

SELF-EMPLOYED AND WORK-RELATED WELLBEING

A comparative study between self-employed and organizational employees on burnout and engagement using Job Demand-Control-Support model

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Abstract

This study employed the Job demands-control-social (JDCS) Model (Karasek & Theorell, 1990) on sample of 487 Chinese self-employed workers (n=243) and organizational workers (n=244), with the aim to examine the two types of employees' working conditions to their consequential work-related well-being (i.e. burnout and work engagement). The T-test result demonstrates that self-employed workers do not have more active jobs, in fact self-employed workers have the same job control but receive significantly less job demands than organizational workers, however the difference in job demands does not explain the current finding on self-employed workers experiencing less burnout, and such finding happens to contradict the claims from previous existing studies in Western context. Moreover, the observed increase in engagement for self-employed workers likely comes from a different source rather than having an active job. Multiple regressions with all three predictors and their interaction terms are performed, and the result remains consistent with the JDCS model and fully confirmed the three-way buffer hypothesis in Chinese context. The between-groups data suggest that JDCS model has less influential power among self-employed workers than among organizational workers. In particular, social support in the workplace enhances work engagement and reduces burnout more effectively in organizational workers than in self-employed workers.

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Introduction

Current economic, social, and technological changes have transformed the traditional form of employment, providing workers with greater opportunities for self-employment (Connelly & Gallagher, 2004; Sullivan, 1999). These self-employed workers are characterized by higher job control and more independence when compared to more traditional organizational employees (Lange, 2012), which corresponds to positive outcomes, such as higher job satisfaction (Taylor, 2004, David & Maria, 2011; Felfe et al, 2008, Hundley, 2002; Benz & Frey, 2006) and outstanding work performance (Gorgievski-Duijvesteijn & Bakker, 2010). Additionally, this finding regarding positive work outcomes has been found consistently true in numerous European countries (Blanchflower, 2000; Benz and Frey, 2008). However, it is important to note that some self-employed workers perceive their jobs as more stressful and mentally straining due to high workloads, longer working hours, and insufficient workplace support (Lewin-Epstein & Yuchtman-Yaar, 1991; Andersson, 2006). In fact, self-employed workers were often more burned out and less satisfied than organizational workers, who work full-time at only one organization (Maslach, Shaufeli, & Leiter, 2001).

Previous studies in occupational psychology literature involving self-employment found both positive and negative aspects. These studies, however, were conducted, almost exclusively in areas more considered to be of “Western culture.” In respect to developing countries, little research exists. The current study was conducted in China, a developing country. Other related studies, also completed in China, have demonstrated that self-employed workers, in general, were not more satisfied than traditional wage-employed workers (Miao, 2015). This research gap, between studies conducted in more westernized countries and developing countries, motivates us to use the Job-Demands-Control-Social model (JDCS; Karasek & Theorell, 1990) to examine how job characteristics are combined for Chinese self-employed workers, and to predict not only positive motivational process (i.e. work engagement) but also the negative aspect of burnout. Results demonstrate the benefit of providing practical values for both individuals and organizations to improve work conditions for better and healthier work environments in the future.

The Job Demands-Control (Social) Model

The JDC(S) model has gained its popularity partly due to its simplicity and broad application in various countries and cultures. It has been tested with high reliability and

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consistency in several scientific Chinese studies (Xiafang Chen, 2006; Qian Shi, et al., 2010). The original model entails two aspects of work characteristics: (i) job demands and (ii) job control.

Job demands refer to physical, psychological, social, or organizational aspects requiring physical and/or psychological efforts, which are associated with organizational sources of stress (Karasek and Theorell, 1990). In our current study, job demands include only psychological dimensions, namely, high working pace, excessive efforts, high workload, high time pressure, and conflicting tasks. These factors are often included in antecedents of burnout studies and are associated with burnout for all employment types (Maslach, Schaufeli, & Leiter, 2001).

Job control includes two constructs, workers' decision latitude (one's authority to make decisions on the tasks), and skills discretion (i.e. skill variety, and skill requirements). Later, the JDCS model was formed through the integration of social support at work into the model (Johnson, and Hall, 1988). Karasek and Theorell (1990) defined this idea of social support as the overall levels of helpful social interaction available on the job from both coworkers and supervisors (Karasek & Theorell, 1990, p. 69). Job control and social support were conceptualized as coping resources that precede and influence coping (Lazarus & Folkman, 1984). In the occupational context, researchers discovered a positive relationship between work enjoyment and resources such as job control and coworker/supervisor support in individual employees (Halbesleben, 2010, Bakker & Schaufeli, 2004).

Burnout and Work engagement

In our present study, burnout and work engagement were included as two opposite aspects of work-related wellbeing. Burnout refers to the reaction to chronic work stress characterized by exhaustion (i.e., consuming emotional resources), cynicism (i.e., indifferent attitude towards work) and lack of professional efficacy (i.e., reduced feelings of competence, accomplishment).

Work engagement is defined as a positive, affective-motivational state of fulfilment that is characterized by vigor, dedication, and absorption (Schaufeli, Bakker & Salanova, 2006). Vigor refers to high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence in the face of difficulties. Dedication is characterized by a sense of significance, enthusiasm, inspiration, pride, and challenge. Absorption is characterized by being fully concentrated and happily engrossed in one's work, whereby time passes quickly, and one has

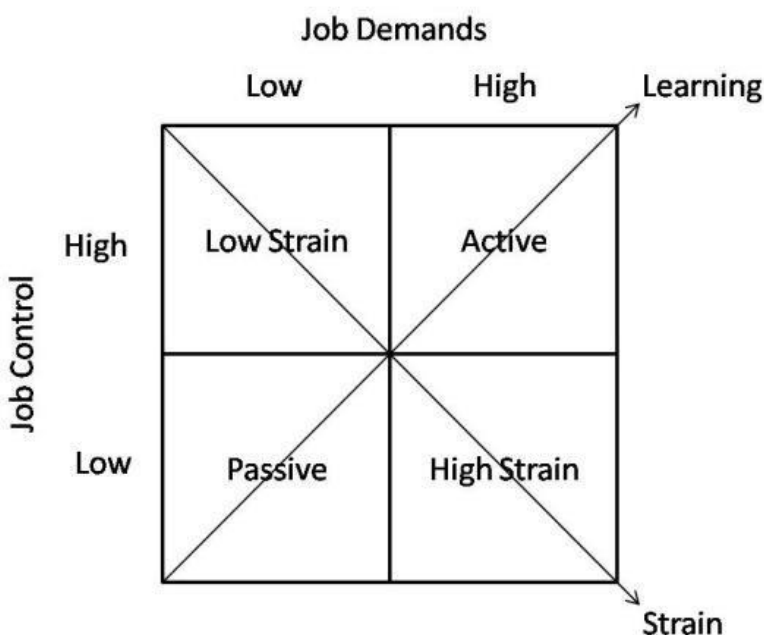
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difficulties with detaching oneself from work (Schaufeli, Salanova, González-Roma, & Bakker, 2002).

