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Surviving and thriving in "accelerating" academia: toward a job demands-resources model of faculty well-being

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Abstract
The managerial policies of higher education have caused important structural changes in terms of the casualization of academic labor and the acceleration of academic life, which have been detrimental to university faculty well-being. Despite the emergence of empirical studies adopting the job demands-resources (JD-R) model to examine the antecedents of university faculty well-being, more sophisticated studies focusing on variables critical for university academics in "accelerating" academia are urgently needed, given both the "super-complexity" of changing academic work environments and the heuristic nature of the JD-R model. This questionnaire investigation involved 1498 faculty members from 26 Chinese research universities and revealed that job demands have a significantly positive influence on both emotional exhaustion and organizational commitment. Moreover, the findings highlight the centrality of psychological empowerment in understanding the relations between job demands, job resources, and university faculty well-being.

Keywords Accelerating academia · Job demands · Job resources · University faculty well-being

Introduction

According to important findings from several reports of university academics working globally, they have experienced strong feelings of exhaustion, stress, anxiety, shame, and overload (Gill, 2010; Larson et al., 2019; Vostal, 2016). This gloomy scenario of university faculty well-being has been precipitated by a significant transformation of the academic work environment (McCarthy & Dragouni, 2020; Mudrak et al., 2017). Contemporary universities have been faced with an unprecedentedly challenging position, which has been manifested as escalating pressure of globalized competition and an unwavering demand for effectiveness, efficiency, and economic rationality (Acker & Webber, 2017; Sutton, 2017). The managerial policies of higher education have been prevalent in universities worldwide, with a particular focus on the introduction of ideologies, techniques, and practices used in the private sector (Lynch, 2014). Specifically, widely adopted managerial policies in higher education include a change of contemporary universities from a public academic community to corporate enterprises; a strong emphasis on product and output, such as student satisfaction, student employability, and research excellence; widespread use of disciplinary technologies to monitor and drive improved performance; and the empowerment of academic leaders as line managers combined with increased surveillance over faculty academic work (Acker & Webber, 2017; Lynch, 2014; Sutton, 2017). Consequently, these reforms have caused important structural changes in terms of the casualization of academic labor and the acceleration of academic life (Gill, 2010; Vostal, 2016). Metaphorically, university academics have been placed on a "treadmill," where they are forced to produce output more rapidly to stay in a "safe" place, that is, to maintain job security (Vostal, 2014). Emerging evidence has indicated that the experience of acceleration in academia has caused significant psychological and health problems among university academics (e.g., Gill, 2010; Hegney et al., 2020; Vostal, 2016).

University faculty well-being has been viewed as a feeling of responsibility for and commitment to the superior performance of both individuals and institutions (Hegney

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et al., 2020; Larson et al., 2019; Mudrak et al., 2017). The relationships between organizational, social, and psychological aspects of academic work life have yet to be fully examined, although the overall effects of managerial policies on university faculty well-being have been mapped out (Hegney et al., 2020; McCarthy & Dragouni, 2020). The present study aims to examine how managerial policies embedded in "accelerating" academia influence university faculty well-being by adopting the well-established theoretical framework of the job demands-resources model (JD-R model hereafter). According to the JD-R model, the psychological, physiological, social, and organizational aspects of the job, all of which will shape employee well-being, account for the composition of any work environment. Thus, it is appropriate for our study to be anchored in this comprehensive theoretical framework.

This study was located in the context of research-intensive Chinese universities. Similar to other Asian universities, they are to some extent peripheral to the global developments, but are increasingly influenced by international trends. This study involved a large-scale survey of 1498 faculty members at 26 Chinese research universities and two research questions were addressed. First, how do job demands and resources influence the well-being of Chinese university faculty members? Second, does psychological empowerment mediate the relationship between job demands and resources and university faculty well-being? This study attempted to make contributions in threefold ways. First, although empirical studies adopting the JD-R model to examine university faculty well-being have been surging, more sophisticated studies focusing on variables critical for university faculty members in "accelerating" academia are urgently needed, given both the "super-complexity" of changing academic work environments and the heuristic nature of the JD-R model (Demerouti et al., 2001). Second, the study investigated the processes and mechanisms through which the key characteristics of the academic work environment engender effects on university faculty well-being, extending knowledge about how personal resources play an active role in bridging academic work environment and university faculty well-being (Xanthopoulou et al., 2007). Third, this study adds quantitative empirical evidence about how the acceleration-focused temporal structures shape the subjective well-being of university faculty members, filling a gap in the current literature (Vostal, 2016).

