague support (0.62), *renqing* investment (0.66), emotional exhaustion (0.67) and organizational commitment (0.69) in the police officer sample, and vigor (0.53) and organizational commitment (0.67) in the nurse sample – exceeded 0.70. *t*-Tests revealed significant differences between nurses’ and police officers’ scores on several of the study variables, including job demands, social resources, all indicators of well-being, and organizational commitment.

Two separate confirmatory factor analyses using latent indicators showed good fit of the measurement model for both nurses (χ^2 (df = 70) = 153.74, GFI = 0.93, CFI = 0.95, TLI = 0.93, RMSEA = 0.07) and police officers (χ^2 (df = 70) = 293.95, GFI = 0.92, CFI = 0.94, TLI = 0.91, RMSEA = 0.08). All correlations were in the expected direction, except for the correlation between *guanxi* and burnout that was significantly positive among police officers. The standardized parameter estimates are shown in Figure 1.

The presence or absence of common method variance was checked by conducting a multigroup Harman one-factor test. This test models the effect of the method factor at the measurement level. It does not require that the specific factor responsible for the method effect is measured, nor that the effects of the method factor on the measures are equal (cf. Podsakoff *et al.*, 2012). A cross-sample one-factor model was estimated that was assumed to account for the associations among all latent factors. The poor fit of this model

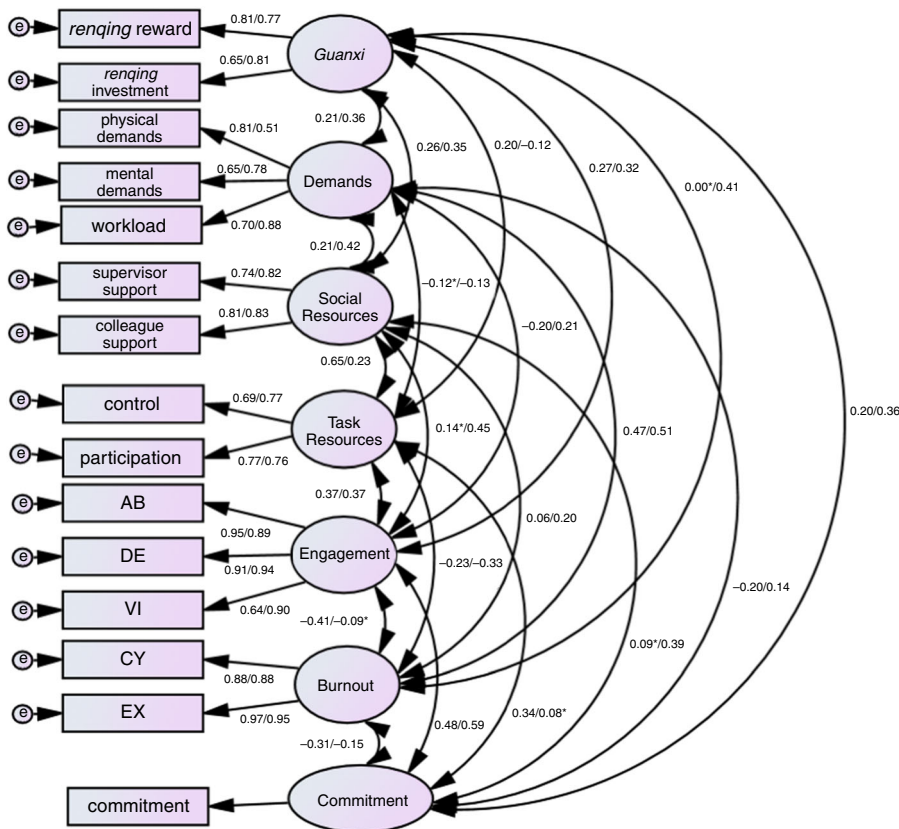


Figure 1. Standardized estimates of the measurement model for 261 nurses (left) and 463 police officers (right), separately

Notes: VI, vigor; AB, absorption; DE, dedication; EX, exhaustion; CY, cynicism. * $p \geq 0.05$

(χ^2 (df = 171) = 1,141.28, GFI = 0.81, CFI = 0.82, TLI = 0.78, RMSEA = 0.09) implied that the associations among the measures were unlikely to be due to common method variance.

