




ARTICLE



<https://doi.org/10.1057/s41599-023-02371-w>

OPEN

# Modeling the significance of work culture on burnout, satisfaction, and psychological distress among the Gen-Z workforce in an emerging country

Xuelin Chen<sup>1,2</sup>, Mohammad Masukujjaman<sup>3</sup>, Abdullah Al Mamun<sup>2</sup> <sup>✉</sup>, Jingzu Gao<sup>2</sup> & Zafir Khan Mohamed Makhbul<sup>2</sup>

Human resources are widely recognized as critical factors for promoting sustainable development in organizations. However, the evolving workplace landscape and uncertainties pose significant challenges to Gen Z workers in China, leading to increased psychological distress and decreased performance. This study investigates the effects of 996 work culture, work overload, perceived career development opportunities, and perceived pay for performance on the psychological distress experienced by Chinese Gen Z workers. Using a quantitative and cross-sectional approach, we obtained 676 responses from Chinese Gen Z workers. We also utilized partial least squares structural equation modeling to examine and forecast the extent of the impact of the independent variables. The empirical findings reveal that 996 work culture and work overload indirectly influence the psychological distress of Gen Z workers in China via job burnout and job satisfaction; whereas perceived career development opportunities and perceived pay for performance indirectly influence their psychological distress via job satisfaction. Our research extends the existing literature by providing insights into the complex associations between various work-related factors (particularly 996 work culture) and psychological distress among Gen Z workers in China. Regarding policy implications, this study emphasizes the significance of considering the mental health of young employees as a crucial aspect of organizational management and suggests practical measures that organizations can adopt to ensure long-term psychological well-being and workforce engagement.

<sup>1</sup>School of Business, Jishou University, 416000 Jishou City, Hunan, China. <sup>2</sup>UKM—Graduate School of Business, Universiti Kebangsaan Malaysia, UKM, Bangi 43600 Selangor, Malaysia. <sup>3</sup>Faculty of Business and Professional Studies, Management and Science University, 40100 Shah Alam, Malaysia.  
✉email: [almamun@ukm.edu.my](mailto:almamun@ukm.edu.my)

## Introduction

Human resources are a critical factor for achieving sustainable development in organizations. Without a competent and skilled workforce, companies would struggle to compete effectively in the existing and emerging markets. Nevertheless, the human element in organizations poses a challenge, as employees are susceptible to errors and variations in performance. Factors, such as emotional state, discomfort, and discouragement, may contribute to suboptimal job performance (Tarigan et al., 2022). Employees are increasingly exposed to multiple work-related demands, long working hours, and high workloads, placing them at a greater risk of psychological distress and lower performance levels (Ghawadra et al., 2019). Psychological distress is an essential marker of psychological health and manifests as a range of symptoms, ranging from anxiety to depression and resulting in emotional distress (Ridner, 2004). The psychological distress of employees and its impact on the productivity and cost of enterprises are crucial issues in human resource management, given that employees with good mental health tend to experience less stress and anxiety, less sick leave, higher work efficiency, and higher work engagement (Kunte, 2016). In other words, a healthy workforce can result in increased productivity, engagement, and efficiency, ultimately benefiting both employees and the organization.

Gen Z denotes the demographic group that succeeded the millennial generation, encompassing individuals born between 1995 and 2012 (Gabrielova & Buchko, 2021). The older workforce, exemplified by generations such as Gen X and Baby Boomers, possesses more traditional values, such as contributing to the country and supporting the family, but the younger workforce (i.e., Gen-Z) emphasizes more worldly values and embraces self-development as the central motivator for their work endeavors (Lyons & Kuron, 2014; Chen et al., 2023). Gen Z workers put more value on unique attributes that can in turn influence their job satisfaction, such as work-life balance, the flexibility of work hours (Waworuntu et al., 2022), personal growth opportunities (Barhate & Dirani, 2022), and compensation levels (Chen et al., 2023). Recent research has shown that Gen Z workers are more susceptible to mental health issues than previous generations (Cohen et al., 2021) and exhibit the highest levels of psychological distress (Schroth, 2019). Moreover, the National Mental Health Development Report of China (2019–2020) indicated that the mental health index of individuals aged 18–25 years is lower than that of other age groups. Additionally, according to the Psychological Industry Annual Report (2021), young individuals are highly susceptible to psychological problems, with almost 70% experiencing varying degrees of anxiety. Only 14.87% of young people reported no negative

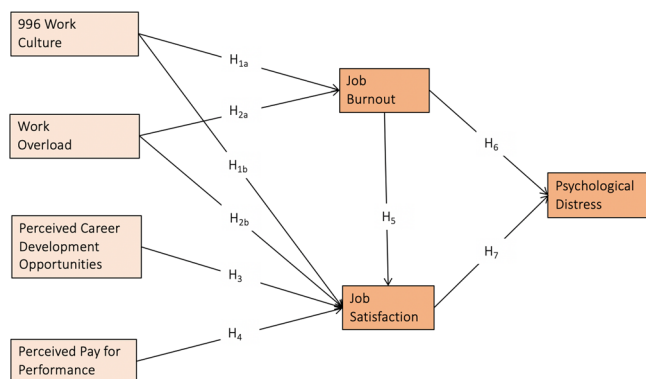
psychological state, while 42.21% admitted to experiencing more than mild adverse reactions. In other words, Gen Z workers may be more prone to psychological problems than workers from other age groups. Given that China has become the most populous country worldwide and it has the largest young workforce, it is crucial to investigate and demonstrate the development of psychological distress among Chinese Gen Z workers.

Understanding the factors that contribute to psychological distress is crucial for developing effective preventive strategies and measures for managers. In contemporary organizations, long working hours have become increasingly prevalent. The prevailing overtime culture in China, known as the 996 work culture, and its impact have drawn significant attention from researchers around the world in recent years. The 996 work culture is widely adopted among firms in China, where a job mandates a work schedule from 9 a.m. to 9 p.m., 6 days a week. This means working 72 h a week, which is much higher than the standard workweek in most countries, which is usually approximately 40 h. Previous studies have endorsed 996 work culture as a way to boost productivity and compete with developed companies (Yang et al., 2021). However, 996 work culture has also been criticized for promoting a work-life imbalance and causing health problems for employees (Wang, 2020; Yang, 2019). There is still no unified conclusion on whether the advantages outweigh the disadvantages of the 996 work culture.

Recently, the 996 work culture has emerged as a prevailing corporate culture in several Chinese firms, and it is frequently obligatory for their staff (Xiao et al., 2020). Employees in organizations that adhere to the 996 work culture often experience work overload without corresponding incentives, such as satisfying perceived career development opportunities or perceived pay for performance. These conflicts tend to exacerbate the psychological problems faced by Gen Z workers. Thus, we argue that such a culture may have detrimental consequences on the daily psychological well-being of the staff belonging to Gen Z. Prior research has primarily focused on protecting the rights and interests of staff in organizations that adopted the 996 work culture (Wang, 2020; Yang et al., 2021), whereas studies on the psychological health of employees working under the 996 work culture are limited. Hence, it remains unclear whether the 996 work culture, along with its associated excess workload and corresponding incentives, is the main reason for the psychological distress experienced by Gen Z workers.

To fill these gaps, this study develops a conceptual framework based on the job demand-resources model (JD-R). Referring to the JD-R model, job resources are helpful for stimulating positive work attitudes, thus reducing negative outcomes (e.g., depression and psychological strain) (Schaufeli & Taris, 2014); conversely, work-related stressors such as excessive workload can escalate the risk of burnout, resulting in unfavorable consequences (Schaufeli et al., 2009). In particular, this study argues that 996 work culture and work overload are positively related to job burnout, and subsequently contribute to psychological distress among Gen Z workers. Furthermore, we predict that perceived career development opportunities and perceived pay for performance would be positively influenced by job satisfaction, while job satisfaction would be negatively associated with psychological distress. The proposed model is illustrated in Fig. 1.

Accordingly, this study makes several contributions to the existing literature. First, it extends the growing body of literature on JD-R theory, which highlights the need to balance job demands and resources to reduce employee burnout and distress by examining the relationships of the 996 work culture and work overload with job burnout and psychological distress among Gen Z workers. Second, it amplifies the existing literature on 996 work



**Fig. 1 Research framework.** All associations that were hypothesized and tested are displayed in Fig. 1.

culture by showing its negative impact on employee well-being. The findings of this study underscore the importance of addressing 996 work culture in organizations to promote employee mental health. Additionally, this study highlights the positive impact of perceived career development opportunities and perceived pay for performance on job satisfaction, thus contributing to the literature on work motivation and job satisfaction.

## Literature review

**Theory foundation.** The JD-R model (Demerouti et al., 2001) has gained widespread recognition among researchers as it helps comprehend specific workplace features that can lead to positive or negative organizational results. This model identifies two distinct variables in any job setting: job demands and resources (Bakker et al., 2003). Job resources are the physical, social, or organizational assets that a job provides for individual employees. On the one hand, job demands refer to the physical, psychological, social, and organizational aspects of a job that require sustained physical, cognitive, or emotional efforts and may lead to stress (Bakker & Demerouti, 2007). Thus, given the aforementioned distressing nature of 996 work culture and work overload, they can be conceptualized as job demands. On the other hand, perceived career development opportunities and perceived pay for performance offered by organizations can be regarded as job resources, as they are considered any element of a job that can decrease the demands and/or the associated psychological and physiological expenses of those demands. A revised version of the JD-R model by Schaufeli and Bakker (2004) includes burnout and well-being as mediators in the link between job demands and negative outcomes (e.g., psychological distress), job resources, and positive results (e.g., perceived health).