Literature review

The job demands-resources model

The twenty-first century has witnessed the proliferation of the popular JD-R model in both research and practice (Schaufeli & Taris, 2014). In 2001, Demerouti et al. (2001) first proposed the JD-R model to understand the factors influencing burnout. Years after its introduction, the well-established JD-R model now incorporates job demands, job resources, psychological states, and outcomes (Schaufeli & Taris, 2014). *Job demands* are defined as "those physical, social, or organizational aspects of the job that require sustained physical or mental health and are therefore associated with certain physiological and psychological costs" (Demerouti et al., 2001, p. 501). The extant literature explores many aspects of job demands, such as overwork, job insecurity, time pressure, and work–home imbalance (Schaufeli & Taris, 2014). Recent research has emphasized the particular importance of differentiating the two types of job demands, namely challenge demands and hindrance demands (Crawford et al., 2010; LePine et al., 2005). That is, the nature of job demands depends on workers' subjective appraisal of a situation. Although both are demanding, challenge demands are viewed as obstacles that provide an opportunity for individual development and future returns, whereas hindrance demands are obstacles that impede individual development and goal attainment (LePine et al., 2005).

Job resources are defined as "those physical, psychological, social, or organizational aspects of the job that are functional in achieving work goals, reduce job demands and the associated physiological and psychological costs, or stimulate personal growth, learning, and development" (Demerouti et al., 2001, p. 501). Job resources are important in their own right in addition to being essential for employees to cope with job demands (Crawford et al., 2010). Particular attention has been devoted to a variety of job resources, across multiple levels, ranging from the organizational level (e.g., financial reward and procedural fairness) to the interpersonal level (e.g., leadership and peer support) and the task level (e.g., task significance and performance feedback).

After years of development, researchers have recently sought to integrate both negative (burnout) and positive (work engagement) components into the JD-R model (Schaufeli & Taris, 2014). The JD-R model assumes dual processes that explain the relations between work characteristics and employee well-being. First, a health impairment process refers to the process through which job demands are assumed to consume employees' mental and physical resources, thus resulting in emotional and health issues (Schaufeli & Taris, 2014). Second, the JD-R model also contains a motivational process in which job resources are important in stimulating the realization of job goals, lowering job demands, and fostering individual growth and development (Schaufeli & Taris, 2014). Considering that the JD-R model has been empirically replicated in extensive studies across occupational groups and contexts, it is evident that this model is suitable for exploring the influences of the academic work environment on job-related outcomes.

University faculty well-being in "accelerating" academia

The speeding up process of work environments has produced profound impacts on university academic work. Managerialist practices have become widely adopted to drive research productivity with consequent effects on university faculty well-being (Vostal, 2014, 2016). An extensive literature has demonstrated that managerialism at universities promotes compliance among university faculty members to meet the performance demands of externally designed indicators but that this adversely affects faculty well-being (e.g., McCarthy & Dragouni, 2020; Mudrak et al., 2017). As a complex and multifaceted construct, the definition of well-being follows two approaches, namely, the hedonic view and the eudaimonic view (Dodge et al., 2012). The former accentuates the constructs of well-being as happiness, satisfaction, positive affect, and low negative affect, whereas the latter highlights positive psychological functioning and human development. Despite a surge of interest in university faculty well-being, a consensus has not been reached on the constructs and dimensions of this concept. A large volume of studies on faculty well-being have focused on job satisfaction (Shin & Jung, 2014), job stress (Han et al., 2020; Mudrak et al., 2017), burnout (McCarthy & Dragouni, 2020), and organizational commitment (Huang & Xu, 2020). Burgeoning evidence (e.g., Gill, 2010; Vostal, 2016) indicates that university faculty members have experienced rising levels of negative affect (i.e., job stress and job insecurity) and lower levels of positive affect (i.e., job satisfaction, organizational commitment, and work engagement) in the context of the managerialist regime.

An emerging body of empirical studies has applied the JD-R model to examine university faculty well-being. These studies have examined how the demands and resources embedded in "accelerating" academia impact outcomes, such as satisfaction (Larson et al., 2019; Mudrak et al., 2017), work engagement (Han et al., 2019), and burnout (McCarthy & Dragouni, 2020; Xu, 2019). McCarthy and Dragouni (2020) explored how job demands and resources embedded in a UK business school influence faculty burnout and turnover, concluding that higher workload and work-life imbalance, as well as reduced job resources, significantly increase burnout and turnover. Mudrak et al. (2017) used a sample of 1389 Czech faculty members to develop a model of university faculty well-being, which indicated that job resources (i.e., autonomy, superior, and collegial support) facilitate job involvement and satisfaction, whereas job demands (i.e., quantitative pressure, work–family imbalance, and work precariousness) resulted in job stress. Studies set in the Chinese context have applied the JD-R model to investigate how the conflict between teaching and research affects burnout (Xu, 2019), how the job demands and resources of university teaching influence faculty well-being (Han et al., 2019), and how teaching-research conflict, teaching efficacy, and job insecurity predicted university teachers' innovative teaching (Cao et al., 2020). Although the JD-R model was introduced to examine university faculty well-being in the Chinese context, extant empirical work is limited by its reliance on a small sample, at a single university, and in a single province of China. A limited range of job demands and resources have already been investigated in the literature, and therefore, more sophisticated empirical studies focusing on critical variables for university faculty members in this highly competitive environment are urgently needed.