The original JDC model and the expanded JDCA model suggest the interaction effects of job demands and job control can predict the positive and negative work-related outcomes of workers (Karasek and Theorell, 1990). Jobs involving high-strain work situations and high demands with low job control were the most undesirable for workers (*see Fig 1*), resulting in elevated levels of burnout (Upadaya & Salmela-Aro, 2016). Conversely, in situations where job demands are high in the presence of high job control, learning behaviors appear which amplify work engagement (Karasek, 1979). Thus, job control plays a moderating effect in reducing the degree of burnout predicted by (high) job demands (Upadaya & Salmela-Aro, 2016).

In the expanded JDCA model, workplace social support played a crucial role, in which an increase in such predicted greater work engagement (Schaufeli, Bakker & Rhenen, 2009). Though studies have suggested that greater support at work presented buffers to the unfavorable effects of high-strain jobs on burnout (Cohen & Wills, 1985), Van der Doef and Maes (1999a) later pointed out the limited numbers of studies on this proposition with low consistency, concluding that more evidence was necessary regarding the buffering role of social support (Van der Doef and Maes, 1999a).

Figure 1 The Job Demand-Control model (Adapted from Karasek, 1979)



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Self-employment

A large body of research has focused on differentiating self-employment from organizational employment, yet the boundaries between the two forms of employment still remain unclear (Baitenizov et al. 2018). The two employment forms differ in that organizational employees earn income through working for an employer or organization, while self-employed worker earn income through themselves or their employees (Škalamera-Alilović et al., 2017). In modern empirical studies, business ownership and entrepreneurship are used synonymously for self-employment at the EU level. However, in China, self-employed works are known as “chuangye,” which is reminiscent of the EU conceptualization of self-employment but emphasizes “independence” and “ownership” of services provided.

Despite variations in definitions, self-employment can be understood through four main criteria (Eurofound, 2010:15): a) Investing own capital; b) autonomy in the labor market; c) responsibility and decision-making capacity with regards to own work; and d) the presence of the employee. Within these four criteria are found five basic categories of self-employment: (i) Entrepreneurs; (ii) traditional freelancers; (iii) craft workers; (iv) self-employed workers in skilled but unregulated occupations; and (v) self-employed workers in occupations that require low qualifications. For example, with the rapid development of the service sector and greater Internet access, the media and press often utilize independently contracted workers today. ICT (information and communication technologies) has also expanded self-employment into even further areas of self-employment, such as online tutors/teachers and graphic designers who operate remotely. With this increasing usage of subcontracting (i.e. self-employed workers) in many of today’s companies, the influence of ICT is evident (Dunja & Andrea, 2017). Thus, in the present study, we have mostly focused on this category of self-employed workers who are in skilled but unregulated occupations (like those mentioned above). These independent workers are specialized in an actual profession with or without a license or qualification to take on services, in which they implement activities independently or in cooperation with other professionals or a limited number of employees.

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Research Question

In accordance with existing literature, the aim of the present study is to examine how self-employed workers in China differ from organizational employees in the aspects of (i) job control, (ii) job demands, and (iii) social support at work, and how this affects their work-related outcomes on burnout and engagement (*See Fig 2*).

The following hypotheses will be tested:

Hypothesis 1 (H1). Self-employed workers have more active jobs, characterized by higher job demands and higher job controls than organizational employees.

Hypothesis 2 (H2). As a result of active jobs, self-employed workers show higher work engagement, in all three dimensions of vigor, dedication and absorption than organizational employees.

Hypothesis 3 (H3). Self-employed workers experience higher burnout in general, particularly higher exhaustion than organizational employees due to higher job demands.

Hypothesis 4 (H4). Support in the workplace is related to higher work engagement and lower burnout, besides, support acts as a buffer role to buffer the impact of high strain jobs in Chinese context.

The current study will also exploratorily examine whether the buffer role of work support is true for both groups—self-employed and organizational workers.

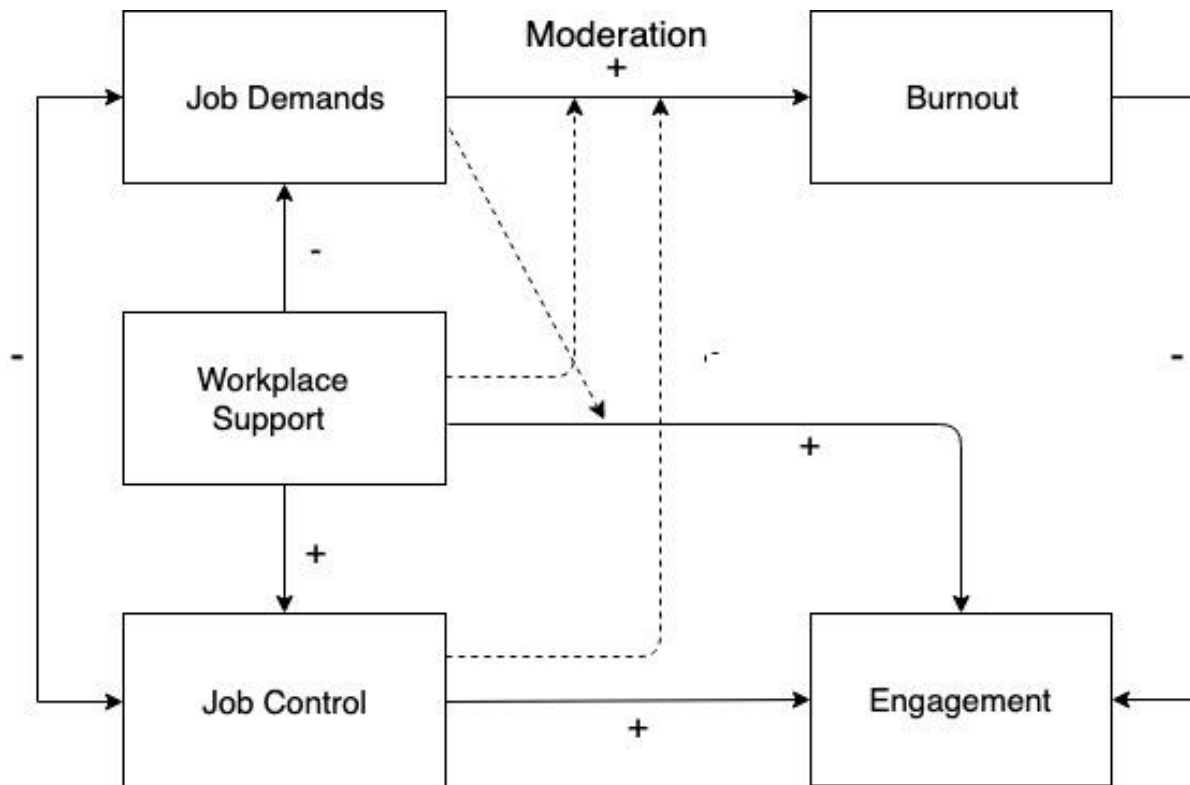
To being, research findings argued that self-employed workers suffer most from social isolation because they have limited collegial and supervisory support (Wright, 2009). This lack of support manifests as insufficient job resources, which can potentially cause burnout. However, a more recent study has revealed that self-employed workers proactively seek to build strong relations with client organizations and other self-employed colleagues, thus avoiding isolation and overcoming difficulties (Van den Born & Van Witteloostuijn, 2013).