## Development of hypotheses

**996 work culture.** 996 work culture, based on a dominant and restrictive hierarchy, is a microcosm of the occurrence of overtime WC in China, and employees are mandated to work for 12 h a day, 6 days a week, which includes working during the 9 a.m.-9 p.m. period. Given that 996 work culture is a type of job demand, employees who work under the 996 work regimes need to spend more continuous physical, cognitive, or emotional effort to maintain their work performance. The JD-R model postulates that high job demands necessitate additional influence to attain work objectives and avoid reduced performance, resulting in physical and psychological outcomes such as fatigue and irritability (Schaufeli & Taris, 2014).

Lee and Ashforth (1996) define burnout as a multifaceted phenomenon involving emotional exhaustion, physical fatigue, and mental weariness resulting from prolonged exposure to stress. Sufiyati and Cokki (2021) suggest that burnout can be caused by several factors, including overtime work and working on holidays, excessive work pressure to meet deadlines, and changes in work. The negative effects of overtime work on an individual's psychological well-being can be amplified at the organizational level, where people are inclined to share and reflect on their negative experiences (Beckers et al., 2008). Therefore, it is rational to infer that, as a job demand, overtime work can lead to emotional exhaustion and mental weariness, which are significant indicators of burnout. Furthermore, overtime work has been associated with decreased employee satisfaction and productivity. Job demands, such as long working hours, decrease employees' job satisfaction (Yeh, 2015). Consistent with this notion, Ko and Choi (2019) propose that a high level of overtime work required by a firm may lead to long working hours for employees, which can result in work fatigue and a subsequent decrease in job satisfaction. Hence, the following hypotheses are proposed:

*H<sub>1a</sub>: 996 work culture has positive influence on job burnout.*

*H<sub>1b</sub>: 996 work culture has negative influence on job satisfaction.*

**Work overload.** Work overload is a circumstance in which someone has an excessive workload that exceeds their capabilities and available time (Kimura et al., 2018). Previous studies investigating employees' working conditions have shown that a high workload and work pressure can lead to burnout (Pérez, 2013; Yeh, 2015). Pratiwi et al. (2019) also suggest that performing too many tasks in a short time or accepting a job that is too challenging can lead to physical and mental exhaustion, and ultimately, burnout. These findings are consistent with the JD-R model, which suggests that job demands, such as work overload, heavy lifting, interpersonal conflict, and job insecurity, can contribute to burnout (Schaufeli & Taris, 2014). Moreover, Gen Z places great value on work-life balance (Sánchez-Hernández et al., 2019). In other words, they enjoy free time for themselves; if Gen Z workers have excessive workload, they tend to experience job dissatisfaction. Anasi (2020) argues that employers should assign moderately demanding tasks, as both work overload and underload could cause job dissatisfaction. Similarly, Nirel et al. (2008) suggest that employee dissatisfaction at work is caused by both work overload and poor health. In line with this, Yeh (2015) points out that job demands, such as work overload and long work hours, increase the likelihood of experiencing dissatisfaction at work. Thus, based on previous findings, the following hypotheses are proposed:

*H<sub>2a</sub>: Work overload is positively linked to job burnout.*

*H<sub>2b</sub>: Work overload is negatively linked to job satisfaction.*

**Perceived career development opportunity.** Perceived career development opportunity refers to employees' perceptions of the availability of work assignments and job opportunities that align with their career interests and goals within their current organization (Kraimer et al., 2011). Such opportunities are crucial for enhancing employee work attitudes and retention and can be provided within suitable career structures (Duffield et al., 2014). Employees who receive training for career advancement and improvement, and who have high levels of perceived career development opportunity may feel valued and respected (Al Bastaki et al., 2021). Consistent with the JD-R model, Schaufeli and Taris (2014) suggest that employees with access to job resources tend to be more engaged and satisfied at work. Moreover, Coetzee and Bester (2021) opine that career development opportunities play a significant role in increasing employees' emotional commitment by fostering feelings of professional satisfaction and goal achievement. Supporting this statement, Muleya et al. (2022) observe that employee attitudes and behaviors are positively influenced by the presence of perceived career development opportunities within an organization. Thus, the following hypothesis is proposed:

*H<sub>3</sub>: Perceived career development opportunity is positively linked to job satisfaction.*

**Perceived pay for performance.** Pay for performance is characterized as a compensation program that delivers pay based on outputs (e.g., sales volume) or behavioral evaluations (Gerhart & Fang, 2015). Prior studies have shown that employees' perceived pay for performance affects their attitudes towards work. For example, Ren et al. (2017) emphasize the necessity of analyzing the effects of pay against performance on personnels' workplace attitudes and find that pay for performance and pay-level satisfaction are key antecedents of employee attitudes and behaviors. Furthermore, Ogbonnaya et al. (2017) indicate that performance-related pay positively influences workers' attitudes, but part of this positive impact is offset by work intensification. According to

Bae (2021), there is a significant positive link between the perceived fairness of performance evaluations and pay satisfaction, organizational satisfaction, and job satisfaction. Yasin et al. (2020) argue that job satisfaction is influenced by both intrinsic predictors (such as career growth and achievement) and extrinsic factors (such as salary, fringe benefits, and work conditions). A younger workforce tends to place a higher value on fairness and justice (Zhu et al., 2015). Therefore, it is plausible that Gen Z workers' perceptions of whether their compensation is based on their performance can affect their work attitudes, especially job satisfaction. Hence, this study proposes the following hypothesis:

*H<sub>4</sub>: Perceived pay for performance is positively linked to job satisfaction.*

**Job burnout.** Schaufeli and Taris (2004) present a revised JD-R model in which high job demands and poor job resources are built into burnout, which in turn leads to various health issues, including but not limited to depression, cardiovascular diseases, and psychosomatic complaints. Additionally, consistent with research on burnout, there is evidence suggesting that burnout has a significant negative impact on employees' physical and mental health, as well as their overall well-being (West et al., 2018; Faragher et al., 2005). When there is a significant disparity between objective resources and subjective evaluations in the workplace, emotional exhaustion is more likely to be exacerbated, ultimately contributing to burnout among employees, which can affect individuals' psychological health (Ren et al., 2022). Furthermore, employees who experience burnout are more inclined to express job dissatisfaction and contemplate leaving their jobs (Lu & Gursoy, 2016). According to Matin et al. (2012), staff experiencing job burnout are less devoted to their employers, which reduces job satisfaction. The construct of job satisfaction is influenced by employees' job-related attitudes and their emotional experiences in the workplace (Politis et al., 2015). It is plausible that when employees experience emotional exhaustion, physical fatigue, and mental tiredness at work, their attitudes towards work and mental status can be influenced. Based on these findings, the following hypotheses are proposed:

*H<sub>5</sub>: Job burnout has negative influence on job satisfaction.*

*H<sub>6</sub>: Job burnout has positive influence on psychological distress.*

**Job satisfaction.** According to Politis et al. (2015), job satisfaction measures how content employees are with their jobs; this is a greatly subjective phenomenon and is, in turn, intricate and multifaceted. The previous literature has demonstrated that job satisfaction is not only a consequence of occupational stress but also a potential precursor to worker health and other organizational outcomes (Feng et al., 2018). The previous studies suggest that work satisfaction is a significant factor in several health outcomes, such as depression, sleep disorders, headaches, and gastro-intestinal problems (Allan et al., 2018; Aazami et al., 2015). Moreover, staff with higher job satisfaction levels are more likely to report better emotional well-being (Park et al., 2021). Ghawadra et al. (2019), in their study, find that young nurses have high levels of stress, anxiety, and depression, which are significantly associated with low job satisfaction. Ren et al. (2022) point out that when individuals experience dissatisfaction with certain aspects of their work, they are more likely to develop a negative attitude towards their job, which can subsequently lead to the onset of psychological health problems. Based on the results of these studies, a reasonable inference can be drawn that a correlation exists between job satisfaction and psychological distress prediction. Hence, the following hypothesis is proposed:

*H<sub>7</sub>: Job satisfaction has negative influence on psychological distress.*

## Research methodology

**Data collection.** A quantitative method was employed to assess the links between the constructs, and the data were collected through a cross-sectional study. The G-Power software was used to estimate the necessary sample size for this study. To perform a meaningful analysis of the model with six predictors, this study needed a sample size of at least 146, based on an a priori test that factored in a power of 0.95 and an effect size of 0.15 (Faul et al., 2007). Reinartz et al. (2009) suggest that a minimum sample of 100 is necessary when using partial least squares structural equation modeling (PLS-SEM). This study used a convenience sampling strategy to gather data. Specifically, an online survey was administered using WJX (<http://www.wjx.cn/>), which is a user-friendly and effective tool. The survey included several qualifying questions to screen potential participants. All participants signed an informed consent form, prior to answering the formal questionnaire. The consent form outlined the purpose of data collection, the intended use of the data, and the participants' options to withdraw from the research at any particular time. To prevent possible problems of multicollinearity, this study increased the sample size prior to one-off data collection (Midi et al., 2010). Finally, 676 valid responses were obtained.