Job demands, job resources, and university faculty well-being

As mentioned above, academic work environments have been restructured and university academics have been increasingly subjected to intensified job demands for productivity, impact, and invisibility (Acker & Webber, 2017; Lynch, 2014). Chinese research universities, with the strategic aim of attaining world-class status before 2035, have implemented a variety of managerialist policies, including annual faculty appraisal mechanisms, triennial or quadrennial faculty assessments, and an up-or-out policy for junior faculty, the results of which will determine the ability of university faculty members to "survive and thrive" in the competitive era (Huang & Xu, 2020; Huang et al., 2021). Similar to academic profession in other countries, Chinese academics are currently facing demands of intensified competition, stringent attainment requirements, and performance targets, which result in long working hours, heavy workloads, and work–family conflict as the most frequently reported stressors (Huang & Xu, 2020; Huang et al., 2021). Correspondingly, three types of job demands were explored in this study: (a) time pressure, (b) workload, and (c) work–family conflict. Existing research has found inconsistent findings on the relationship between job demands and employee well-being within the JD-R model. Some empirical studies have indicated a positive relationship between job demands and employee well-being, whereas others have reported a negative relation. Moreover, an inverted U-shaped relation between job demands and work engagement has been documented, suggesting that moderate levels of job demands facilitate job involvement, whereas relatively low or high job demands diminish job involvement (e.g., Bakker et al., 2005). Regarding the field of higher education, emerging empirical studies on the JD-R model have reported inconsistent findings concerning the impact of working conditions on university faculty well-being.

This study examined three job resources: (a) resource supply, (b) contingent reward leadership, and (c) faculty trust. First, the Chinese government has implemented

sufficient performance-based distribution of resources for Chinese research universities benefiting from its economic prosperity. Particularly, Chinese research universities have been provided with sufficient resource packages (i.e., funding, facilities, and personnel) to assist university faculty at elite research universities to achieve research excellence (Huang & Xu, 2020). Empirical studies have indicated that resource supply has been instrumental in alleviating the negative emotions of university faculty members, as it promotes completion and performance of work and guards against negative health impacts (Bland et al., 2005). Second, the managerialist reform has caused fundamental changes in governance and leadership models at Chinese universities, which results in the prevalence of contingent reward leadership taking precedence over academic work (Huang et al., 2021). Contingent reward leadership refers to leader behaviors that highlight explicit role tasks, mission demands, and material or psychological incentives based on contractual obligations (Avolio et al., 1995). Most empirical and meta-analytic studies have indicated that contingent reward behavior has a positive effect on the attitudes and behaviors of subordinates (Judge & Piccolo, 2004). Using a sample of 1276 participants, Huang et al. (2021) reported that contingent reward leadership facilitated organizational commitment among Chinese university faculty members. Third, previous studies have indicated that faculty trust is positively related to university faculty well-being in a collegiate environment (McCarthy & Dragouni, 2020). Collegiality is a crucial factor in assuring university faculty well-being, and faculty trust plays a decisive role in facilitating collegiality (Su & Baird, 2017). Additionally, studies have found a positive relationship between interaction with colleagues (i.e., sense of community and respect) and faculty job satisfaction (McCarthy & Dragouni, 2020; Su & Baird, 2017). Overall, despite the popularity both in theory and practice, all of the above-mentioned job resources have not yet been incorporated into the JD-R model, and this will be addressed in the present study.

The mediating role of psychological empowerment

The role of personal resources in the JD-R model has become a focus, as the psychological examination of human behaviors focuses on the interplay between individual and environmental factors (e.g., Schaufeli & Taris, 2014; Xanthopoulou et al., 2007). Personal resources refer to "individuals" sense of their ability to control and impact upon their environment successfully" (Xanthopoulou et al., 2007, p. 124). Although a considerable proportion of empirical studies focus on the roles of personal resources, the results concerning its specific effects in the JD-R model remain inconsistent. This study will focus on the mediating role of psychological empowerment, as it may be effective in building university faculty's positive working attitudes (Huang et al., 2021). Spreitzer (1995) defined psychological empowerment as a psychological condition that reflects the degree to which an individual feels competent to successfully perform a task (competence), the degree to which an individual's work contributes significantly to their organization (impact), the degree to which work values or goals match with an individual's own ideals or standards (meaning), and the degree to which autonomy is enjoyed by an individual to initiate and determine work pace, processes, and content (self-determination).