Next, model 2 (M_2) that included two types of resources (i.e. task resources and social resources) was tested and compared with the original JD-R model with one undifferentiated latent resources factor (M_1). Multigroup analysis indicated that the fit of M_2 was superior to that of M_1 across both samples; $\Delta\chi^2$ (Δ df = 12) = 480.56, $p < 0.001$ (cf. Table II) ($H1$ confirmed).

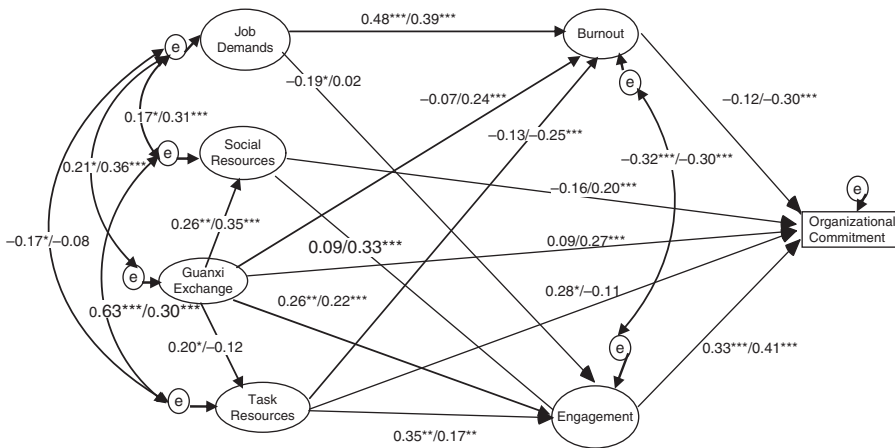
Since empirical studies found engagement and burnout might have part of their variance in common (Halbesleben, 2010). Model (M_3) therefore allowed the residuals of burnout and engagement to correlate, showing a fit that was superior to that of M_2 ($\Delta\chi^2$ (Δ df = 2) = 42.25, $p < 0.001$).

After deleting two non-significant paths (demands→commitment, and social resources→burnout), Model 4 was accepted as the final model (cf. Figure 2). The path linking *guanxi* to social resources was positive and significant among both nurses ($\beta = 0.26, p < 0.01$) and police officers ($\beta = 0.35, p < 0.001$) ($H3$ confirmed). Further, the path linking *guanxi* to task resources was positive and significant among nurses only ($\beta = 0.20, p < 0.05$) ($H2$ partly confirmed). The path coefficient linking *guanxi* to work engagement was positive and significant among both nurses ($\beta = 0.26, p < 0.01$) and police officers ($\beta = 0.22, p < 0.001$) ($H4$ confirmed). The path linking *guanxi* to burnout was only positive and significant among police officers ($\beta = 0.24, p < 0.001$) ($H5$ not supported). Finally, the path linking *guanxi* to organizational commitment was positive and significant among police officers only ($\beta = 0.27, p < 0.001$) ($H6$ partly confirmed).