**Instrument.** Overall, the scale for this study was developed based on the previous literature, and the survey questions were phrased in a clear and neutral language, ensuring that respondents could comprehend them effortlessly. The English versions of the items presented in Supplementary Material S1. Survey Questionnaire. To examine the correctness and validity of the questionnaire items, and to guarantee the equivalence of the measures in the English and Chinese versions, we invited two authorized experts to assess the final iteration of the created measure. Overall, the survey participants were requested to rate the variables on a 5-point Likert scale (1–5, from “strongly disagree” to “strongly agree”). The research data was submitted as Supplementary Material S2. Dataset.

**Common method variance (CMV).** To address the potential issue of CMV, the participants were guaranteed anonymity and informed that there were no correct or incorrect answers (Podsakoff et al., 2003). The study also utilized Harman's one-factor test, which extracts one common factor from all principal constructs and explains a variance of less than 50%, revealing that one component accounts for 37.19% of the variance, suggesting that CMV was not a significant issue. Additionally, the full collinearity test recommended by Kock (2015) was conducted to assess CMV, and the variance inflation factor values for 996 work culture (1.501), work overload (1.371), perceived career development opportunities (1.840), perceived pay for performance (1.660), job burnout (1.738), job satisfaction (1.628), and psychological distress (2.533) were all less than 3.3, indicating no evidence of multicollinearity in the data.

**Data analysis method.** PLS-SEM is a technique that identifies the causal relationship between constructs and maximizes the variance explained in dependent latent constructs (Hair et al., 2011). For this study, the multivariate normality of the data was measured using an online Web Power tool. Mardia's multivariate skewness, kurtosis coefficients, and *p*-values were calculated using this tool. The results of the multivariate normality test indicate that the *p*-values for Mardia's multivariate skewness and kurtosis were <0.05, indicating multivariate non-normality. As this is an exploratory study with non-normality issues, a variance-based PLS-SEM estimation is employed. The PLS-SEM analysis included internal consistency reliability, indicator reliability,

**Table 1 Demographic characteristics.**

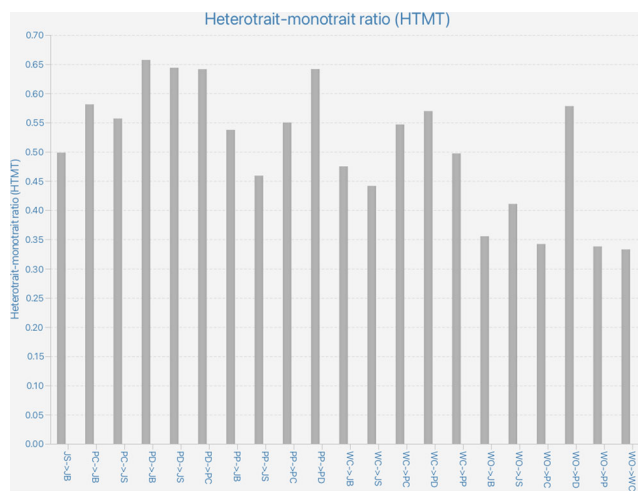
	N	%		N	%
<i>Gender</i>			<i>Education</i>		
Male	357	52.8	Secondary school certificate	53	7.8
Female	319	47.2	Diploma/technical certificate	230	34.0
Total	676	100.0	Bachelor degree or equivalent	284	42.0
<i>Age group</i>			Master's degree	99	14.6
18–22 years	132	19.5	Doctoral degree	10	1.5
22–25 years	326	48.2	Total	676	100.0
26–30 years	218	32.2	<i>Tenure</i>		
Total	676	100.0	Less than 2 years	328	48.5
<i>Types of organization</i>			2–5 years	284	42.0
IT	135	20.0	6–8 years	56	8.3
Finance	102	15.1	Above 8 years	8	1.2
Construction	166	24.6	Total	676	100.0
Media	136	20.1	<i>Average monthly income</i>		
Education	127	18.8	Less than CNY 5000	55	8.1
Others	10	1.5	CNY5000–CNY8000	298	44.1
Total	676	100.0	CNY8001–CNY11000	260	38.5
<i>Annual bonus</i>			CNY11001–CNY14000	57	8.4
Less than CNY10000	208	30.8	More than CNY14000	6	0.9
CNY10001–CNY30000	350	51.8	Total	676	100.0
CNY30001–CNY50000	83	12.3			
More than CNY50000	35	5.2			
Total	676	100.0			

discriminant validity, convergent validity, effect size, and path coefficient estimates, as suggested by Hair et al. (2013).

**Findings**

Table 1 describes the characteristics of the 676 individuals in terms of age, gender, education, tenure, average monthly income, types of organization, and annual bonus. The sample consisted of 357 (52.8%) males and 319 (47.2%) females. Among them, 53 (7.8%) had a secondary school certificate, 230 (34.0%) had a diploma/technical certificate, 284 (42.0%) had a bachelor's degree or equivalent, 99 (14.6%) had a master's degree, and 10 (1.5%) had a doctoral degree. Most participants aged between 22–25 years (326, 48.2%), followed by 26–30 years (218, 32.2%) and 18–22 years (132, 19.5%). Most participants had worked for less than two years (328, 48.5%), followed by 2–5 years (284, 42.0%), 6–8 years (56, 8.3%), and more than eight years (8, 1.2%). The sample consisted of individuals working in different types of organizations, including IT (135, 20.0%), finance (102, 15.1%), construction (166, 24.6%), media (136, 20.1%), education (127, 18.8%), and others (10, 1.5%). Regarding the average monthly income, most participants earned CNY5000–CNY8000 (298, 44.1%), followed by CNY8001–CNY11000 (260, 38.5%), less than CNY 5000 (55, 8.1%), CNY11001–CNY14000 (57, 8.4%), and more than CNY14000 (6, 0.9%). Regarding the annual bonus, most participants earned CNY10001–CNY30000 (350, 51.8%), followed by less than CNY10000 (208, 30.8%), CNY30001–CNY50000 (83, 12.3%), and more than CNY50000 (35, 5.2%).

**Reliability and validity.** Before examining the external measurement model, ensuring the reliability and validity of the questionnaire is crucial (Hair et al., 2017). Descriptive statistics, including the number of items, mean, and standard deviation of all variables, are presented in Table 2. To accurately assess internal consistency, researchers often use Cronbach's alpha, composite reliability, and Dijkstra–Hensel's rho (Hair et al., 2021). In this study, all variables achieved a value of over 0.85,



**Fig. 2 Heterotrait-monotrait (HTMT) ratio.** Discriminant validity is evaluated by using of the Heterotrait-monotrait (HTMT) ratio.

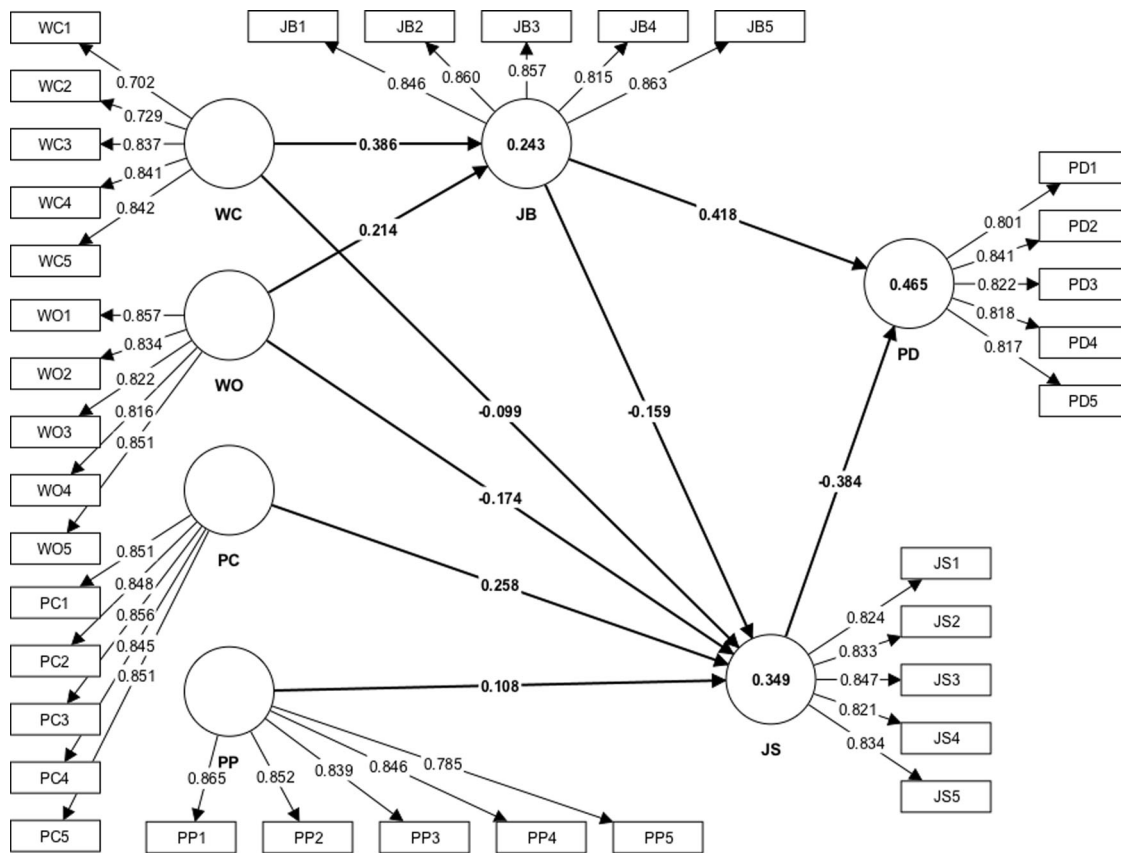
indicating high internal consistency and reliability using Cronbach's alpha. Composite reliability, a different measure of internal consistency reliability, also demonstrated that the items of all constructs were reliable, with values higher than 0.89 (Hair et al., 2011). The Dijkstra–Hensel's rho values for all constructs were greater than 0.89, further supporting the internal consistency of the questionnaire. Additionally, the average variance extracted (AVE) values for all constructs were greater than 0.7, indicating adequate convergent validity. The variance inflation factor values for all variables were below 2, indicating that no multicollinearity was detected in the study.