Though, this existing research has acknowledged differences between individualist and collectivist cultures between Western and East Asian cultures (Hofstede, 1991; Triandis, 1996), no study has investigated the effects of social support among self-employed workers, and it is rather unclear whether social support takes the same form for self-employed workers in different work situations as it functions in traditional work settings. This current study focuses on an East-Asian workplace environment because workplace relationships with individuals in East Asian cultures are perceived as more fundamental regardless of the job type itself (Oh et al., 2014), and

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this provides an opportunity to determine the role of social support for self-employed workers in a culture where the individual is not the main focus of identity.

Figure 2 Process model of JDCS mode on burnout and engagement



Methodology

Participants

Respondents were white-collar Chinese workers in Beijing, from four industries which rely on both self-employed and organizational employees: (i) Design, (ii) IT, (iii) media marketing, and (iv) education. A total of 487 respondents participated in this Internet survey, with a nearly even split in worker types (self-employed = 243, organizational employee = 244). Only Beijing workers were chosen, which might not accurately reflect other areas of China, which can differ profoundly. Shiqian's (2010) findings have also demonstrated that the JDCS model is valid in only advanced urban cities (史茜, 舒晓兵, & 罗玉越, 2010). In order to reach sufficient numbers of respondents, I collaborated with the website <https://www.wjx.cn> for data collection. This website,

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in particular, provides data services for academic and professional research purposes. See **Table 1** from the results section for more information on the demographic characteristics.

Procedure

A survey was generated to a QR code and disseminated among a wide range of companies in Beijing through emails and WeChat—a major phone app with nearly 92% users in China. A consensus letter was included on the first page preceding the survey, providing the researcher's name, contact information, school, research objectives and purpose with an emphasis on the confidentiality and anonymity of the data. After completing the survey, participants were rewarded with a 5-yuan virtual red pocket that carries the same monetary value (approximately \$0,73 USD). Data were automatically encoded through the platform and accessible in real-time for mobile analysis. The data of 55 persons (9%) were excluded from the analyses after a careful check on the completion status, with some responses demonstrating a lack of understanding or a clear indication of invalid data (e.g., age 20, years of working 11-20 years).

Instruments

The first section of the survey concerned demographic characteristics such as age, gender, marital status, and family circumstances. A number of questions related to background characteristics, such as commuting time to and from work, actual working hours spent on tasks, total work time per week (i.e. total time spent includes preparation, working from home, actual working, etc.), and employment contract type (i.e. fixed-term contract, permanent contract). All questions were adapted and translated into Mandarin Chinese for the benefit of the participants.

The *Job Content Questionnaire* (JCQ, Karasek, 1985) was employed for job demands, skill discretion, and decision authority. This questionnaire was tested and translated into multiple languages and has shown reliability and validity across a wide range of countries. The Chinese version was downloaded from the Chinese psychology organization website.

Social support was measured with the Work-Related Social Support Scale ("WRSS") (Frese, 1989) to the exclusion of the JCQ social support scale because its measures do not apply for self-employed workers. Unlike the JCQ social support scale, the WRSS scale does not narrow the sources of support to colleagues and supervisors only. In responses to the questionnaire, the term "these persons" is used to refer to colleagues and supervisor support for both organizational

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workers and for self-employed workers, client companies or other self-employed workers were indicated. Five scaling questions were included with a rating from 1 (not at all) to 4 (completely). An example is: “How willing are these persons to listen to your problems with your job?”

Burnout was measured with a new scale based on the original Maslach Burnout Inventory-general survey (“MBI”). The dimensions of the new scale (ie, exhaustion, cynicism, professional efficacy) parallel those of the original inventory (ie, emotional exhaustion, depersonalization, personal accomplishment) as these terms refer to the self and not colleagues. This measurement was tested in different countries and approved valid for the Chinese context (Odagiri et al. 2004).

Work engagement was assessed with the nine-item version of the Utrecht Work Engagement Scale (“UWES”) (Schaufeli, Bakker & Salanova, 2006). Items for the assessment of the three engagement dimensions included vigor, dedication, and absorption. The UWES has demonstrated its validity across a number of different countries, including China (Yi-Wen and Yi-Qun, 2005; Shimazu et al., 2008). Example items include: ‘At my job I feel strong and vigorous’, and ‘I am immersed in my work’. All items were scored on a seven-point rating scale ranging from 0 ‘never’ to 6 ‘always’.

Data Analysis

Once the survey data has been entered into SPSS, the internal reliabilities among items for each scale were checked to ensure measurement consistency. For this purpose, job control 2 (repetitive work) and job control 5 (little decision autonomy) were reversely coded, as well as job control 3 (no extra work) and job control 4 (enough time to complete the work). The final Cronbach’s alphas for 9 items in job control, 5 items in job demand, 5 items in social support, 15 items in burnout and 9 items in work engagement are .923, .917, .920, .908 and .953, respectively, suggesting optimal consistency among question items to measure one construct. The scales were then constructed by taking the mean of all the internal items. Independent samples T-tests were performed to test hypothesis 1, 2 and 3 on the outcome variables between groups. Multiple regressions with centered predictors and their interaction terms were executed to understand the role of social support, as well as demands and control in predicting burnout and work engagement. Multiple regressions were also used to investigate the differential effects of workplace social support in burnout and work engagement between the self-employed and organizational workers.

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Results***Demographic characteristics***

The demographic characteristics of the participants are summarized in **Table 1**, grouped by the self-employed and organizational workers. The self-employed workers are a slightly younger population as 30.9% of them are under 30 as compared to 25.8% of the organizational workers, also more older workers over the age of 51 are found in self-employed workers. There is also a significant difference between the two groups in industry. In particular, most self-employed in China work in education/translation sector and PR/Media industry comes the second. Although educational background between the self-employed and organizational workers do not differ significantly, still a noticeable trend extending to higher academic degrees of Bachelor, Master and Ph.D. is more seen on self-employed workers, suggesting self-employed are in general more educated than the organizational workers in China. Otherwise, there are no significant differences between the two groups in terms of gender, monthly income composition.

Table 1 Demographic characteristics of the self-employed and organizational workers

	Self-employed		Organizational	
	N	%	N	%
Gender				
Male	126	51.9	132	54.1
Female	117	48.1	112	45.9
Age*				
20-30	75	30.9	63	25.8
31-40	62	25.5	86	35.2
41-50	69	28.4	67	27.5
Over 51	37	15.2	28	11.5
Education				
College	29	11.9	88	36.1
Bachelor	146	60.1	110	45.1
Master	55	22.6	37	15.2
Ph.D	13	5.3	9	3.7
Industry*				

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IT/E-commerce	54	22.2	65	26.6
Education/Translation	92	37.9	79	32.4
PR/Media/Art	61	25.1	52	21.3
Design/Architecture	36	14.8	48	19.7
Monthly Income				
<¥6,000	11	4.5	29	11.9
¥6,000 - 10,000	89	36.6	95	38.9
¥10,000 - 15,000	69	28.4	74	30.3
¥15,000 - 20,000	58	23.9	39	16
>¥20,000	16	6.6	7	2.9

H1: Self-employed workers have more active jobs, characterized by high job demands and high job control than organizational employees.