Previous studies have proposed that the psychological conditions of autonomy, competence, and relatedness are essential for university faculty well-being and that these psychological conditions are influenced, in turn, by multiple job characteristics and personal resources (Larson et al., 2019). In relation to the JD-R model, prior studies have indicated that positive psychological and organizational outcomes may result from a resourceful work environment, which helps promote psychological empowerment among employees (Schaufeli & Taris, 2014; Xanthopoulou et al., 2007). Regarding motivational processes, resourceful work characteristics provide a sense of meaningfulness and significance for employees, which helps them feel psychologically empowered to activate positive working attitudes. Regarding the health impairment process, the psychological energy of an individual is believed to be depleted by job demands, which may cause emotional and wellness problems. Sparse studies have explored the positive role of psychological empowerment in the higher education context. An empirical study conducted by Huang et al. (2021) reported the mediating role of the psychological empowerment of university faculty members on the relation between contingent reward leadership and organizational commitment. Moreover, research on university faculty members within the JD-R model has been restricted to academic work characteristics, and thus, the role of the psychological empowerment of university faculty members, which may be the key factor determining their adaptation to survive in the changing work environment, has been neglected.

The following hypotheses were proposed on the basis of the above-mentioned research questions and literature review:

H1 The job demands faced by Chinese university faculty are positively related to their emotional exhaustion (H1a) and negatively related to their psychological empowerment (H1b) and organizational commitment (H1c).

H2 The job resources available to Chinese university faculty are positively related to their psychological empowerment (H2a) and organizational commitment (H2b) and negatively related to their emotional exhaustion (H2c).

H3 The psychological empowerment of Chinese university faculty has a positive relation with organizational commitment (H3a) and a negative relation with emotional exhaustion (H3b).

H4 The psychological empowerment of Chinese university faculty mediates the effects of job demands on emotional exhaustion (H4a) and organizational commitment (H4b).

H5 The psychological empowerment of Chinese university faculty mediates the effects of job resources on emotional exhaustion (H5a) and organizational commitment (H5b).

Research method

Data and samples

This study is part of a national survey on the changing academic profession at Chinese research universities. This national survey aimed to examine the academic profession across China and encompassed knowledge and data about working conditions, the academic environment, and Chinese academics' productivity and attitudes. This study focused on the effects of job resources and demands on university faculty's working attitudes. Because of the regional inequality of Chinese higher education, a stratified sampling method was adopted to identify the targeted participant universities and divide them into three subgroups according to location (in the eastern, central, or western parts of mainland China). We used a random sampling method to recruit participants within each subgroup and web-based questionnaires were sent to them between July and August, 2019. Overall, 1715 respondents fully completed the questionnaire and we identified 1498 valid responses from 26 Chinese research universities. All of the 26 participating universities were selected as "*double first-class universities"* in mainland China, which means that they are ranked as one of the most prestigious research universities by the Chinese government and have been funded by the government to pursue world-class status. Table 1 shows the participants' demographic characteristics. Altogether, the sample was representative of Chinese university faculty members working at research universities.

Table 1 Participants' demographic information ($N = 1498$)

Category	*N*	%
Gender		
Male	1162	77.57
Female	336	22.43
Rank		
Professor	603	40.25
Associate professor	601	40.12
Assistant professor	294	19.63
Geographical location		
Eastern China	707	47.2
Central China	451	30.1
Western China	340	22.7
Disciplinary field		
Sciences and engineering	984	65.69
Humanities and social sciences	514	34.31

Measures

We used a questionnaire package consisting of five scales to measure job resources, job demands, psychological empowerment, organizational commitment, and emotional exhaustion. These scales have been extensively applied in empirical studies, and their reliability and validity have been fully estimated. In this study, we translated the English version of the questionnaires to Chinese, followed by back translation and the protest procedure to ensure their accuracy and quality. In addition, we conducted a pilot study containing 215 participants to examine the measures' psychometric properties, with the results of acceptable internal reliability and construct validity.

Job demands and resources

Job demands faced by Chinese university faculty in this study were measured by stressors relevant to time pressure, workload, and work–family conflict adapted from the faculty stress questionnaire (Gmelch et al., 1984). The measurement contained five items, for example, "I don't have sufficient time to follow up the latest developments in my field," "I feel that my workload is so heavy that it is difficult to finish these tasks within normal working hours," and "My work conflicts with family, entertainment, personal interests, and other activities." The construct of job resources in this study was measured by resource supply, contingent reward leadership, and faculty trust, as adapted from the questionnaire developed by Bland et al. (2005) and Avolio et al. (1995). The measurement consisted of twelve items, and sample items included "I have access to adequate funding support," "Rewards in my department depend on my work performance," and "I feel that my colleagues are trustworthy." Participants responded on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Psychological empowerment

In this study, we adopted the four-dimensional scale of psychological empowerment (i.e., meaning, competence, self-determination, and impact) (Spreitzer, 1995). Each dimension consisted of three items. Sample items included "What