To assess discriminant validity, researchers commonly use the Heterotrait-monotrait (HTMT) ratio, the Fornell-Larcker criterion, and a cross-loading table. In Fig. 2, the HTMT ratio examines the correlation between variables while accounting for the deattenuated

**Table 2 Reliability and validity.**

Variables	No. of items	Mean	Standard deviation	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted	Variance inflation factors
WO	5	3.978	0.803	0.893	0.904	0.921	0.699	1.187
WC	5	3.681	0.886	0.855	0.890	0.894	0.628	1.519
PC	5	2.267	0.947	0.904	0.905	0.929	0.723	1.701
PP	5	2.264	0.871	0.894	0.898	0.922	0.702	1.552
JB	5	3.862	0.889	0.902	0.905	0.928	0.719	1.605
JS	5	2.568	0.999	0.889	0.889	0.918	0.692	1.252
PD	5	4.015	0.829	0.878	0.882	0.911	0.673	

WC 996 Work Culture, WO work overload, PC perceived career development opportunities, PP perceived pay for performance, JB job burnout, JS job satisfaction, PD psychological distress.



**Fig. 3 Measurement model.** The measurement model was constructed and the findings were obtained using the SmartPLS (Version 4) software.

variable score. As shown in Fig. 2, all the recorded HTMT values were below the threshold value of 0.9, indicating effective distinctions between the constructs. These results suggest that all study constructs possess sufficient discriminant validity (Fig. 3).

The Fornell-Larcker criterion values indicate that the square root value of the AVE of each latent variable (diagonal values) surpassed the correlations of the other items (Fornell & Larcker, 1981). This finding suggests that all study constructs achieved sufficient discriminant validity, as shown in Table 3. Additionally, all loading values exceeded 0.5, which was higher than the cross-loading scores, further supporting the discriminant validity of all items in the study (Hair et al., 2017).

**Hypotheses testing.** The  $f^2$  test is a measure of the effect size for each independent variable in the model. Table 4 shows that the  $f^2$  test results for the various independent variables range from 0.010 to

0.260, indicating varying degrees of effect sizes. Specifically, the variables 996 work culture → job burnout, job burnout → psychological distress, and job satisfaction → psychological distress have the largest effect sizes (i.e.,  $f^2$  values of 0.180, 0.260, and 0.220, respectively), indicating that these variables have the strongest influence on the dependent variables. Overall, the  $f^2$  test results suggest that the independent variables in the model are significantly linked to the dependent variables and that their accumulation explains a greater proportion of the variance in the dependent variables.

$R^2$  is a metric used to evaluate the percentage of the total variability in the dependent variable, which can be described by the independent variables included in the model. The  $R^2$  values for various endogenous variables ranged from 0.243 to 0.465 (Table 4). Specifically, the variables 996 work culture and work overload → job burnout, job burnout and job satisfaction → psychological distress, and 996 work culture, work overload, perceived career development opportunities, perceived pay for

**Table 3 Discriminant validity.**

	WO	WC	PC	PP	JB	JS	PD
WO1	0.857	0.302	-0.336	-0.307	0.352	-0.347	0.465
WO2	0.834	0.231	-0.237	-0.246	0.259	-0.299	0.412
WO3	0.822	0.219	-0.223	-0.184	0.249	-0.274	0.407
WO4	0.816	0.207	-0.200	-0.251	0.180	-0.290	0.402
WO5	0.851	0.258	-0.289	-0.269	0.296	-0.322	0.451
WC1	0.207	0.702	-0.236	-0.253	0.213	-0.230	0.282
WC2	0.221	0.729	-0.297	-0.259	0.193	-0.233	0.312
WC3	0.288	0.837	-0.436	-0.404	0.399	-0.348	0.447
WC4	0.222	0.841	-0.445	-0.378	0.401	-0.343	0.451
WC5	0.234	0.842	-0.499	-0.445	0.458	-0.381	0.479
PC1	-0.256	-0.450	0.851	0.420	-0.463	0.396	-0.497
PC2	-0.278	-0.428	0.848	0.420	-0.448	0.429	-0.480
PC3	-0.256	-0.425	0.856	0.405	-0.450	0.434	-0.485
PC4	-0.314	-0.445	0.845	0.432	-0.453	0.430	-0.499
PC5	-0.234	-0.410	0.851	0.441	-0.427	0.435	-0.484
PP1	-0.215	-0.398	0.410	0.865	-0.395	0.343	-0.467
PP2	-0.270	-0.413	0.429	0.852	-0.423	0.373	-0.511
PP3	-0.234	-0.406	0.439	0.839	-0.391	0.351	-0.469
PP4	-0.272	-0.379	0.471	0.846	-0.464	0.360	-0.495
PP5	-0.290	-0.309	0.324	0.785	-0.352	0.290	-0.451
JB1	0.237	0.380	-0.451	-0.415	0.846	-0.362	0.496
JB2	0.293	0.391	-0.440	-0.396	0.860	-0.391	0.506
JB3	0.276	0.383	-0.497	-0.429	0.857	-0.400	0.494
JB4	0.279	0.337	-0.361	-0.381	0.815	-0.336	0.463
JB5	0.303	0.409	-0.476	-0.435	0.863	-0.408	0.537
JS1	-0.318	-0.368	0.431	0.363	-0.383	0.824	-0.474
JS2	-0.286	-0.309	0.415	0.332	-0.336	0.833	-0.459
JS3	-0.283	-0.331	0.420	0.368	-0.414	0.847	-0.478
JS4	-0.321	-0.323	0.386	0.303	-0.349	0.821	-0.453
JS5	-0.327	-0.337	0.427	0.343	-0.379	0.834	-0.507
PD1	0.423	0.408	-0.434	-0.427	0.434	-0.444	0.801
PD2	0.404	0.483	-0.568	-0.530	0.564	-0.504	0.841
PD3	0.407	0.392	-0.430	-0.445	0.496	-0.450	0.822
PD4	0.415	0.402	-0.469	-0.493	0.458	-0.471	0.818
PD5	0.464	0.422	-0.443	-0.440	0.451	-0.467	0.817
<i>Fornell-Larcker criterion</i>							
WO	0.836						
WC	0.296	0.793					
PC	-0.315	-0.507	0.850				
PP	-0.304	-0.457	0.498	0.838			
JB	0.328	0.449	-0.527	-0.485	0.848		
JS	-0.369	-0.402	0.500	0.412	-0.448	0.832	
PD	0.514	0.516	-0.575	-0.572	0.590	-0.571	0.820

WC 996 work culture, WO work overload, PC perceived career development opportunities, PP perceived pay for performance, JB job burnout, JS job satisfaction, PD psychological distress.

**Table 4 Hypothesis testing.**

Hypothesis	Beta	CI min	CI max	t value	p-value	f <sup>2</sup>	r <sup>2</sup>	Decision	
<i>Factors effecting job burnout</i>									
H <sub>1a</sub>	WC → JB	0.386	0.319	0.455	11.167	0.000	0.180	0.243	Supported
H <sub>2a</sub>	WO → JB	0.214	0.138	0.285	5.793	0.000	0.055		Supported
<i>Factors effecting job satisfaction</i>									
H <sub>1b</sub>	WC → JS	-0.099	-0.185	-0.013	2.270	0.023	0.010	0.349	Supported
H <sub>2b</sub>	WO → JS	-0.174	-0.250	-0.101	4.584	0.000	0.039		Supported
H <sub>3</sub>	PC → JS	0.258	0.169	0.350	5.708	0.000	0.060		Supported
H <sub>4</sub>	PP → JS	0.108	0.027	0.185	2.651	0.008	0.012		Supported
H <sub>5</sub>	JB → JS	-0.159	-0.245	-0.074	3.642	0.000	0.024		Supported
<i>Factors effecting psychological distress</i>									
H <sub>6</sub>	JB → PD	0.418	0.359	0.476	14.168	0.000	0.260	0.465	Supported
H <sub>7</sub>	JS → PD	-0.384	-0.443	-0.323	12.498	0.000	0.220		Supported

WC 996 work culture, WO work overload, PC perceived career development opportunities, PP perceived pay for performance, JB job burnout, JS job satisfaction, PD psychological distress.

performance, and job burnout → job satisfaction have  $R^2$  values of 0.243, 0.465, and 0.349, respectively, suggesting that the independent variables included in the model account for a substantial level of the variance found in these dependent variables. The  $R^2$  values indicate that the data fit the model well, and the independent variables utilized in the model are effective predictors of the dependent variables.