(See **Table 2**) The result indicate that even though the self-employed workers have higher job control ($M = 3.65$; $SD = 0.71$) than the organizational workers ($M = 3.53$; $SD = 0.80$), the difference between the groups is not statistically significant ($t(485) = -1.569$, $p = .117$). On the other hand, the self-employed workers suffer notably lower job demands ($M = 2.05$; $SD = 0.90$) than the organizational workers ($M = 2.44$; $SD = 1.12$), and the difference is highly significant ($t(485) = 4.059$, $p < .001$). The results do not support the hypothesis 1 that the self-employed have more active jobs. In fact, it suggests that the self-employed workers have the same job control as the organizational workers but receive fewer job demands.

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Table 2 Descriptives and T-test results of measurements between groups

	Self-employed		Organizational		T-test	
	Mean	SD	Mean	SD	t	Sig.
Job control	3.650	0.710	3.54	0.800	-1.569	0.117
Job demand	2.047	0.900	2.437	1.198	4.059	0.000
Social Support	2.852	0.852	2.756	0.937	-1.185	0.237
Engagement	4.379	1.074	3.944	1.563	-3.579	0.000
Vigor	4.351	1.104	3.924	1.596	-3.437	0.001
Dedication	4.365	1.148	3.925	1.602	-3.482	0.001
Absorption	4.420	1.191	3.982	1.645	-3.360	0.001
Burnout	1.639	0.713	2.126	1.292	5.141	0.000
Exhaustion	1.417	1.200	2.148	1.585	5.729	0.000
Cynicism	1.637	1.160	2.197	1.527	4.555	0.000
Reduced efficacy	1.826	1.229	2.060	1.611	1.804	0.072

H2: Self-employed workers show higher work engagement, in all three dimensions including vigor, dedication and absorption than organizational employees, as a result of active jobs.

(See **Table 2**) The self-employed workers show significantly higher overall engagement at work ($M=4.38$; $SD=1.07$) than organizational employees ($M=3.94$; $SD=1.56$), ($t(485) = -3.579$, $p<.001$). Moreover, the significant enhancement in engagement is also seen in its three sub-dimensions: vigor ($t(485) = -3.437$, $p<.001$), dedication ($t(485) = -3.482$, $p<.001$) and absorption ($t(485) = -3.360$, $p<.001$). The results partially support the hypothesis 2 that self-employed workers show higher work engagement. This suggests that the observed engagement enhancement in self-employed workers likely comes from a different source rather than having an active job.

In order to further understand the correlation between more work conditions and the work-related wellbeing. We performed a multiple regression with these three predictors and their interaction terms. Among the three models (See **Table 3**), even though model 3 has a higher R square score ($R^2 = .560$) than model 2 ($R^2 = .555$), the F value change is marginally insignificant ($p = .054$). Thus, model 2 was selected as the best and most parsimonious model to predict work engagement. Model 2 demonstrates the predictive power of job control ($B = .022$, $p < .005$) and

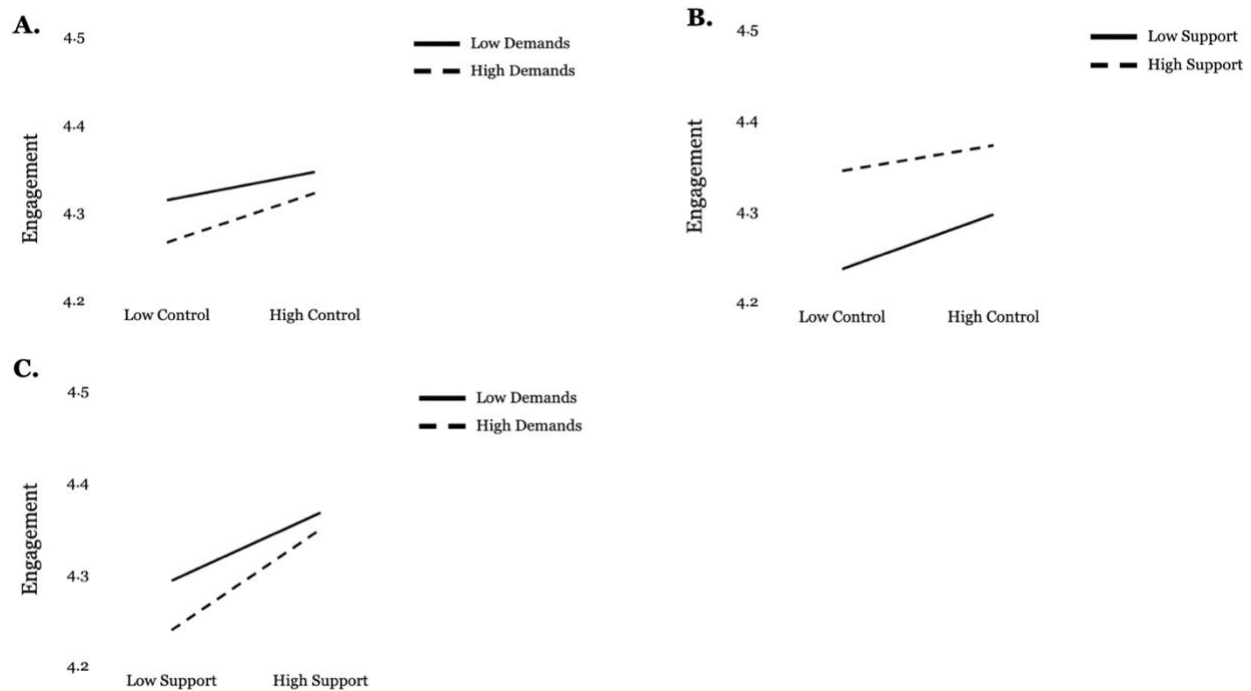
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social support ($B = .046, p < .001$) in promoting work engagement with statistical significance. No direct main effect of job demands on engagement was found ($B = -.018, p = .093$), however a significant undermining effect between job demands and support was notified, suggesting job demands diminish the positive effect of support on engagement to a significant degree (**Figure 3C**, $B = .009, p < .001$). Job control indeed moderates the negative influence of (high) demands in decreasing engagement (**Figure 3A**, $B = .006, p < .001$). Job control and social support combined suggesting that the positive effects of each predictor in work engagement tend to enhance each other to some degree (**Figure 3B**, $B = -.008, p < .001$). Lastly, no significant three-way interaction among job control, job demands, and social support was found in predicting work engagement, suggesting iso-strain jobs are not related to work engagement ($B = -.001, p = .054$).