I do at work is very meaningful to me personally," "I have mastered all the skills needed to complete the job," and "I have a certain influence on the administrative affairs in my department." Participants provided their responses anchored on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Organizational commitment and emotional exhaustion

Organizational commitment was measured by a three-dimensional scale, including identification, involvement, and loyalty (Cook & Wall, 1980). Each dimension contained two items, and the sample items included "I feel proud to talk about my universities," "I enjoy my efforts at work, both for myself and the organization," and "Sometimes I really want to quit this job." Measurement of emotional exhaustion was adapted from the scale developed by Maslach and Jackson (1981). Sample items included "My job makes me feel exhausted" and "I feel drained at the end of work." Participants responded on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Control variables

Participants' demographic information (i.e., academic rank, disciplinary affiliation, and geographical location) was controlled to eliminate any possible confounding effects on the relationships between job demands and resources and university faculty well-being (Huang et al., 2021).

Data analysis

We used SPSS 24.0 and Mplus 7.0 to conduct data analysis. First, SPSS was used to examine descriptive statistics and conduct correlation analysis. Then, Mplus was used to conduct confirmatory factor analysis (CFA) to examine instrument validity. Structural equation modeling (SEM) was utilized to calculate the path coefficients of the structural model and conduct mediation analysis with the maximum likelihood estimation method. The employment of SEM in this study helps generate more accurate estimates by controlling measurement errors and conducting mediation analysis in a single analytical model (Hayes, 2009).

As suggested by Hu and Bentler (1999), a series of indices were adopted as the criteria for acceptable model fit, including Tucker–Lewis Index (TLI) (> 0.90), Comparative Fit Index (CFI) (> 0.90), Standardized Root Mean Square Residual (SRMR) (< 0.08), and Root Mean Square Error of Approximation (RMSEA) (< 0.10). Given the high sensitivity of Chi-square estimates to the sample size, Chi-square was not used as a model fit index in this study (Hu & Bentler, 1999). For the mediation analysis, a bias-corrected bootstrapping method with 5000 resamples was used to examine the significance of mediating effect and calculate the 95% confidence intervals (Hayes, 2009).

Normality, multicollinearity, and outliers were checked and did not show evidence of any violations of the preliminary assumptions. Moreover, a common method bias was checked by Harman's single factor test, which showed no effect on the data and, therefore, the results.

Reliability and construct validity

The results indicated good reliability and construct validity for all the scales of job demands, job resources, psychological empowerment, organizational commitment, and emotional exhaustion. Table 2 shows the results of Cronbach's α, CFA, and factor loadings.

Descriptive statistics and correlations

Table 3 shows descriptive statistics. The mean score of job demands (M = 3.096, SD = 0.761) was relatively high on the five-point scale, where three was considered average. The mean scores of psychological empowerment (M = 4.949, SD = 0.850), organizational commitment (M = 5.009, SD = 1.013), and emotional exhaustion (M = 3.832, SD = 1.320) were relatively high on the seven-point scale. Table 3 shows the correlation matrix of the ten factors and all the key variables were significantly correlated. All the control variables except disciplinary affiliation were significantly related to at least two key variables, and hence, participants' academic rank and geographical location were treated as control variables in the SEM analysis.

Table 2 The results of Cronbach's α, CFA, and factor loadings

	Cronbach's α	χ^2	*df*	RMSEA	CFI	TLI	SRMR	Factor loadings
Job demands	0.793	48.305	5	0.076	0.979	0.959	0.022	0.57–0.79
Job resources	0.876	338.758	41	0.070	0.974	0.965	0.036	0.56–0.98
Psychological empowerment	0.89	711.682	50	0.094	0.935	0.915	0.053	0.60–0.89
Organizational commitment	0.81	47.31	6	0.068	0.988	0.971	0.019	0.61–0.93
Emotional exhaustion	0.91	31.606	2	0.099	0.993	0.978	0.011	0.83–0.89

Table 3 Descriptive statistics and correlation matrix

	EAST	MIDD	Prof.	AP	HS	JD	JR	PE	OC	EE
EAST	1									
MIDD	− .620**	1								
Prof	− .092**	.067**	1							
AP	.017	− .006	− .672**	1						
HS	.167**	− .152**	− .112**	− .019*	1					
JD	− .034	− .004	− .095**	.086**	.045	1				
JR	.101**	− .096**	− .018	− .032	− .018	− .204**	1			
PE	.001	.001	.275**	− .107**	− .079**	− .229**	.482**	1		
OC	.040	− .039	.178**	− .095**	− .035	− .137**	.558**	.466**	1	
EE	− .054*	0.019	− .053*	0.019	.020	.536**	− .237**	− .310**	− .256**	1
Mean	.47	.30	.40	.40	.34	3.096	4.1811	4.949	5.009	3.832
SD	.499	.459	.491	.490	.475	.761	.837	.850	1.013	1.320