The outcome of the path analysis indicates that for job burnout, the study tested two hypotheses ( $H_{1a}$  and  $H_{2a}$ ), both of which suggest that 996 work culture and work overload have a positive effect on job burnout. The beta values for 996 work culture and work overload are 0.386 and 0.214, respectively, with confidence intervals (CI) ranging from 0.319 to 0.455 and from 0.138 to 0.285. The  $t$ -values are 11.167 and 5.793, with  $p$ -values of 0.000, indicating strong support for both hypotheses. For job satisfaction, we tested five hypotheses ( $H_{1b}$ ,  $H_{2b}$ ,  $H_3$ ,  $H_4$ , and  $H_5$ ). The results reveal that all hypotheses are accepted, indicating that 996 work culture, work overload, perceived career development opportunities, perceived pay for performance, and job burnout have significant effects on job satisfaction. The beta values for 996 work culture, work overload, perceived career development opportunities, perceived pay for performance, and job burnout are  $-0.099$ ,  $-0.174$ ,  $0.258$ ,  $0.108$ , and  $-0.159$ , respectively, with CI ranging from  $-0.185$  to  $-0.013$ ,  $-0.250$  to  $-0.101$ ,  $0.169$  to  $0.350$ ,  $0.027$  to  $0.185$ , and  $-0.245$  to  $-0.074$ . The  $t$ -values range from 2.270 to 5.708, with  $p$ -values less than 0.05, indicating strong support for all hypotheses. Likewise, for psychological distress, the study tested two hypotheses ( $H_6$  and  $H_7$ ), which suggest that job burnout and job satisfaction have significant effects on psychological distress. The beta values for job burnout and job satisfaction are 0.418 and  $-0.384$ , respectively, with CI ranging from 0.359 to 0.476 and  $-0.443$  to  $-0.323$ . The  $t$ -values are 14.168 and 12.498, with  $p$ -values of 0.000, indicating strong support for both hypotheses.

**Multi-group analysis (MGA).** The measurement invariance of the composite model (MICOM) procedure of the integrated model was used to calculate the measurement invariance of the subgroups. As 42 of 45 MICOM permutation  $p$ -values were greater than 0.05, this study assumed equal invariance among the subgroups. Thus, the PLS-MGA approach was employed to compare the path coefficients between the two groups.

*Effects of gender.* The study results were stratified by gender in the sample, but no significant difference was observed in the link of the model between the genders. The gender variable did not affect the links between the study models.

*Effects of education.* The study results were stratified by the education level in the sample into two groups; however, no significant difference was observed in the link between the paths of the model based on education level. The education variable did not affect the links between the study models.

*Effects of tenure.* The outcomes of the two groups ( $\leq 2$  years and  $\geq 2$  years) displayed (in Table 5) were based on the participants' tenure in the current workplace. The findings revealed that the effect (job burnout to psychological distress) on respondents working for less than or equal to two years was much higher than that on respondents working for more than two years. Moreover, the findings suggest that the effect (job satisfaction to psychological distress) on respondents working for more than two years was much higher than that on respondents working for less than or equal to 2 years.

*Effects of average monthly income.* The outcomes of the two groups, relying on the average monthly income of the sample,

established a significant difference, which indicated that the effect (perceived career development opportunities to job satisfaction) on respondents with an average monthly income less than or equal to CNY8000 was much higher than that of respondents with an average monthly income more than CNY8000. However, the difference in the average monthly income did not affect the other relationships.

*Effects of annual bonus.* The group results are determined based on the annual bonus of the sample. However, variance in the annual bonus does not affect the relationship between the models.

## Discussion and implication

The aim of this study, based on cross-sectional data, was to examine the factors that impact job burnout, job satisfaction, and psychological distress among employees across different organizations. All (nine) proposed hypotheses were significant. The  $R$ -squared values of 0.243, 0.349, and 0.465 indicate that the model is a good fit for the data and that the independent variables used in the analysis are strong factors of the dependent variables. The results of this study revealed several significant findings, which are discussed below.

The results suggest that 996 work culture positively influenced job burnout ( $H_{1a}$ ) and negatively influenced job satisfaction of the Chinese Gen Z workers ( $H_{1b}$ ). These findings are consistent with the results reported by Dextras-Gauthier and Marchand (2016) regarding the positive influence of poor work culture on job burnout, as well as with the studies conducted by Brazil et al. (2010), which demonstrated that the type of organizational culture can predict the levels of job satisfaction among employees. This study indicates that when Gen Z workers are subjected to a workplace that promotes 996, an abominable work culture, they tend to experience job burnout and have lower levels of job satisfaction. In other words, the expectation of working from 9 a.m. to 9 p.m., 6 days a week, as observed in the 996 work culture, could lead to high levels of job burnout among Gen Z workers in China. In addition, the outcomes of this study demonstrated the positive effect of work overload on job burnout. Thus,  $H_{2a}$  was supported. This finding corroborates with the study by Maslach and Leiter (2008), and Bakker and Demerouti (2017), which have identified work overload as enablers of job burnout. Alternatively, the significance of work overload as a predictor of job burnout should not be overlooked. Furthermore, consistent with  $H_{2b}$ , the results identified a significant negative association between work overload and job satisfaction. This reinforces the results of previous studies (Yeh, 2015; Kurniawaty et al., 2019). This finding emphasizes the necessity of effectively reducing work overload and managing workload to improve job satisfaction among employees.

We discovered that both perceived career development opportunities and perceived pay for performance positively influenced job satisfaction ( $H_3$  and  $H_4$ ). Similarly, Price and Reichert (2017) identified perceived career development opportunities as a predictor that can enhance job satisfaction. The findings were consistent with the results reported by Ren et al. (2017). The previous research reported a significant positive link between perceived pay for performance and job satisfaction. Thus, it can be seen that it is momentous to meet both the material and spiritual needs of Gen Z workers. They require predictable career development opportunities and their corresponding salaries to have higher job satisfaction.

Furthermore, the results suggest that job burnout has a significant negative influence on job satisfaction ( $H_5$ ). This finding is consistent with the previous studies by Uchmanowicz et al. (2020) and Wang et al. (2014), indicating that individuals who



**Table 5 Multi-group analysis.**

Associations	Respondent's gender Male (N = 357) Female (N = 319) Difference		Respondent's education Secondary/collage diploma (N = 283) Bachelor degree or above (N = 393) Difference		Tenure ≤ 2 Years (N = 328) > 2 Years (N = 348) Difference	
	Beta	p-value	Beta	p-value	Beta	p-value
WC → JB	0.053	0.450	-0.110	0.113	0.088	0.204
WO → JB	-0.039	0.592	0.037	0.612	-0.037	0.617
WC → JS	-0.062	0.480	-0.167	0.064	-0.004	0.958
WO → JS	-0.131	0.082	0.057	0.469	-0.038	0.616
PC → JS	-0.048	0.597	-0.096	0.294	-0.045	0.620
PP → JS	-0.061	0.457	-0.159	0.062	0.021	0.797
JB → JS	0.074	0.398	-0.044	0.620	0.030	0.738
JB → PD	0.088	0.134	0.061	0.299	0.115	0.049
JS → PD	0.021	0.737	0.073	0.235	0.127	0.034

Associations	Average monthly income ≤ CNY8000 (N = 353) > CNY8000 (N = 323) Difference		Annual bonus ≤ CNY10000 (N = 208) > CNY10000 (N = 468) Difference	
	Beta	p-value	Beta	p-value
WC → JB	-0.091	0.189	0.051	0.480
WO → JB	0.101	0.167	0.033	0.665
WC → JS	0.019	0.832	-0.124	0.192
WO → JS	0.095	0.218	-0.102	0.208
PC → JS	0.179	0.047	-0.007	0.939
PP → JS	-0.092	0.261	-0.053	0.558
JB → JS	0.046	0.600	0.076	0.438
JB → PD	0.063	0.297	0.071	0.254
JS → PD	-0.031	0.613	0.054	0.413

WC 996 work culture, WO work overload, PC perceived career development opportunities, PP perceived pay for performance, JB job burnout, JS job satisfaction, PD psychological distress.

experience burnout tend to have lower job satisfaction. These results imply that job burnout positively influences psychological distress (H<sub>6</sub>). This finding is reinforced by Schaufeli and Taris (2014), who proposed a modified JD-R model that demonstrates how job demands indirectly affect adverse outcomes (e.g., psychological distress) through burnout. Additionally, this study found that the association between job satisfaction and psychological distress is significant and negative, which supports H<sub>7</sub>. These findings are consistent with those of Ren et al. (2022), who identified low job satisfaction as a factor that can increase the risk of psychological distress, and a high level of burnout was linked to an increased risk of psychological distress. The current findings highlight that recognizing the impact of job satisfaction and job burnout on employees' psychological distress can guide institutions in implementing strategies to support their workers.