Table 3 Regression results of three models predicting engagement scores

	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
Model 1				
Intercept	4.161	0.057	73.518	0.000
Job control	0.039	0.009	4.440	0.000
Job demand	-0.043	0.011	-3.843	0.000
Social support	0.064	0.013	4.934	0.000
Model 2				
Intercept	4.312	0.054	80.091	0.000
Job control	0.022	0.008	2.648	0.008
Job demand	-0.018	0.010	-1.683	0.093
Social support	0.046	0.012	3.850	0.000
Control x Demand	0.006	0.001	4.726	0.000
Demand x Support	0.009	0.002	4.055	0.000
Control x Support	-0.008	0.002	-4.452	0.000

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Figure 3 Two-way interactions among control, demands and support in predicting engagement

H3: Self-employed workers experience higher burnout in general, particularly higher exhaustion than organizational employees due to higher job demands.

Contrary to the hypothesized association, self-employed workers ($M = 1.64$; $SD = 0.71$) experience significantly less burnout than the organizational workers ($M = 2.13$; $SD = 1.30$) ($t(485) = 5.141$, $p < .001$). The effect is robust in two sub-dimensions of burnout including exhaustion ($t(485) = 5.729$, $p < .001$) and cynicism ($t(485) = 4.555$, $p < .001$), but remains marginally insignificant in reduced efficacy ($t(485) = 1.804$, $p = 0.072$). To understand whether lower burnout is due to lower job demands, we tested the suggestion and the result appears not to be true (*see Table 5*), because the self-employed workers still have much lower burnout after controlling for job demands. The results do not support the hypothesis 3, quite opposite, self-employed workers experience significantly lower burnout, not as a result of lower job demands.

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H4: *Support in the workplace is related to higher work engagement and lower burnout, besides, support acts as a buffer role to buffer the impact of high strain jobs in Chinese context.*

To understand the role of social support in burnout and whether it has interactions with job control and job demands, a multiple regression was performed with these three predictors and their interaction terms. **Table 4** shows the regression results using three models, with model 1 containing only three predictors ($R^2 = .297$), model 2 containing the predictors and their two-way interactions ($R^2 = .410$) and model 3 containing everything plus their three-way interaction ($R^2 = .475$). Model 3 was chosen as the best model to predict burnout as it has the highest value. Unsurprisingly, job demands are related to higher burnout ($B = .026, p < .001$) and job control is related to less burnout ($B = -.015, p < .05$). Congruent with the hypothesis 4, social support in the workplace significantly predicts less burnout ($B = -.046, p < .001$). Moreover, job control has significant negative interaction with job demands ($B = -.004, p < .001$), this suggests that higher job control can offset the negative impacts of high job demand in producing burnout. A significant interaction between the effects of job demands and work support is also found ($B = 0.026, p < .001$), indicating that social support effectively reduces the adverse impacts of high job demand on burnout. No significant interaction was found between job control and social support after controlling for the three-way interaction ($B = 0, p = .764$).

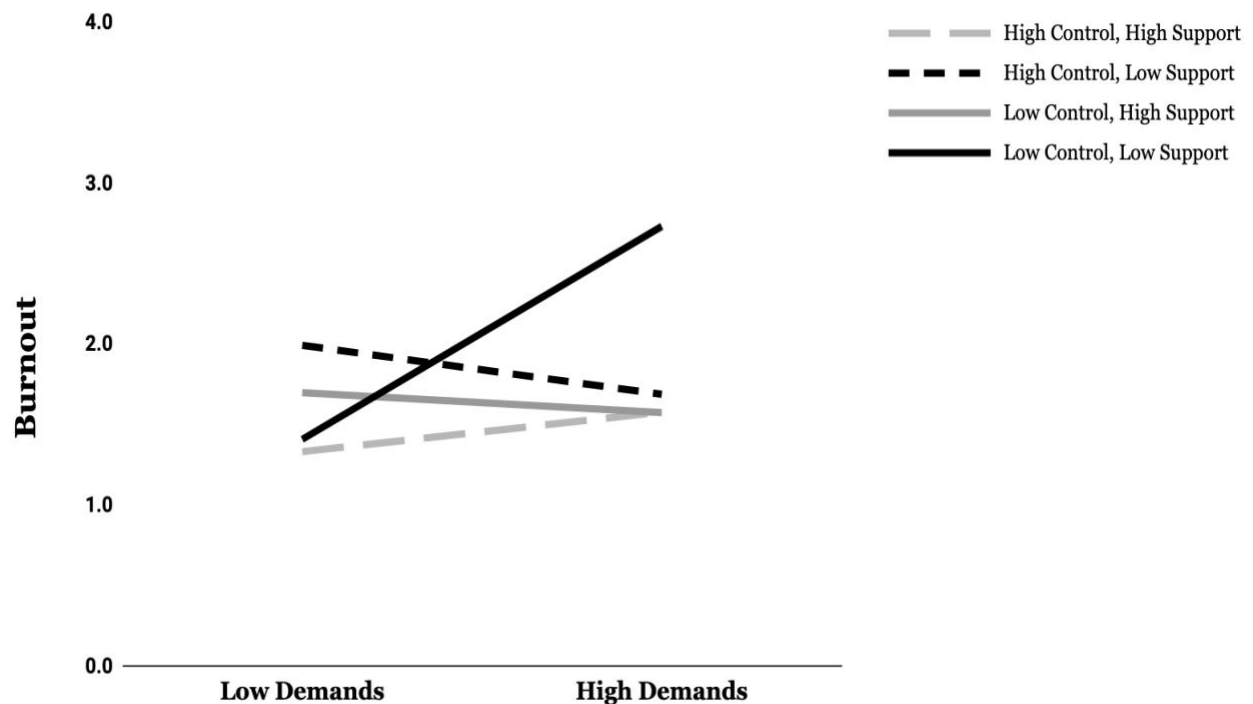
Most interestingly, there exists a significant three-way interaction among job demands, job control and social support ($B = .002, p < .001$). 8 values of burnout scores were calculated using the unstandardized B values from model 3 and the corresponding +1/-1 standard deviation for each of the predictors. The results are plotted in **Figure 4**. Consistent with the JDCS model, highest burnout is seen in iso-strain jobs (high job demands, low job control, and low social support), whereas jobs with low job demands, high job control and high social support combination scored the lowest on burnout. Moreover, social support indeed buffers the impact of high strain jobs (high demands and low control) in experiencing burnout (*the grey solid line is below the black solid line*). Similar buffering effect was also found with job control when social support is low in high demands job (*the black dotted line is well below the black solid line*). This significant three-way interaction fully confirms the hypothesis that the negative impacts of high-strain jobs on burnout can indeed be moderated by high social support in Chinese context.