Dummy variables: geographical location (1 = Eastern China, 0 = Western China; 1 = Central China, 0 = Western China); professional title (1 = Professor, 0 = Assistant Professor; 1 = Associate Professor, 0 = Assistant Professor); and disciplinary field (1 = Sciences and Engineering, 0 = Humanities and Social sciences)

EAST universities located in eastern China, *MIDD* universities located in central China, *AP* Associate Professor, *HS* Humanities and Social Sciences, *JD* job demands, *JR* job resources, *PE* psychological empowerment, *OC* organizational commitment, *EE* emotional exhaustion

**$p < 0.01$

Structural model

Based on the hypothesized model, the structural model was conducted to determine the path estimates among latent variables of job demands, job resources, psychological empowerment, organizational commitment, and emotional exhaustion. The results showed a good fit of the structural model ($\chi^2 = 4025.214$, $df = 820$, $p < 0.01$; RMSEA = 0.051; CFI = 0.909; TLI = 0.901; SRMR = 0.063) (Fig. 1).

The job demands faced by Chinese university faculty members were significantly and positively related to organizational commitment ($\beta = 0.103$, $p < 0.001$) and emotional exhaustion ($\beta = 0.558$, $p < 0.001$), which supported H1a but not H1c. Job demands had a significant and negative effect on psychological empowerment ($\beta = -0.191$, $p < 0.001$), supporting H1b. The job resources available to Chinese university faculty were positively related to psychological empowerment ($\beta = 0.477$, $p < 0.001$) and organizational commitment ($\beta = 0.671$, $p < 0.001$) but had no significant negative impact on emotional exhaustion ($\beta = -0.038$, $p < 0.001$), which supports H2a and H2b but not H2c. Psychological empowerment was significantly and positively correlated with organizational commitment ($\beta = 0.201$, $p < 0.001$) and had a significant and negative effect on emotional exhaustion ($\beta = -0.202$, $p < 0.001$), supporting H3a and H3b.

Mediation analysis

The mediation analysis using bias-corrected bootstrapping with 5000 resamples was conducted to examine the mediating effects of psychological empowerment on how job demands and job resources influence emotional exhaustion and organizational commitment. As shown in Table 4, there were significant mediating effects of psychological empowerment on the relationships between job demands and emotional exhaustion (coefficient = 0.038; 95% bootstrap CI = [0.021, 0.056]; $p < 0.001$) and organizational commitment (coefficient = − 0.038; 95% bootstrap CI = [− 0.061, − 0.015]; $p < 0.001$), supporting H4a and H4b. The results also showed significant mediating effects of psychological empowerment on the relationship between job resources and emotional exhaustion (coefficient = − 0.096; 95% bootstrap CI = [− 0.134, − 0.058]; $p < 0.01$) and organizational commitment (coefficient = 0.096; 95% bootstrap CI = [0.053, 0.139]; $p < 0.01$). Thus, H5a and H5b were supported.

Discussion and conclusion

This study contributes to the empirical enquiry into the sophisticated picture of how managerialist policies and practices affect academic work life. Inspired by the extant literature (e.g., Mudrak et al., 2017), this study has applied the JD-R model to examine how job demands and resources concomitant with the "acceleration" of academic work influence university faculty well-being. Our findings add empirical evidence to the body of work showing that the increasing pressure of the "acceleration" in academia has gradually dismantled the subjective life-world of university faculty members (Vostal, 2016).

