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Effects of organizational climate on employee job satisfaction and psychological well-being: the role of technological influence in Chinese higher education

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Abstract

Background In the Chinese education sector, educators' job satisfaction (JoS) is considered critical to educational quality and student outcomes. One critical area of inquiry is the organizational climate (OC) and its impact on JoS, and psychological well-being (PW), with technological influence (TI) moderating effect.

Purpose The current study has tried to look at the exact relationship among OC, PW, and JoS for educators working in the Chinese higher education setting. It also discusses the moderating role of TI on OC and JoS.

Design/methodology This study uses a quantitative cross-sectional survey design, grounded in post-positivism assumptions. Data collection involved sampling 690 respondents in the Chinese higher education setting via WeChat.

Findings The study methodology part included a pre-test, translation validation, demographic characteristics of participants, and results that showed a significant positive influence on JoS for PW and OC. The study also confirms the positive effect of PW on JoS. Moreover, the mediating role of PW within the OC–JoS link is also supported. Furthermore, TI positively moderates the OC–JoS relationship, thus it implies a supportive role of technology in enhancing the educators' satisfaction. The model indicated that OC, PW, and TI explain 72.4% of the variation in JoS.

Conclusion In this respect, the findings offer some practical insights for educational institutions and policymakers to facilitate enhancement strategies for OC, thus recognizing its influence on JoS and the well-being of educators. Understanding how technology can play a moderating role presents the strategic occasion to utilize technological tools for a more satisfying work environment.

Keywords Organizational climate, Psychological well-being, Technological influence, Educator's job satisfaction, Education sector

Introduction

In the case of the education sector in China, employee or educators' job satisfaction (*JoS*) is extremely important in that this is what will ensure quality education and overall good results from students [1]. Tran et al. [2] also reiterated that JoS is an essential factor for enhancing both employee's and organizations' overall productivity. Harrison et al. [3] found that a teacher's JoS is positively connected with the quality of instructions given to students,

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which, in turn, improves the student-teacher relationship. Similarly, Huang et al. [4] observed that when faculty members are satisfied with their jobs are more likely to be involved in their work and have favorable attitudes regarding their connections with coworkers and students. Mo and Morris [5] identified several work-related factors, including the school's atmosphere, opportunities for professional growth, reputation, pay, and values that motivated foreign high school teachers.

Despite these findings, a recent review by Hoque et al. [6] of 32 studies reported that while teachers' JoS is low, students' accomplishment remains high in China. A 2019 report by the Chinese National Institute of Educational Sciences reveals that JoS is highly influential in teachers' commitment to their profession and directly linked to their teaching effectiveness [7]. In a country with such vast and diverse educational landscapes, the well-being of educators acts as the linchpin that shapes the learning experience of millions of students [8, 9]. High levels of JoS among teachers are related to higher student engagement, improved academic performance, and a positive school climate [3]. With regard to educational reforms and the cultivation of innovation and critical thinking in students in China, understanding and addressing factors contributing to teacher JoS could create a learning environment that better enables academic success and holistic development [10].

In the education sector at large, organizational climate (*OC*) is considered one of the major determinants of JoS among educator professionals [11]. Additionally, organizational and social determinants play an essential role in forming ethical behavior among university employees. Xia et al. [12] found that it directly and significantly influenced teachers' JoS. Moreover, Yang and Xiangming [13] reported that a supportive environment enhances the university student's performance and overall experience. The OC consists of existing attitudes, values, and working circumstances within educational institutions, thus playing a pertinent role in shaping teachers' experiences. A positive OC therefore creates an environment at the negative pole and promotes effective communication, professional growth, and a sense of belonging at the positive pole [14]. When employees feel a positive OC, they tend to feel a greater sense of JoS, which results in more commitment to their jobs and better outcomes [15]. However, limited research has been conducted to explore the subtle precincts of OC that most deeply influence JoS among the teaching community [11, 16, 17].

Furthermore, a positive OC characterized by supportive leadership [18], a collaborative working environment [19], and clarity in the channels of communication creates conditions for enhancing the psychological well-being (*PW*) of employees [20]. When teachers feel valued and respected, they will embrace their work and feel good about doing it; hence, this contributes to better mental health and well-being [21, 22]. Moreover, a positive OC contributes to the PW of employees by ensuring that they are correctly oriented, free of stress, and in good mental health [23]. While there is an appreciation of the importance of OC, there exists gross research negligence in the determination of subtle and contextual factors that affect the role of OC in causing JoS and PW in educational institutions [21, 24]. Further research in this area can help in the development of interventions and strategies for targeting those educators with unique challenges that exist in creating a healthier and more productive work environment [9].

A positive PW not only enhances an individual's JoS by fostering a sense of purpose, resilience, and motivation but also acts to mediate between the OC and JoS [25, 26]. A supportive OC is able to contribute to the PW of employees, and in turn, this PW becomes a key mediator that links the organizational environment to JoS outcomes [27]. While this interrelated relationship has gained increased recognition, how PW mediates these relationships—more specifically, with regard to OC and JoS, together with the exact context variables that come into play—has received less study [25–27]. More research in this area needs to be conducted, especially in the educational sector [28, 29].

Technology is becoming pivotal in various aspects of teaching and administrative practices within the education sector [30]. Recently Xu et al. [31] underscored that a lack of attention has been given to the use of technology in learning and its impact on teachers' pre-service attention. In the context of OC and JoS, technology moderates the work environment and educator experience. It has been noted by Middlemist and Hitt [32] that the infusion of technological tools can improve organizational processes, collaboration, and communication. This positive relationship would then create the needed incentive for the fostering of JoS among educators. The interplay between technology, OC, and JoS, however, is a relatively unexplored research area.