Model	χ^2	df	CFI	GFI	TLI	RMSEA	$\Delta\chi^2$
Null model	5,595.34	210	–	0.45		0.18	
M_1 (composite resources)	970.49	154	0.85	0.85	0.79	0.09	
M_2 (separated resources)	489.93	142	0.94	0.92	0.90	0.06	$M_1-M_2 = 480.56^{***}$
M_3 (correlated burnout and engagement)	447.68	140	0.94	0.93	0.91	0.06	$M_2-M_3 = 42.25^{***}$
M_4	450.08	144	0.94	0.93	0.92	0.05	$M_4-M_3 = 2.40, ns$
M_5 (regression weights constrained)	514.96	158	0.94	0.92	0.91	0.06	$M_5-M_4 = 64.89^{***}$
M_5 Burnout→Commitment constrained	453.31	145	0.94	0.93	0.92	0.05	$\Delta M = 3.23, ns$
M_5 Engagement→Commitment constrained	451.86	145	0.94	0.93	0.92	0.05	$\Delta M = 1.79, ns$
M_5 Social resources→Commitment constrained	457.77	145	0.94	0.92	0.92	0.06	$\Delta M = 7.69^{**}$
M_5 Task resources→Commitment constrained	459.90	145	0.94	0.92	0.92	0.06	$\Delta M = 9.82^{**}$
M_5 Guanxi→Commitment constrained	452.31	145	0.94	0.93	0.92	0.05	$\Delta M = 2.23, ns$
M_5 Guanxi→Social resources constrained	451.10	145	0.94	0.93	0.92	0.05	$\Delta M = 1.03, ns$
M_5 Guanxi→Task resources constrained	459.56	145	0.94	0.93	0.92	0.05	$\Delta M = 9.49^{**}$
M_5 Demands→Burnout constrained	454.84	145	0.94	0.93	0.92	0.05	$\Delta M = 4.76^*$
M_5 Task resources→Burnout constrained	451.20	145	0.94	0.93	0.92	0.05	$\Delta M = 1.12, ns$
M_5 Social resources→Engagement constrained	456.33	145	0.94	0.92	0.92	0.05	$\Delta M = 6.26^*$
M_5 Task resources→Engagement constrained	452.83	145	0.94	0.93	0.92	0.05	$\Delta M = 2.75, ns$
M_5 Demands→Engagement constrained	454.65	145	0.94	0.93	0.92	0.06	$\Delta M = 4.57^*$
M_5 Guanxi→Burnout constrained	460.32	145	0.94	0.92	0.92	0.05	$\Delta M = 10.24^{**}$
M_5 Guanxi→Engagement constrained	451.17	145	0.94	0.93	0.92	0.05	$\Delta M = 1.09, ns$
M_6 (covariances constrained)	466.82	149	0.94	0.92	0.92	0.05	$M_6-M_4 = 16.63^{**}$
M_6 Burnout↔Engagement constrained	450.78	145	0.94	0.93	0.92	0.05	$\Delta M = 0.71, ns$
M_6 Task resources↔Social resources constrained	451.47	145	0.94	0.93	0.92	0.05	$\Delta M = 1.40, ns$
M_6 Demands↔Social resources constrained	457.30	145	0.94	0.92	0.92	0.06	$\Delta M = 7.21^{**}$
M_6 Demands↔Task resources constrained	450.19	145	0.94	0.93	0.92	0.05	$\Delta M = 0.12, ns$
M_6 Guanxi↔Demands constrained	456.87	145	0.94	0.92	0.92	0.06	$\Delta M = 6.79^{**}$

Notes: χ^2 , chi-square; df, degrees of freedom; RMSEA, root mean square error of approximation; TLI, Tucker Lewis index; CFI, comparative fit index

Table II.
Multigroup analysis of the proposed JD-R model for nurses ($n = 261$) and police officers ($n = 463$)



Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Figure 2. The multigroup model with *guanxi* in the JD-R model for 261 nurses (left) and 463 police officers (right)

As two different samples were involved, the equivalence of M_4 across samples was tested with respect to the regression weights and the covariances. Compared to the unconstrained model (M_4), the fit of the models with equal regression weights (M_5) and with equal covariances (M_6) deteriorated significantly ($\Delta\chi^2$ ($\Delta df = 14$) = 64.89, $p < 0.001$ and $\Delta\chi^2$ ($\Delta df = 5$) = 16.63, $p < 0.01$, respectively). Thus, not all regression weights and covariances were the same for both samples.

Inspection of the separate covariances and regression weights revealed that two covariances and seven path coefficients were invariant across both samples (cf. Table II). The correlations between job demands and social resources, and between job demands and *guanxi* exchange were both higher for police officers (r 's were 0.31 and 0.36, respectively, $p < 0.001$) than for nurses (r 's were 0.17 and 0.21, $p < 0.05$). The path from job demands to burnout was positive and significant, but stronger for nurses ($\beta = 0.48$, $p < 0.001$) than for police officers ($\beta = 0.39$, $p < 0.001$). The path from job demands to engagement was only negative for nurses ($\beta = -0.19$, $p < 0.05$). Apparently, high-job demands had stronger adverse effects for nurses than for police officers. The paths from social resources to work engagement and from social resources to commitment were positive and significant only for police officers ($\beta = 0.33$ and 0.20, $p < 0.001$, respectively), whereas the path from task resources to commitment was positive and significant only for nurses ($\beta = 0.28$, $p < 0.05$). Thus, task-related and social resources played a different role in both samples. This is exemplified by the fact that the path from *guanxi* to task resources was positive and only significant for nurses ($\beta = 0.20$, $p < 0.05$).