**Theoretical implications.** The outcomes of the current study have several vital implications for the theory and existing literature. First, the findings contribute to the JD-R model by highlighting the specific pathways by which various job demands and resources affect psychological distress among the Gen Z workforce in China. Specifically, the finding that the 996 work culture and work overload indirectly influence psychological distress through job burnout aligns with the JD-R model's emphasis on job demands as a significant factor in burnout (Schaufeli & Taris, 2014). Similarly, the finding that perceived career development opportunities and perceived pay for performance positively influenced job satisfaction led to lower levels of psychological distress. This is consistent with the JD-R model's emphasis on job resources as a significant factor in positive work-related attitudes

(Schaufeli & Bakker, 2004). Second, the outcomes of this study contribute to the psychological distress literature on the factors that contribute to psychological distress among workers, provide insights into the unique experiences of Gen Z workers in China, and emphasize the necessity of job satisfaction in reducing psychological distress. By illuminating the particular mechanisms that contribute to psychological distress among Gen Z workers in China, this study addresses the call for a more comprehensive understanding of the effects of work design (Morgeson & Humphrey, 2006; Bakker & Demerouti, 2017). Third, research on 996 work culture remains relatively new and has received limited attention in the scholarly literature. Early investigations into the 996 work culture phenomenon within the workplace context have primarily concentrated on elucidating its basic characteristics and initial implications (Li, 2019; Wang, 2020; Yang et al., 2021). Our study is the first to empirically explore the relationship between 996 work culture and employees' psychological distress. This research holds significant importance as it addresses a critical void in the existing literature, where conjecture has far outpaced empirical substantiation regarding the potential role of the 996 work culture in precipitating psychological issues among employees.

**Practical implications.** The research outcomes offer imperative practical implications for organizations concerning the mental health of young employees. In conclusion, firms must realize the necessity of their employees' mental health and take proactive steps to support them. For example, organizations should try to avoid assigning high workloads to Gen Z workers and encourage them to work efficiently instead of advocating the 996 working

mechanism and promoting working overtime to avoid psychological distress. High workloads and long working hours can lead to burnout and increased employee stress (Sufiyati and Cokki, 2021). Establishing a healthy work-life balance for employees is crucial for organizations, including Gen Z workers, to maintain their psychological health and ensure long-term engagement. Furthermore, it is advisable to implement flexible working arrangements within organizations. Gen Z workers attach great importance to the flexibility of their work hours, a factor that can significantly enhance their job satisfaction (Waworuntu et al., 2022).

It is becoming increasingly crucial to prioritize the mental health of young staff, as psychological distress can directly impede their creativity, enthusiasm, and productivity at work (Kalyar et al., 2021). This study also demonstrates that improving Gen Z workers' perceptions of career development opportunities and pay for performance can serve as a useful instrument for improving their mental health. Furthermore, to maintain and enhance the mental well-being of the workforce, immediate action is required to prevent burnout and job dissatisfaction among Gen Z employees in China. Hence, these empirical findings can guide managers in formulating strategies to protect young workers' mental health. For example, organizations should have an employee assistance program (EAP) in place to provide support and counseling to employees who may be experiencing psychological distress. Managers should accurately and regularly understand employees' perceptions of their current work and life through regular assessments or short smart surveys, which will enable the capture of employees' actual work experiences in real-time and facilitate prompt interventions to correct any issues within a defined timeframe. Workplaces that foster mental well-being through the creation of a harmonious work environment and the provision of support for individuals dealing with mental illnesses are more likely to inspire employees to work with heightened passion, thereby enhancing overall worker productivity (Bubonya et al., 2017; López-López et al., (2019); De-Oliveira et al., 2023). Additionally, managers can design rational incentive systems that promote fairness and competition in the workplace to enhance employee motivation and facilitate good psychological health. Positive mental health transcends the mere absence of mental health issues, such as depression or psychological distress; it also encompasses the presence of positive attributes, including a sense of purpose, contentment, and active engagement in work and life (Fusar-Poli et al., 2020). Such systems can effectively create a positive work environment and foster employee engagement. Additionally, providing training and education on mental health, stress management, and self-care can be highly beneficial in developing employees' skills and knowledge, enabling them to better maintain their psychological health and well-being.

**Limitations and future research directions.** Several limitations were encountered in this study. First, a quantitative approach was adopted, which provided a limited understanding of this particular phenomenon. Therefore, to enhance future research, it is advisable to employ a mixed-methods approach to obtain a more comprehensive understanding of this phenomenon. Both quantitative and qualitative methods can be applied in a single study. Mixed-methods research can provide valuable insights and enhance understanding that may be overlooked when relying solely on a single method (Migiro & Magangi, 2011). Second, the outcomes of this study are limited in terms of generalizability. The sample size of this study was small and limited to the Chinese context. Although many findings are in line with previous studies conducted in diverse contexts, the authors propose that this study should be replicated in other regions and sectors to better

understand the nature of this process in a different context. Third, we assessed perceived career development opportunities and perceived pay for performance based on worker perceptions. By establishing the significance of perceived career development opportunities and perceived pay for performance in helping employees overcome daily exhaustion, our study highlights the need for effective strategies to meet Gen Z workers' expectations. However, further research is necessary to determine the specific content of these strategies. In the future, researchers could create a list of strategies and conduct experimental studies to assess their effectiveness.

## Conclusion

In conclusion, this study provides evidence that the 996 work culture and work overload significantly contribute to job burnout and psychological distress among the Chinese Gen Z workforce. These findings underscore the need for organizations to generate a healthy work environment and provide ample support and resources to workers to prevent burnout and promote their mental well-being. Moreover, the study underscores the importance of companies that adopt 996 work culture in implementing corresponding incentive policies for their employees, including providing suitable career development opportunities and competitive salaries, which can enhance employees' job satisfaction and promote mental health. The outcomes of this study offer valuable insights for policymakers and managers to design effective interventions to enhance the mental well-being and working conditions of Gen Z employees in China. As the global workforce becomes more diverse, it is necessary to identify the predictors of job burnout and job satisfaction across different cultures and contexts. Further research is encouraged to explore contextual variables that may influence the relationships elucidated in this study.

## Data availability

The original contributions presented in the study are included in the article/Supplementary Material, further inquiries can be directed to the corresponding author/s.

Received: 20 April 2023; Accepted: 7 November 2023;

Published online: 17 November 2023

## References

- Aazami S, Shamsuddin K, Akmal S, Azami G (2015) The relationship between job satisfaction and psychological/physical health among Malaysian working women. *Malays J Med Sci* 22(4):40–51. [http://www.mjms.usm.my/MJMS22042015/06MJMS22042015\\_oa.pdf](http://www.mjms.usm.my/MJMS22042015/06MJMS22042015_oa.pdf)
- Al Bastaki S, Haak-Saheem W, Darwish TK (2021) Perceived training opportunities and knowledge sharing: the case of the United Arab Emirates. *Int J Manpower* 42(1):113–130. <https://doi.org/10.1108/IJM-10-2019-0457>
- Allan BA, Dexter C, Kinsey R, Parker S (2018) Meaningful work and mental health: job satisfaction as a moderator. *J Ment Health* 27(1):38–44. <https://doi.org/10.1080/09638237.2016.1244718>
- Anasi SN (2020) Perceived influence of work relationship, work load and physical work environment on job satisfaction of librarians in South-West, Nigeria. *Glob Knowl Memory Commun* 69(6–7):377–398. <https://doi.org/10.1108/GKMC-11-2019-0135>
- Bae KB (2021) The differing effects of individual- and group-based pay for performance on employee satisfaction: the role of the perceived fairness of performance evaluations. *Public Manag Rev* 1–19. <https://doi.org/10.1080/14719037.2021.1988270>
- Barhate B, Dirani KM (2022) Career aspirations of generation Z: a systematic literature review. *Eur J Train Dev* 46(1/2):139–157. <https://doi.org/10.1108/EJTD-07-2020-0124>
- Bakker AB, Demerouti E, Taris TW, Schaufeli WB, Schreurs PJG (2003) A multigroup analysis of the job demands-resources model in four home care