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Table 4 Regression results of three models predicting burnout scores

	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
Model 1				
Intercept	1.883	0.041	46.144	0
Job control	-0.032	0.006	-5.028	0
Job demand	0.051	0.008	6.287	0
Social support	-0.078	0.009	-8.299	0
Model 2				
Intercept	1.776	0.039	45.263	0
Job control	-0.019	0.006	-3.266	0.001
Job demand	0.034	0.008	4.404	0
Social support	-0.065	0.009	-7.455	0
Control x Demand	-0.005	0.001	-4.899	0
Demand x Support	-0.008	0.002	-4.885	0
Control x Support	0.003	0.001	2.533	0.012
Model 3				
Intercept	1.754	0.037	47.218	0
Job control	-0.015	0.006	-2.686	0.007
Job demand	0.026	0.007	3.645	0
Social support	-0.046	0.009	-5.288	0
Control x Demand	-0.004	0.001	-4.729	0
Demand x Support	0.026	0.002	-2.849	0.005
Control x Support	0	0.001	0.3	0.764
Control x Demand x Support	0.002	0	7.727	0

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Figure 4 Three-way interaction effect among control, demands and support in predicting burnout***Exploring Differences Between groups***

With the attempt to answer the exploratory research question, we further account for differences on the resulting burnout and engagement from the three predictors between the two groups via more multiple regressions with the addition of employment type (or group) and its interaction terms as predictors. We created a dummy variable for group (0 encodes organizational workers and 1 encodes self-employed workers). **Table 5** show the regression results on the best model (Model 2) in interpreting burnout ($R^2 = .379, p < .0001$) and engagement ($R^2 = .221, p < .0001$) between groups. According to both models (Model 2), group is the most powerful predictor of burnout ($B = .371, p < .0001$) and engagement ($B = .340, p = .002$), reiterating the results for **H2** and **H3** that self-employed workers experience significantly more work engagement, and significantly less burnout than the organizational workers. All three work characteristics, job demands, job control and work support significantly predict burnout and engagement in the expected directions (main effects exist). Moreover, **Table 5** shows statistically significant two-way interactions on burnout and engagement between job demands and group, job control and

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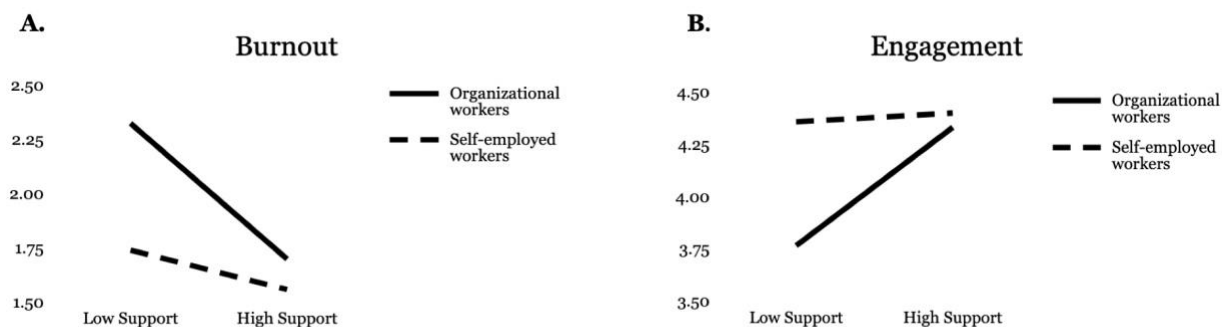
group, and work support and group. Central to our research objectives, **Figure 5** demonstrates the result that social support in the workplace enhances work engagement, reduces burnout significantly effectively in organizational workers than in self-employed workers.

Table 5 Regression results of models predicting burnout and engagement including the group variable

DV: Burnout					DV: Engagement				
Unstandardized					Unstandardized				
Coefficients			t	Sig.	Coefficients			t	Sig.
B	Std. Error				B	Std. Error			
Model 1					Model 1				
Intercept	2.048	0.057	35.780	0.000	Intercept	4.014	0.080	50.068	0.000
Group	-0.331	0.082	-4.049	0.000	Group	0.293	0.114	2.559	0.011
Demand	0.045	0.008	5.639	0.000	Demand	-0.038	0.011	-3.395	0.001
Control	-0.031	0.006	-5.026	0.000	Control	0.038	0.009	4.413	0.000
Support	-0.331	0.082	-8.380	0.000	Support	0.064	0.013	4.931	0.000
Model 2					Model 2				
Intercept	2.026	0.055	36.748	0.000	Intercept	4.039	0.078	51.589	0.000
Group	-0.371	0.079	-4.719	0.000	Group	0.340	0.112	3.046	0.002
Demand	0.056	0.010	5.464	0.000	Demand	-0.050	0.015	-3.399	0.001
Control	-0.041	0.008	-4.791	0.000	Control	0.051	0.012	4.260	0.000
Support	-0.104	0.013	-8.041	0.000	Support	0.094	0.018	5.142	0.000
Demand x					Demand x				
Group	-0.051	0.016	-3.186	0.002	Group	0.057	0.023	2.503	0.013
Control x					Control x				
Group	0.033	0.012	2.725	0.007	Group	-0.042	0.017	-2.461	0.014
Support x					Support x				
Group	0.074	0.018	4.078	0.000	Group	-0.087	0.026	-3.348	0.001

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Figure 5 Two-way interactions between support and the group in predicting burnout and engagement



Discussion

This present study employed the Job-Demands-Control-Social (“JDCS”) Model (Karasek&Theorell, 1990) on self-employed workers and organizational workers in Beijing, China, with the aim to examine the work-related well-being (i.e. burnout and work engagement) that results from certain working conditions for the two types of workers.

The results are highly supportive of the JDCS model in the Chinese occupational context. First, jobs characterized by high demands, low control, and low support have the greatest amount of burnout and the lowest engagement from workers. Second, workers having jobs that combine low demands, high control, and high support experience the lowest amounts of burnout. Third, the moderating effects of job control and work support proposed by van der Doef and Maes (1999) that job control and social support can counteract the negative impact imposed by demanding jobs was supported by the evidence. Lastly, we also found a significant three-way interaction among job demands, job control, and social support in predicting burnout.

Regarding the differences in job-related aspects between self-employed and organizational workers, our results are equally interesting and highly informative. The self-employed in China reported significantly lower job demands while their job control is the same as the organizational workers. These self-employed workers are known for having lots of autonomy over the ways they like to carry out the tasks. They also reported lower burnout and higher engagement than the organizational workers. The low demand seems to be the most indicative quality of this lower burnout and higher enjoyment rate, however our finding found self-employed workers experience significantly lower burnout not as a result of lower job demands. Additionally, as self-employed

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workers report equivocal levels of job control, this does nothing to offset the benefit of lower demand enjoyed by these workers.

These results largely differ from findings in previous studies in the western context, where Hundley (2001) found that the self-employed Western workers reported higher job control, which typically enhances motivation (Born & Altink, 2003). This could be linked to higher work engagement in self-employed workers—confirmed in numerous studies (e.g. Gorgievski et al., 2010). However, Andersson (2001) also pointed out that the drawbacks of self-employment—a higher workload and more emotional demands, thus consequently, higher burnout.

There are a couple possible explanations as to why the Chinese self-employed worker experiences lower job demands. First, Chinese corporate culture is intrinsically different from Western corporate cultures. Traditional Chinese values emphasize loyalty and duty to employers (part of *Wu lun*), group conformity, and non-confrontation (Fan, 2000). This culture morally prioritizes the benefits of the employer over that of the employees. This prioritization of the employer from a cultural standpoint might explain the responses of higher job demands by organizational workers.