Sobel tests revealed that the indirect effects of *guanxi* on engagement and commitment (via social resources) were significant for police officers (Sobel = 3.88, $p < 0.001$ and Sobel = 3.15, $p < 0.01$, respectively). However, for nurses the indirect effects of *guanxi* on engagement and commitment (via task resources) were non-significant (Sobel = 1.76 and 1.70, ns). Hence, the indirect effect of *guanxi* on work outcomes occurred mainly through social resources.

Discussion

The current study contributes to the conceptual and cross-cultural development of the JD-R model by differentiating between task and social resources, and by including the typically Chinese interpersonal phenomenon of *guanxi*.

Main findings

Multigroup analyses supported the distinction between social resources and task resources in both samples. The model with two separate types of job resources (i.e. social vs task resources) fitted the data significantly better than a model with one, undifferentiated resource factor. Moreover, these two types of resources played different roles in the JD-R model. Whereas social resources were positively related to engagement and organizational commitment (for police officers), task resources were positively related to engagement (for both nurses and police officers), organizational commitment (for nurses), and negatively to burnout (for police officers).

Differences between nurses and police officers. Although these findings show that social and task resources are distinct concepts, we found different patterns of results across both samples. Social resources were especially relevant as antecedents of engagement and commitment among police officers, whereas task resources took this place for nurses. These differences might be due to the different situations in which nurses and police officers find themselves in today's China. For nurses, China's health care reform program – "New Health Care Reform Plan" has taken place in China since 2009 to improve medical services to ensure both quality and efficiency in the health care sector. The traditional health professionals-centered service model is currently gradually being replaced with a patient-centered model, meaning that increased patient needs and the application of medical technology health care require redesign of the structure and the processes of care provision. As a result, nurses' job demands have increased, both in terms of patient care as well as in relation to new medical technology. This is exemplified by the fact that job demands had stronger adverse effects for nurses than for police offices. However, Maslach and Leiter (1997) proposed that a good fit between employees and their work environment would result in positive work outcomes. Task resources such as job control and participating in decision making are critically important for nurses to deal adequately with these increased demands, to achieve work-related power, and to empower patients, which should lead to higher organizational effectiveness (Kanter, 1979). Therefore, those with easy access to task resources in demanding environment are more motivated and committed in their jobs.

Compared with nurses, social resources were more important for police officers' levels of engagement and commitment. The higher their job demands, the more social resources they had. Previous research has shown that social coping resources, especially social support, are needed to deal with demanding situations and events (McCreary and Thompson, 2006). For example, police officers often rely on supervisors for information to deal with violent crime, and talking things over among co-workers are the most frequent form of coping utilized while on duty. Police officers who feel marginalized or excluded from their peer group not only suffer from a lack of acceptance but are also denied information, sponsorship, and promotion opportunities (Ellison and Genz, 1983). Thus, for these reasons social resources could be particularly important for police to stay engaged.

Guanxi and the JD-R model. Our findings revealed that *guanxi* could be integrated into the JD-R model, although its patterns of associations with other concepts differed across samples. Specifically: first, *guanxi* was positively related to social resources among nurses and police officers, and to task resources among nurses; and second *guanxi* was positively related with engagement among nurses and police officers, while positively related with burnout among police officers. And finally, *guanxi* was positively related to commitment, but only for police officers.