- organizations. *Int J Stress Manag* 10(1):16–38. <https://doi.org/10.1037/1072-5245.10.1.16>
- Bakker AB, Demerouti E (2007) The job demands-resources model: state of the art. *J Managerial Psychol* 22(3):309–328. <https://doi.org/10.1108/02683940710733115>
- Bakker AB, Demerouti E (2017) Job demands-resources theory: taking stock and looking forward. *J Occup Health Psychol* 22(3):273–285. <https://doi.org/10.1037/ocp0000056>
- Beckers DGJ, Van Der Linden D, Smulders PGW, Kompier MAJ, Taris TW, Geurts SAE (2008) Voluntary or involuntary? Control over overtime and rewards for overtime in relation to fatigue and work satisfaction. *Work Stress* 22(1):33–50. <https://doi.org/10.1080/02678370801984927>
- Brazil K, Wakefield DB, Cloutier MM, Tennen H, Hall CB (2010) Organizational culture predicts job satisfaction and perceived clinical effectiveness in pediatric primary care practices. *Health Care Manag Rev* 35(4):365–371. <https://doi.org/10.1097/HMR.0b013e3181edd957>
- Bubonya M, Cobb-Clark DA, Wooden M (2017) Mental health and productivity at work: does what you do matter? *Labour Econ* 46:150–165. <https://doi.org/10.1016/j.labeco.2017.05.001>
- Chen X, Al Mamun A, Hussain WMHW, Jingzu G, Yang Q, Shami SSAA (2023) Envisaging the job satisfaction and turnover intention among the young workforce: evidence from an emerging economy. *PLoS ONE* 18(6):1–21. <https://doi.org/10.1371/journal.pone.0287284>
- Coetzee M, Bester MS (2021) Exploring the reciprocal correspondence among workplace relationships, career goal instrumentality, career satisfaction, and organisational commitment. *South Afr J Psychol* 51(1):81–94. <https://doi.org/10.1177/0081246320948366>
- Cohen KA, Stiles-Shields C, Winquist N, Lattie EG (2021) Traditional and non-traditional mental healthcare services: usage and preferences among adolescents and younger adults. *J Behav Health Serv Res* 48(4):1–17. <https://doi.org/10.1007/s11414-020-09746-w>
- De-Oliveira C, Saka M, Bone L, Jacobs R (2023) The role of mental health on workplace productivity: a critical review of the literature. *Appl Health Econ Health Policy* 21(2):167–193. <https://doi.org/10.1007/s40258-022-00761-w>
- Demerouti E, Nachreiner F, Bakker AB, Schaufeli WB (2001) The job demands-resources model of burnout. *J Appl Psychol* 86(3):499. <https://doi.org/10.1037/0021-9010.86.3.499>
- Dextras-Gauthier J, Marchand A (2016) Organizational culture, work organization conditions and burnout. *Relat Ind Ind Relations* 71(1):23–56. <https://go.gale.com/ps/i.do?id=GALE%7CA448685945&sid=googleScholar&v=2.1&it=r&linkaccess=abs&issn=0034379X&p=AONE&sw=w&userGroupName=anon%7E737359f>
- Duffield C, Baldwin R, Roche M, Wise S (2014) Job enrichment: creating meaningful career development opportunities for nurses. *J Nurs Manag* 22(6):697–706. <https://doi.org/10.1111/jonm.12049>
- Faragher EB, Cass M, Cooper CL (2005) The relationship between job satisfaction and health: a meta-analysis. *Occup Environ Med* 62(2):105–112. <https://doi.org/10.1136/oem.2002.006734>
- Faul F, Erdfelder E, Lang AG, Buchner A (2007) G\*Power 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behav Res Method* 39(2):175–191. <https://doi.org/10.3758/BF03193146>
- Feng D, Su S, Wang L, Liu F (2018) The protective role of self-esteem, perceived social support and job satisfaction against psychological distress among Chinese nurses. *J Nurs Manag* 26(4):366–372. <https://doi.org/10.1111/jonm.12523>
- Fornell C, Larcker DF (1981) Structural equation models with unobservable variables and measurement error: algebra and statistics. *J Market Res* 18(3):382–388. <https://doi.org/10.1177/002224378101800313>
- Fusar-Poli P, de Pablo GS, De Micheli A, Nieman DH, Correll CU, Kessing LV, van Amelsvoort T (2020) What is good mental health? A scoping review. *Eur Neuropsychopharmacol* 31:33–46. <https://doi.org/10.1016/j.euroneuro.2019.12.105>
- Gabrielova K, Buchko AA (2021) Here comes Generation Z: Millennials as managers. *Bus Horiz* 64(4):489–499. <https://doi.org/10.1016/j.bushor.2021.02.013>
- Gerhart B, Fang M (2015) Pay, intrinsic motivation, extrinsic motivation, performance, and creativity in the workplace: revisiting long-held beliefs. *Ann Rev Organ Psychol Organ Behav* 2(1):489–521. <https://doi.org/10.1146/annurev-orgpsych-032414-111418>
- Ghawadra SF, Abdullah KL, Choo WY, Phang CK (2019) Psychological distress and its association with job satisfaction among nurses in a teaching hospital. *J Clin Nurs* 28(21–22):4087–4097. <https://doi.org/10.1111/jocn.14993>
- Hair JoeF, Ringle CM, Sarstedt M (2011) PLS-SEM: indeed a silver bullet. *Journal of Market Theor Pract* 19(2):139–152. <https://doi.org/10.2753/MTP1069-6679190202>
- Hair JosephF, Ringle CM, Sarstedt M (2013) Partial least squares structural equation modeling: rigorous applications, better results and higher acceptance. *Long Range Plan* 46(1–2):1–12. <https://doi.org/10.1016/j.lrp.2013.01.001>
- Hair Jr. JoeF, Matthews LM, Matthews RL, Sarstedt M (2017) PLS-SEM or CB-SEM: updated guidelines on which method to use. *Int J Multivariate Data Anal* 1(2):107–123. <https://doi.org/10.1504/ijmda.2017.10008574>
- Hair Jr JF, Hult GTM, Ringle CM, Sarstedt M, Danks NP, Ray S (2021) Partial least squares structural equation modeling (PLS-SEM) using R: a workbook. Springer Nature, Gewerbestrasse, Switzerland. Available from: <https://library.oapen.org/bitstream/handle/20.500.12657/51463/1/9783030805197.pdf>
- Institute of Psychology of the Chinese Academy of Sciences (2020) National Mental Health Development Report of China (2019–2020), (Online) Available from: <https://www.pishu.cn/zxxz/xwdt/563830.shtml>
- Kalyar MN, Saeed M, Usta A, Shafique I (2021) Workplace cyberbullying and creativity: examining the roles of psychological distress and psychological capital. *Manag Res Rev* 44(4):607–624. <https://doi.org/10.1108/MRR-03-2020-0130>
- Kimura T, Bande B, Fernández-Ferrín P (2018) Work overload and intimidation: The moderating role of resilience. *Eur Manag J* 36(6):736–745. <https://doi.org/10.1016/j.emj.2018.03.002>
- Ko YJ, Choi JN (2019) Overtime work as the antecedent of employee satisfaction, firm productivity, and innovation. *J Organ Behav* 40(3):282–295. <https://doi.org/10.1002/job.2328>
- Kock N (2015) Common method bias in PLS-SEM: a full collinearity assessment approach. *Int J E-Collab* 11(4):1–10. <https://doi.org/10.4018/ijec.2015100101>
- Kraimer ML, Seibert SE, Wayne SJ, Liden RC, Bravo J (2011) Antecedents and outcomes of organizational support for development: the critical role of career opportunities. *J Appl Psychol* 96(3):485–500. <https://doi.org/10.1037/a0021452>
- Kunte M (2016) Reviewing literature on employee wellness practices. *J Strateg Hum Resour Manag* 5(2):1–9. <https://www.proquest.com/openview/a3c409bf44a9fd5984886d65050d1db6/1?pq-origsite=gscholar&cbl=2030931>
- Kurniawaty K, Ramly M, Ramlawati (2019) The effect of work environment, stress, and job satisfaction on employee turnover intention. *Manag Sci Lett* 9(6):877–886. <https://doi.org/10.5267/j.msl.2019.3.001>
- Lee RL, Ashforth BE (1996) A meta-analytic examination of the correlates of the three dimensions of job burnout. *J Appl Psychol* 81(2):123–133. <https://doi.org/10.1037/0021-9010.81.2.123>
- Li X (2019) The 996. icu movement in China: changing employment relations and labour agency in the tech industry. *Made China J* 4(2):54–59. <https://search.informit.com/doi/10.3316/informit.019670750084977>
- López-López IM, Gómez-Urquiza JL, Cañadas GR, De la Fuente EI, Albendín-García L, Cañadas-De la Fuente GA (2019) Prevalence of burnout in mental health nurses and related factors: a systematic review and meta-analysis. *Int J Mental Health Nurs* 28(5):1035–1044
- Lu ACC, Gursoy D (2016) Impact of job burnout on satisfaction and turnover intention: do generational differences matter? *J Hosp Tour Res* 40(2). <https://doi.org/10.1177/1096348013495696>
- Lyons S, Kuron L (2014) Generational differences in the workplace: a review of the evidence and directions for future research. *J Organ Behav* 35(S1):139–157. <https://doi.org/10.1002/job.1913>
- Maslach C, Leiter MP (2008) Early predictors of job burnout and engagement. *J Appl Psychol* 93(3):210–235. <https://doi.org/10.1037/0021-9010.93.3.498>
- Matin HZ, Sayyed Kalali N, Reza M, Anvari A (2012) Do demographic variables moderate the relationship between job burnout and its consequences? *Iran J Manag Stud (IJMS)* 5(1):47–62. [https://www.sid.ir/en/VEWSSSD/J\\_pdf/5063020120103.pdf](https://www.sid.ir/en/VEWSSSD/J_pdf/5063020120103.pdf)
- Midi H, Sarkar SK, Rana S (2010) Collinearity diagnostics of binary logistic regression model. *J Interdiscip Math* 13(3):253–267. <https://doi.org/10.1080/09720502.2010.10700699>
- Migiro SO, Magangi BA (2011) Mixed methods: a review of literature and the future of the new research paradigm. *Afr J Bus Manag* 5(10):3757–3764. <https://doi.org/10.5897/AJBM09.082>
- Morgeson FP, Humphrey SE (2006) The Work Design Questionnaire (WDQ): developing and validating a comprehensive measure for assessing job design and the nature of work. *J Appl Psychol* 91(6):1321–1339. <https://doi.org/10.1037/0021-9010.91.6.1321>
- Muleya D, Ngirande H, Terera SR (2022) The influence of training and career development opportunities on affective commitment: a South African higher education perspective. *SA J Hum Resour Manag* 20:1620–1628. <https://sajhrm.co.za/index.php/sajhrm/article/download/1620/2858>
- Nirel N, Goldwag R, Feigenberg Z, Abadi D, Halpern P (2008) Stress, work overload, burnout, and satisfaction among paramedics in Israel. *Prehosp Disaster Med* 23(6):537–546. <https://doi.org/10.1017/S1049023X00006385>
- Ogbonnaya C, Daniels K, Nielsen K (2017) Does contingent pay encourage positive employee attitudes and intensify work? *Hum Resour Manag J* 27(1):94–112. <https://doi.org/10.1111/1748-8583.12130>
- Park MSA, Goto N, Kennedy A, Raj S, Dutton A, Park L, Sovet L (2021) Positive orientation, job satisfaction and psychological well-being of mental health practitioners in Malaysia. *Psychol Health Med* 26(10):1219–1229. <https://doi.org/10.1080/13548506.2020.1804599>
- Pérez JP (2013) Effect of burnout and work overload on the quality of work life. *Estud Gerenc* 29(129):445–455. <https://doi.org/10.1016/j.estger.2013.11.010>