Secondly, due to the volatile nature of self-employment, these workers might not have had consistent work projects. These periods of intermittent unemployment might reduce their perceived job demands, as self-employed workers have the ability to “work at will” when in-between projects. However, there might be additional explanation. One such interesting possibility is that there may be a selection bias by self-employed workers in that they are more stress-resistant than the organizational workers. Although lacking empirical support in China, it is likely that the people who decide to become self-employed have more enthusiasm and autonomy in choosing what to do voluntarily before seeking self-employment. Thus, recognizing that organizational workers lack the option to seek self-employment due to economic conditions, which could increase stress, might give a perception of stress-resistance to the self-employed workers.

Another explanation for lower levels of job-related stress in self-employed workers could be that they only provide their unique, specialized service. Therefore, the complexity of tasks for them is rather low when compared to organizational workers. A study carried out on the impact of personal resources (i.e. self-efficacy) with 226 Chinese employees found that complexity of tasks at a job has a tendency to deteriorate one’s self-efficacy, which is also known as psychological

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capital (Luthans, Youssef & Avolio, 2007), and as a consequence, affects work engagement in a negative way (Pan et al, 2001; Jacob & Jolly, 2013).

The data contributes a clearer understanding of JDCS model between the groups that the work characteristics are less influential among self-employed than among organizational workers in China (See **Figure 6** in Appendix A). Possible explanations could be that self-employed workers in China already have low burnout and high engagement to begin with, in line with the data suggestion from the regression model that employment type holds the strongest power in predicting burnout and engagement among other work characteristics. Consequentially, there is less room for the effects of job control, job demands or/and social support-mediated change, to exert a stronger influence.

Another explanation aligns with Verhoeven, Maes & Joeke (2003) finding that the JDCS model is an overly simplified model for the prediction of work-related wellbeing in a specific occupation (i.e. teacher, in his study). There are additional factors that are not considered in the JDCS model, which are particularly pivotal in the self-employed workers, this can be the reason why they are exempt from JDCS predictions. These factors may associate through personality attributes to voluntary entry into self-employment, to self-motivation and proactive behaviors. Self-employed workers may proactively seek to build strong relations with client organizations and other self-employed workers in colleague-like working patterns adopted to overcome difficulties during work (Van den Born & Van Witteloostuijn, 2013).

Aside from confirming the effects of low jobs demands and similar levels job control confirming the first two results of this study, the results of this study are consistent with the buffer hypothesis from the JDCS model that social support can diminish the impact of high-strain jobs on psychological well-being. This confirms the third result of this current study, which is further supported by existing research (Verhoeven, Kraaij, Joeke, and Maes, 2003; Demerouti et al., 2001), but also disputed by others, such as Hausser et al. (2010), in which only 1 out of 13 studies reviewed found the three-way interaction in predicting emotional exhaustion (one core construct of burnout). According to its authors, there is currently there is only weak, partial evidence for the buffer hypothesis via the JDCS model. Yet, they also suggest that the reason why the three-way buffer hypothesis is under-supported may be due to the non-matching task design of the JDCS dimensions. As our surveys were designed specifically to test the JDCS model, it shows promising prospects for future studies in validating the buffer hypothesis.

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Lastly, it is exciting to expand the evidence of JDCS model to non-Western cultures such as China. This further substantiates the universality of the JDCS model and its insight into human psychology.

Future research and limitations

When considering the practical or policy implications from this research, it is important to keep in mind some inherent limitations of the research design. First, the use of an Internet survey bring bias to our sample, as participants are those with Internet access who are willing to respond to such surveys. Moreover, the sample was limited to Beijing white-collar workers in four cultural sectors, considering China is a large country with bigger working population, this might have led to a restriction of range, which in turn could have reduced the effect sizes of the correlations(Schaufeli, Toon & Willem, 2008). Hence, future research is suggested to include more heterogeneous samples, preferably from different cities, more sectors, consisting of applicants holding various types of jobs. This would also increase the generalizability of the results.

Secondly, although we claimed our research aiming on the studying processes in self-employed workers work-related wellbeing, cross-sectional designs yield insufficient information to draw causal conclusions between work characteristics and work-related outcomes. More longitudinal studies are needed to repeat the measures over time. In addition, these studies should include a measure of the JDCS model at each follow-up study, so that it can be determined whether the lack of predictive power in former studies attributing to changes in the work characteristics over time. The third limitation is that it is crucial to assess the objective work environment of self-employed workers in China in different sectors. In other words, measure of job demands, job control and workplace support should reflect closely to these employees' real work situation. Considering this, it would be beneficial to develop more occupation measurements appropriate for specific self-employed group in future studies.

Lastly, Today's self-employed workers in China have different motives for entering self-employment, it was impossible to take into account individual differences, e.g., intrinsic motivation. Prospective research that continues self-employment research, including more measures to differentiate individuals in the self-employed setting would be of utmost value.

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Practical implication

Despite these limitations, our findings have important practical implications. Our results show that especially the self-employed workers in China have significantly fewer demanding jobs, they are notably less burned out and experience more engagement on the same type of jobs as compared to self-employed workers. It is safe to assume that the individual needs for self-employed workers in regard to job demands and the accessible resources available at work have been met. For organizational workers, there lies a disparity between job demands and job resources, this could be influenced from both personal level and the management level, for example, managers can exert influence on worker's workload and offer employees informative feedback or more autonomy in their work. Employees, on the other hand, can be proactive in adjusting their job demands and resources by way of job crafting. Finally, organizations can help employees to find their optimal demands-resources balance by implementing effective interventions.

Conclusion

Our study proved JDCS model with good consistency in Chinese context. The three-way buffer hypothesis, and iso-strain jobs on burnout were supported with evidence. However, when combining group variables, the data suggested that self-employment (i.e. employment type) is the strongest predictor in predicating less burnout among other job conditions and interaction terms. The three job characteristics from JDCS model have more influential impact for organizational workers to related to burnout and engagement. On the other hand, self-employed workers in China indeed have more enthusiasm for work and less demanding jobs, they report generally lower burnout and higher work engagement, however job demands were not the attributing role to predict lower burnout, other factors important to self-employed workers are suggested in our finding. It can also be argued that JDCS model is not enough to identify and differentiate work conditions for self-employed workers, other constructs that did not include in the JDCS model can explain better on self-employed workers work-related outcomes, self-motivation for instance. Hence, future researchers are advised to assess the objective work environment of self-employed workers in China and develop more appropriate measure for more occupations specific to self-employed group in future studies.