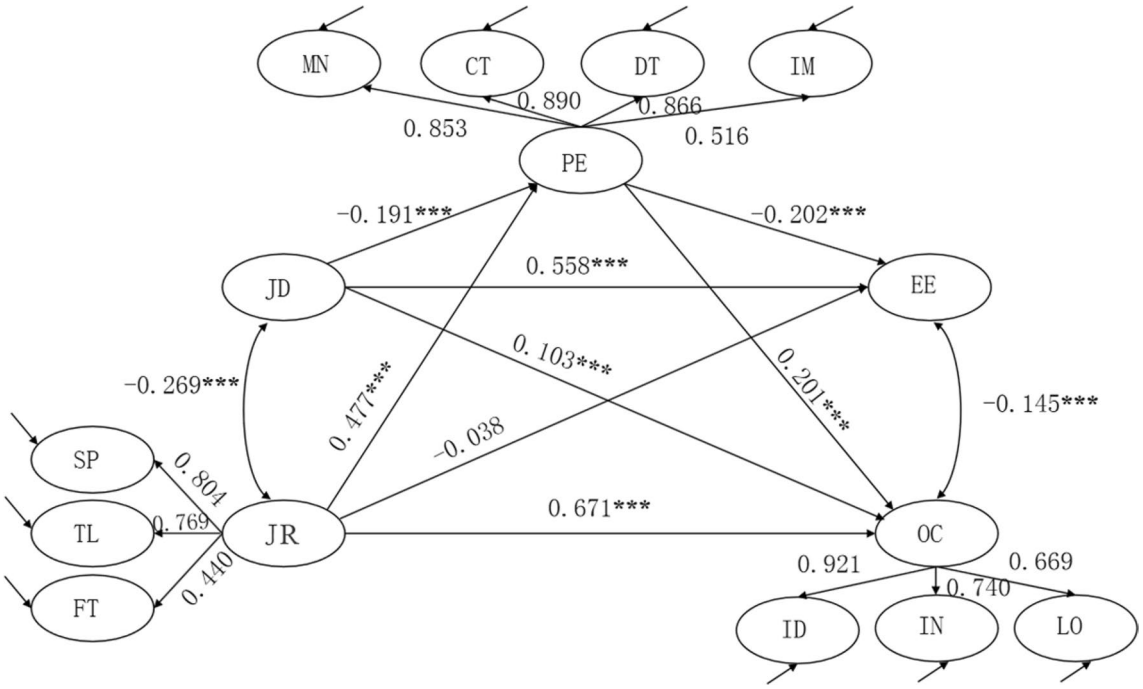

Fig. 1 The relationships between job demands and resources and university faculty well-being. *Note* Standardized coefficients are reported. ***$p < 0.001$. *JD* job demands, *JR* job resources, *SP* resource supply, *TL* contingent reward leadership, *FT* faculty trust, *PE* psychological empowerment, *MN* meaning, *CT* competence, *DT* self-determination, *IM* impact, *EE* emotional exhaustion, *OC* organizational commitment, *ID* identification, *IN* involvement, *LO* loyalty, *OC* organizational commitment, *ST* job satisfaction. Control variables (i.e., academic rank and affiliation geographical location) were controlled for in all the structural relationships among key variables

Table 4 The estimates of indirect effects of job demands and resources on organizational commitment and emotional exhaustion

Independent variable	Mediators	Dependent variables	Indirect effect		Indirect effect 95% CIs		Indirect vs total effect (%)
			Coefficient	SE	Lower	Upper	
JD	PE	EE	0.038***	0.009	0.021	0.056	6.4%
		OC	− 0.038***	0.012	− 0.061	− 0.015	60.27%
JS	PE	EE	− 0.096***	0.019	− 0.134	− 0.058	71.26%
		OC	0.096***	0.022	0.053	0.139	12.54%

Standardized coefficients are reported. Control variables (i.e., academic rank and affiliation geographical location) were controlled for in all the structural relationships among key variables

JD job demands, *JR* job resources, *PE* psychological empowerment, *EE* emotional exhaustion, *OC* organizational commitment

***$p < 0.001$

The effects of job demands and resources on university faculty well-being

Empirical evidence based on several countries suggests that academic work has become significantly stressful, exhausting and less satisfying, affecting levels of commitment in "accelerating" academia, and causing potentially detrimental consequences for the wellness and quality of human resources at universities (McCarthy & Dragouni, 2020; Mudrak et al., 2017). The results of this study reported a moderately high level of both emotional exhaustion and organizational commitment among university academics at Chinese research universities. Our findings, using a quantitative methodological approach, have corroborated the qualitative argument that the Chinese higher education landscape has imposed substantial demands on faculty members at research universities, causing excessive work pressure and emotional exhaustion (Huang & Xu, 2020). In contrast to the argument that university academics feel less committed to an "accelerating" academic environment, this study

reported a high level of organizational commitment among the participants, possibly because all participants came from elite Chinese research universities, where university prestige has been found to induce a sense of pride, commitment, and obligation to the institutions (Helm, 2013).

This study extends the empirical understanding of the interplay between academic work characteristics and university faculty well-being in the Chinese context. In line with prior studies (e.g., McCarthy & Dragouni, 2020; Mudrak et al., 2017), our results indicated that job demands had a significant and positive relation with emotional exhaustion, supporting the argument of the JD-R model that high job demands lead to health problems because of the high levels of effort required to offset the negative effects of high demands (Demerouti et al., 2001). Contrary to the negative relationship typically shown in the literature, this study showed that job demands were significantly and positively correlated with organizational commitment. Our finding substantiates Lepine et al.'s (2005) argument that job demands may be simultaneously energy depleting and stimulating, thus yielding a mix of both positive and negative consequences for university faculty well-being. Accounting for the reinforcing effect of university prestige on organizational commitment, a moderately high level of job demands may enhance organizational commitment (Helm, 2013). Overall, our study provides further empirical evidence concerning the inconsistent and complex findings on the relationship between job demands and employee well-being. Regarding the effect of job resources on university faculty well-being, the results revealed that job resources help promote the organizational commitment of university faculty members, highlighting the particular roles of resource supply, contingent reward leadership, and faculty trust. However, this study reported no significant correlation between job resources and emotional exhaustion. A possible explanation may rest in the fact that a state of emotional exhaustion tends to result from a lack of emotional resources, whereas this study measured job resources in the form of external resources, not emotional resources (Han et al., 2019). Another explanation might be that a nonlinear relationship exists between job resources and emotional exhaustion (De Jonge & Schaufeli, 1998).