- Podsakoff PM, MacKenzie SB, Lee JY, Podsakoff NP (2003) Common method biases in behavioral research: a critical review of the literature and recommended remedies. *J Appl Psychol* 88(5):879–920. <https://doi.org/10.1037/0021-9010.88.5.879>
- Politis I, Tzonichaki I, Gioftos G (2015) Job satisfaction of occupational therapists in Greece. *Int J Prevent Treat* 4(2A):29–35. <https://doi.org/10.5923/s.ijpt.201501.03>
- Pratiwi IY, Ratnadi NMD, Suprasto HB, Sujana IK (2019) The effect of role conflict, role ambiguity, and role overload in burnout government internal supervisors with tri hita karana culture as moderation. *Int Res J Manag IT Soc Sci* 6(3):61–69. <https://doi.org/10.21744/irjmis.v6n3.630>
- Price S, Reichert C (2017) The importance of continuing professional development to career satisfaction and patient care: meeting the needs of novice to mid-to late-career nurses throughout their career span. *Adm Sci* 7(2):41–52. <https://doi.org/10.3390/admsci7020017>
- Psychology (2021) Psychological Industry Annual Report, (Online), Available from: <https://baijiahao.baidu.com/s?id=1722998514725743382&wfr=spider&for=pc>
- Reinartz W, Haenlein M, Henseler J (2009) An empirical comparison of the efficacy of covariance-based and variance-based SEM. *Int J Res Market* 26(4):332–344. <https://doi.org/10.1016/j.ijresmar.2009.08.001>
- Ren T, Fang R, Yang Z (2017) The impact of pay-for-performance perception and pay level satisfaction on employee work attitudes and extra-role behaviors: an investigation of moderating effects. *J Chin Human Resour Manag* 8(2):94–113. <https://doi.org/10.1108/JCHRM-06-2015-0012>
- Ren Z, Zhao H, Zhang X et al. (2022) Associations of job satisfaction and burnout with psychological distress among Chinese nurses. *Curr Psychol* 1–11. <https://doi.org/10.1007/s12144-022-04006-w>
- Ridner SH (2004) Psychological distress: concept analysis. *J Adv Nurs* 45(5):535–546. <https://doi.org/10.1046/j.1365-2648.2003.02938.x>
- Sánchez-Hernández MI, González-López ÓR, Buenadicha-Mateos M, Tato-Jiménez JL (2019) Work-life balance in great companies and pending issues for engaging new generations at work. *Int J Environ Res Public Health* 16(24):5122–5140. <https://doi.org/10.3390/ijerph16245122>
- Schaufeli WB, Bakker AB (2004) Job demands, job resources, and their relationship with burnout and engagement: a multi-sample study. *J Organ Behav* 25(3):293–315. <https://doi.org/10.1002/job.248>
- Schaufeli WB, Bakker AB, van Rhenen W (2009) How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *J Organ Behav* 30(7):893–917. <https://doi.org/10.1002/job.595>
- Schaufeli WB, Taris TW (2014) A critical review of the job demands-resources model: Implications for improving work and health. In: Bridging occupational, organizational and public health: a transdisciplinary approach. Vol. 9789400756403. Springer, pp. 43–68 [https://doi.org/10.1007/978-94-007-5640-3\\_4](https://doi.org/10.1007/978-94-007-5640-3_4)
- Schroth H (2019) Are you ready for gen Z in the workplace? *Calif Manag Rev* 61(3):5–18. <https://doi.org/10.1177/0008125619841006>
- Sufiyati, Cokki, S. P. D. M. S. (2021) Effect of work overload on job satisfaction through burnout. *J Manaje* 25(1):56–75. <https://doi.org/10.24912/jm.v25i1.703>
- Tarigan J, Cahya J, Valentine A, Hatane S, Jie F (2022) Total reward system, job satisfaction and employee productivity on company financial performance: evidence from Indonesian generation Z workers. *J Asia Bus Stud* 16(6):1041–1065. <https://doi.org/10.1108/JABS-04-2021-0154>
- Uchmanowicz I, Karniej P, Lisiak M, Chudiak A, Lomper K, Wiśnicka A, Wleklík M, Rosińczuk J (2020) The relationship between burnout, job satisfaction and the rationing of nursing care—a cross-sectional study. *J Nurs Manag* 28(8):2185–2195. <https://doi.org/10.1111/jonm.13135>
- Wang JJ (2020) How managers use culture and controls to impose a ‘996’ work regime in China that constitutes modern slavery. *Account Financ* 60(4):4331–4359. <https://doi.org/10.1111/acfi.12682>
- Wang Y, Zheng L, Hu T, Zheng Q (2014) Stress, burnout, and job satisfaction: Case of police force in China. *Public Pers Manag* 43(3):325–339. <https://doi.org/10.1177/0091026014535179>
- Waworuntu EC, Kainde SJ, Mandagi DW (2022) Work-life balance, job satisfaction and performance among millennial and Gen Z employees: a systematic review. *Society* 10(2):286–300. <https://doi.org/10.33019/society.v10i2.464>
- West CP, Dyrbye LN, Shanafelt TD (2018) Physician burnout: contributors, consequences and solutions. *J Int Med* 283(6):516–529. <https://doi.org/10.1111/joim.12752>
- Xiao C, Silva EA, Zhang C (2020) Nine-nine-six work system and people’s movement patterns: Using big data sets to analyse overtime working in Shanghai. *Land Use Policy* 90:104340. <https://doi.org/10.1016/j.landusepol.2019.104340>
- Yang T, Liu R, Deng J (2021) Does co-worker presenteeism increase innovative behavior? Evidence from IT professionals under the 996 work regime in China. *Front Psychol* 12:681515. <https://doi.org/10.3389/fpsyg.2021.681505>
- Yang Y (2019) ‘Developers’ lives matter’—Chinese software engineers use Github to protest against the country’s 996 work schedule. *South China Morning Post*. Available from: <https://www.scmp.com/tech/start-ups/article/3003691/developers-lives-matter-chinese-software-engineers-use-github>
- Yasin YM, Kerr MS, Wong CA, Bélanger CH (2020) Factors affecting nurses’ job satisfaction in rural and urban acute care settings: a PRISMA systematic review. *J Adv Nurs* 76(4):963–979. <https://doi.org/10.1111/jan.14293>
- Yeh HJ (2015) Job demands, job resources, and job satisfaction in East Asia. *Soc Indic Res* 121(1):47–60. <https://doi.org/10.1007/s11205-014-0631-9>
- Zhu Y, Xie Y, Warner M, Guo Y (2015) Employee participation and the influence on job satisfaction of the ‘new generation’ of Chinese employees. *Int J Hum Resour Manag* 26(19):2395–2411. <https://doi.org/10.1080/09585192.2014.990397>

## Acknowledgements

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

## Author contributions

Conceptualization: XC, MM, JG, ZKMM, methodology: XC, MM, AAM, formal analysis: AAM, writing—original draft: XC, MM, JG, writing—review & editing: AAM, ZKMM.

## Competing interests

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

## Ethics approval

The human research ethics committee of Jishou University, China approved this study (Reference number: Jishou-2023-041301). This study has been performed in accordance with the Declaration of Helsinki.

## Informed consent

Written informed consent for participation was obtained from respondents who participated in the survey. No data was collected from anyone under 18 years old.

## Additional information

**Supplementary information** The online version contains supplementary material available at <https://doi.org/10.1057/s41599-023-02371-w>.

**Correspondence** and requests for materials should be addressed to Abdullah Al Mamun.

**Reprints and permission information** is available at <http://www.nature.com/reprints>

**Publisher’s note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.



**Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made. The images or other third party material in this article are included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/>.

© The Author(s) 2023