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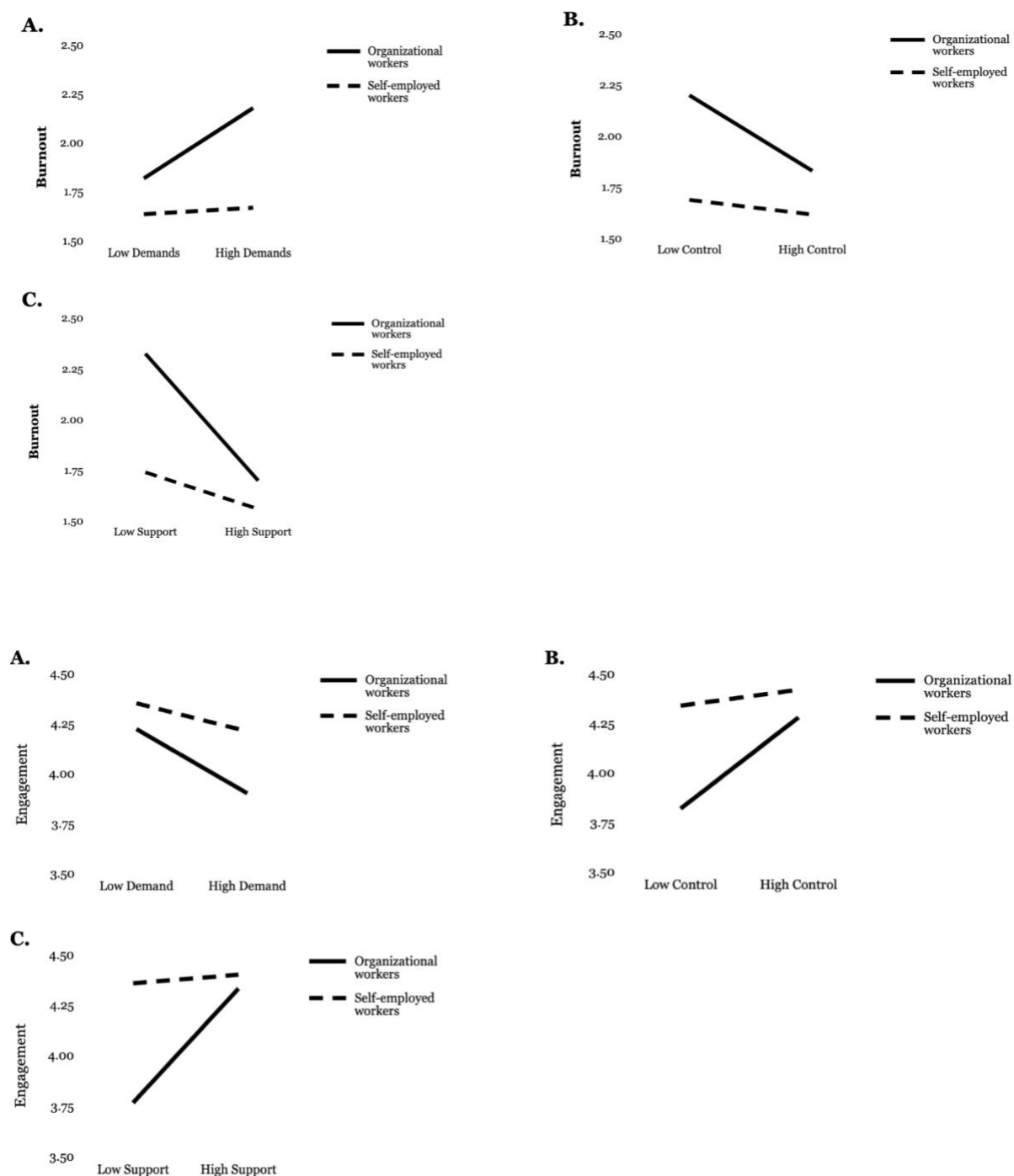
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Appendix A

Figure 6. Group studies on three predictors.



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Appendix B**Work & Well-being Survey (UWES-9) ©**

The following 9 statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, cross the '0' (zero) in the space after the statement. If you have had this feeling, indicate how often you feel it by crossing the number (from 1 to 6) that best describes how frequently you feel that way.

Almost never; Rarely; Sometimes; Often; Very often; Always

0 1 2 3 4 5 6

1. _____ At my work, I feel bursting with energy (VI-1)
2. _____ At my job, I feel strong and vigorous (VI-2)
3. _____ I am enthusiastic about my job (DE-1)
4. _____ My job inspires me (DE-2)
5. _____ When I get up in the morning, I feel like going to work (VI-3)
6. _____ I feel happy when I am working intensely (AB-1)
7. _____ I am proud on the work that I do (DE-3)
8. _____ I am immersed in my work (AB-2)
9. _____ I get carried away when I'm working (AB-3)

VI= vigor; DE = dedication; AB = absorption

1. _____ 在工作中，我感到自己迸发出能量。(VI-1) *
2. _____ 工作时，我感到自己强大并且充满活力 (VI-2) *
3. _____ 我对工作富有热情 (DE-1) *
4. _____ 工作激发了我的灵感 (DE-2) *
5. _____ 早上一起床，我就想要去工作 (VI-3) *
6. _____ 当工作紧张的时候，我会感到快乐 (AB-1) *
7. _____ 我为自己所从事的工作感到自豪 (DE-3) *
8. _____ 我沉浸于我的工作当中。(AB-2) *
9. _____ 我在工作时会达到忘我的境界 (AB-3) *

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Appendix C

MBIGS 工作倦怠标量

Appendix D

Job Content Questionnaire (JCQ) Recommended Version

Ia. Skill Discretion

"learn new things"; "repetitive work"; "requires creativity"; "high skill level"; "variety"; "develop own abilities"

Ib. Decision Authority

"allows own decisions"; "little decision freedom"; "a lot of say"

1. Decision Latitude = a weighted sum of Ia and Ib

2. Psychological Job Demands

"work fast"; "work hard"; "no excessive work"; "enough time"; "conflicting demands";

4. Physical Job Demands

"much physical effort"; "lift heavy loads"#; "rapid physical activity"*; "awkward body position"*; "awkward arm positions"*

Note. The symbol # indicates questions were added in 1985 to create the recommended version.

For scale scoring, see the Job Content Questionnaire and User's Guide.

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工作内容问卷 (JCQ)

1a. 工作技能裁量权 (35-40)

工作要求学习新东西；工作内容重复性很高；工作内容需要创造力；工作内容需要高级技能；在工作中可以做各式各样不同的事；发展自己的能力；

1b. 决策权 (41-43)

在允许自己做决定；对于如何开展工作，几乎没有决定权；很多话语权；

1c. 技能使用 44

工作要求教育程度；

2. 心理工作要求

高速工作；工作努力；无超负荷的工作；足够的时间；矛盾工作要求；超强的集中性*；

任务干扰性*；繁杂的工作；工作内容包含等待；

4. 体力工作要求

大量的体力付出；举重物；快速的体力活动；别扭的身体姿势；别扭的上肢姿势；

5. 工作不安全感

稳定的工作；工作安全感；近期裁员；未来裁员；职业发展可能性*；技能价值性；

警号# 标注的问题是在 1985 年被新加入的

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Appendix E

The social support scales comprise a total of five items that address the aspects of "affective support," "affirmation," and "help."

1. How much can you rely on the following people when work becomes difficult?
2. How much are people willing to listen to your work-related issues?
3. How much do these people support you so that you can easily do it at work?
4. How much are people willing to listen to your personal problems?
5. How easy is it to talk to these people?