Mediation of psychological empowerment as a personal resource

The study contributes to the knowledge by examining the effect of psychological empowerment in the JD-R model. The results reported that job demands had a significant negative relation with psychological empowerment, in contrast with the positive link of job resources with psychological empowerment. Furthermore, psychological empowerment has been found to be significantly positively correlated with organizational commitment and significantly negatively correlated with emotional exhaustion. These findings suggest that psychological empowerment as a form of personal resources partially or fully mediated the relationship between academic working conditions and university faculty well-being. Thus, the link between university faculty members' perceptions of the academic work environments and their well-being was partially or completely mediated by the extent to which they felt they were psychologically empowered. Although relatively little evidence exists to support the mediating effect of psychological empowerment on the relation between academic work environment and university faculty well-being, the finding confirms the important role of psychological needs in mediating the relation between job demands and resources and university faculty well-being (Larson et al., 2019).

The results confirm the motivational process of the JD-R model, which indicates that a resourceful academic work environment helps evoke a sense of meaningfulness, significance, and competence for university academics and that job resources motivate them to achieve their work goals, reducing job demands, alleviating emotional exhaustion, and fostering organizational commitment (Crawford et al., 2010; Demerouti et al., 2001). Moreover, the results echoed the health impairment process of the JD-R model, where higher job demands deplete the mental energy of university academics and ultimately lead to emotional exhaustion (Crawford et al., 2010; Demerouti et al., 2001). Particularly, the results extend current knowledge that the negative impacts of job demands can be offset by creating a psychological state of empowerment, which will help reduce emotional exhaustion among university faculty members and foster their organizational commitment.

Limitation and implication

This study pertinently attempts to explore how changing academic work environments under the managerialist regime influence university faculty well-being with a particular focus on the mediating role of psychological empowerment in the Chinese research university context. Although the study uncovered some significant findings, there are nevertheless some limitations for informing further research. First, academic work environments and faculty well-being have changed over time, and therefore, further studies could employ the method of experimental and longitudinal designs to extend the present cross-sectional findings. Second, this study confirms the role of psychological empowerment as a mediator in the relationship between academic work environment and university well-being. Accordingly, future studies could consider other potential mechanisms that may bridge these variables. Third, a multigroup SEM analysis

could be adopted to explore differences in structural models across different groups (e.g., gender differences). Finally, it might be helpful for future studies to add a more sophisticated measurement of job demands to further understand the differential effects of this concept.

Notwithstanding these limitations, this study has implications for promoting university faculty well-being in mainland China and similar contexts. Contemporary universities and university academics have been thrust into an "accelerated" era, which has led to increased workloads, heightened pressure, fierce competition, reduced autonomy, greater job insecurity, and ultimately, greater fatigue, exhaustion, and alienation (Larson et al., 2019; Vostal, 2016). Given the irreversible trend of high job demands faced by university academics, creating resourceful work environments to alleviate the negative effects of high job demands on university faculty well-being is critically important for higher education institutions. The study reminds us of the importance of efforts aimed at increasing the availability of job resources for university academics at the organizational, collegiate, and leadership levels that contribute to their psychological empowerment and organizational commitment. In line with the managerialism of higher education globally, academic leaders at research universities should adopt contingent reward leadership strategies, such as clarifying role and task requirements and providing material and psychological rewards contingent on the fulfillment of contractual obligations, which have been widely demonstrated as effective leadership practices for encouraging organizational commitment (Huang et al., 2021). Moreover, a collegiate work environment based on faculty trust should be enhanced. Presently, university academics have reported a lack of collegiality, and thus, academic leaders should bear more responsibilities to foster a trusting environment, in which faculty members are encouraged to show trust to one another and work collaboratively for the good of the knowledge and the discipline as a whole (Su & Baird, 2017). Finally, the study reminds us of the crucial role of psychological empowerment. Academic leaders and university administrators should design policies, practices, and structures that enhance a sense of meaningfulness, competence, and self-determination experienced by faculty members. Particularly, it is more poignant for university leaders and administrators to provide opportunities for university faculty members to participate in the decision-making process in various aspects of faculty affairs, which would lead to an enhanced sense of psychological empowerment.

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Declarations

Conflict of interest No potential conflict of interest was reported by the authors.

Ethical approval I confirm that all the subjects have provided appropriate informed consent and details on how this was obtained are detailed in the manuscript.

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