Guanxi is embedded in informal personal social interactions that take place in formal work situations. The social resources included in our study were based on work-related interactions but their availability was to a large degree influenced by the quality of *guanxi*, as exemplified by the positive relation between *guanxi* and social resources in nurses and police officers. Furthermore, the basis for a high-quality *guanxi* exchange between supervisor and employees lies in mutual trust, loyalty, and obligation. In this sense *Guanxi* can be viewed as a means for nurses and police officers in maintaining a well-balanced social exchange relationship with their supervisor to stay engaged. Interestingly, task resources were relatively important for nurses, suggesting that among nurses *guanxi* exchange with supervisors is more focussed on task resources than among police officers. On the one hand, *guanxi* encourages perceptions of a relational psychological contract; that is, employees agree to contribute loyalty, trust, and continued membership while the organization provides competent management, participation, and a sense of belonging (Maguire, 2002). On the other hand, the police subculture subjects its members to a strict operating code laden with discretion, secrecy, and solidarity in an attempt to insulate the officer from an uncaring and generally unsupported management structure, as well as a hostile public (Van Maanen, 1978). This could explain why *guanxi* was associated with organizational commitment among police officers.

Guanxi exchange was positively associated with work engagement in both samples, but also was positively associated with burnout in police officers. It might reflect the complicated psychological dynamics involved in *guanxi*. On the one hand *guanxi* involves an emotional attachment that facilitates the development of high-trust workplaces, and people who report high levels of *guanxi* tend to believe they are being treated fairly (Chen *et al.*, 2011), which can be assumed to lead to higher well-being (i.e. engagement). On the other hand, establishing high levels of *guanxi* requires high levels of effort, and these investments in the relationships with others are not always reciprocated equally – not even in the long run. Previous research has shown that investing much effort in a potentially unrewarding relationship can exhaust one's energy, elicit distress and negative emotions, and could lead to burnout (e.g. Buunk and Schaufeli, 1999). Thus, depending on the specific context, high levels of *guanxi* may have positive and/or negative effects on well-being.

Limitations and future research

One limitation that should be considered concerns the fact that the reliability of some scales in this study was relatively low (i.e. below 0.70). It is possible that this reflects difficulties in translating Western measures for use in an Eastern cultural context. On the other hand, none of the reliabilities were below 0.60, which can be considered adequate given the relatively small number of items used for the measures included in this study (cf. Cortina, 1993). Second, the fact that the present study was carried out in the China might call for similar studies on the JD-R model in other counties to investigate the validity of the distinction between task and social resources and the relationship with informal personal networks on the other. Third, the difference in the gender composition of the nurse (100 percent female) and police officer (13.9 percent female) samples might confound the effects of gender and occupation. Thus, in the nurses sample gender could not be controlled for. When controlling for gender when testing the hypothesized model in the police officer sample, the findings were virtually the same to those reported in the current study. Finally, the present study relied on

self-reports and a cross-sectional design. The cross-sectional design precludes drawing causal inferences. Thus, future longitudinal research should confirm the causal linkages proposed in this study. As regards the issue of self-reports, as indicated above we performed a multigroup Harman one-factor test (Podsakoff *et al.*, 2012), the results of which showed that the associations among the measures were not likely to be due to common method variance. Apparently, using self-report data did not lead to trivial associations among the study variables.

Implications

Our findings have several implications for occupational stress research and practice. As regards theory, it seems that the dimensionality of the job resources concept should be reconsidered. Whereas previous research using the JD-R model usually focussed on a compound job resources concept that included a wide variety of different resources, the current study suggests that a theoretical and empirical distinction between task resources and social resources is warranted. Further, in the practice of stress management, we propose to consider not only formal work-related interactions but also informal interpersonal relationships (such as *guanxi* reciprocity) when focussing on the effect of social resources on well-being. Particularly when these informal relations span organizational hierarchical boundaries, they may offer significant and rewarding benefits to individuals. From a societal perspective, it is important to acknowledge that *guanxi* exchange may promote employee well-being and work outcomes because good *guanxi* promotes trust and facilitates formal institutional support. It follows that employees and managers should be motivated to develop informal personal relationships in organizations as well, especially in work situations where it is difficult to increase task resources. However, note that *guanxi* exchange may potentially also affect employee well-being negatively, especially when interpersonal relationships take precedence over the procedural justice rules in the process of resources distribution.

Conclusion

The current study shows that social resources and task resources play a different role in the JD-R model. Moreover, the Chinese notion of *guanxi* (exchange of favors) was successfully integrated into the JD-R model. This not only increases the applicability of the JD-R model in China, but also exemplifies how the JD-R model can be extended by integrating notions from non-Western cultures.

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