Based on the above research gap our research answers the following research questions (RQs):

RQ1: How does OC influence JoS?
RQ2: Does PW mediate the relationship between OC and JoS?
RQ3: How does technological influence (TI) moderate the effect of OC on Jos in educational institutions?

Our research will contribute to the literature by analyzing elements of OC that most influence educators'

JoS and PW in China. Additionally, instrumental in giving insights into the mediating role of PW between OC and JoS. It would contribute to clarifying the mechanisms through which OC can affect educator outcomes. Our research will be one of the rare studies dealing with TI as a moderator between OC and JoS. Moreover, our research will provide practical recommendations to educational institutions concerning the development of such a favorable OC that would foster the PW of teachers and JoS, which would finally lead to better educational outcomes.

The rest of our research is structured as section two begins with formulating the hypothesis and developing the research model. Section three presents the methodology of the research, how data collection was done, the sampling technique used, and information about the respondents. This section also describes the tools of statistics used in analyzing the data. The fourth section presents the results, followed by an extended discussion in order to interpret the findings in the light of available literature. The last part concludes the paper, in which theoretical and practical implications of research are presented. This section also details the limitations of the study and furnishes directions for further research.

Formulation of hypotheses and model

Influences of OC on JoS and PW

According to the *social exchange theory*, employees develop certain expectations about the support and different resources they will receive from an organization as a result of its OC [33]. A positive OC in which workers feel supported, recognized, and equitably treated lays the groundwork for an exchange in goodwill; thus, it is likely that the employees will have higher JoS and have their PW enhanced in return [34, 35]. Moreover, the Conservation of Resources Theory suggests that a positive OC acts as a reservoir of resource troughs [36], buffering employees from job-related stressors and promoting their well-being and satisfaction in the process [37–39]. This study advocated the fact that when the employee feels a culture that values their effort, gives a chance for professional development, and cultivates an effective communication environment, then, in this case, workers are likely to be fulfilled and satisfied with their jobs [40, 41]. A positive atmosphere translates into higher morale and increased commitment to organizational goals [42, 43].

Several studies demonstrate that an appropriate OC strongly determines the PW [21]. Indeed, positive climates seem to be linked to reduced levels of job-related stress, burnout, and anxiety [44, 45]. Supportive leadership, fair policies, a culture of work-life balance, and the absence of depriving factors safeguard one from psychological insecurities and contribute to experiencing work in a more enriching way [46]. This has, in turn, contributed to the development of good mental health and well-being [47]. The employees working within an OC which supports its psychological needs have a stronger sense of purpose and accomplishment [48, 49].

H1: Educators JoS is significantly influenced by OC.
H2: Educators PW is significantly influenced by OC.

Influence of PW on JoS

According to the *affective events theory*, the emotional reaction of individuals to events at work is a major determinant of their JoS [50]. With regard to the PW construct, positive PW serves as the determinant of a more positive emotional reaction toward work, in turn enhancing JoS [51, 52]. The Well-being and JoS Model suggests that when the levels of PW are high, this will lead to positive affectivity and life satisfaction, which again spillover into the work-life influencing JoS positively [53, 54]. In addition, the *job characteristics model* by Pierce et al. [55] stipulates that PW is high when workers experience meaningfulness of work, self-control, and possibilities for skill development—exactly the same conditions contributing to JoS. The current research takes the stand that in the event of positive PW, characterized by feelings of fulfillment, autonomy, and a sense of purpose, workers are more likely to find satisfaction in their jobs [29, 39, 52, 56, 57]. Additionally,

A healthy psychological condition is related to higher resilience, less stress, and a more positive attitude toward work-related issues [29]. In general, workers with high PW are much more engaged, motivated, and able to establish proper relations with colleagues [58]. This will, in turn, create the correct milieu for the thriving of JoS, as is associated with high PW, which has positive emotions and mental health. On this basis, mental wellness and job contentment are intertwined in the professional sphere [51, 59].

H3: JoS is significantly influenced by PW.

PW as mediator

The *conservation of resources theory* states that individuals have a desire to acquire, maintain, and protect resources, and when these are high, well-being is either maintained or improved [36, 37, 39]. A positive OC therefore enriches employees with psychological resources like support, autonomy, and good relationships, leading to increased PW [60]. In turn, enriching PW is a psychological resource whereby the more individuals can invest in their work role, the greater the JoS level is experienced [25, 29, 46]. In this respect, if individuals feel and

perceive that it is safe to work in, be valued, and committed to working in such a climate, they would have a positive effect on their PW [20, 23]. In return, higher levels of PW act as a mediator by influencing employee perceptions regarding JoS [29, 54].

More specifically, the likelihood of employees who have higher levels of PW experiencing intrinsic meaning and fulfillment in their job roles is greater; hence, resulting in higher JoS [11]. Consequently, the effect of OC on JoS becomes not only direct but also significantly mediated by the PW of employees, underlining the complex interrelationship between organizational environment, mental well-being, and overall JoS.

H4: OC–JoS relationship is significantly mediated by PS.

TI as moderator

According to the *job description model*, job resources—like technological tools and support—moderate the impact of job demands on employee well-being and satisfaction [61]. In this context, technological influence (*TI*) can be considered an important job resource [62] and a necessity to improve educational experience and paradigm [63]. A positive OC enhances the work environment, making it supportive and collaborative in nature [64]; technological integration would support communication and collaboration in tasks, improving efficiency [30, 65]. TI will then have a moderating effect to enhance this positive contribution of a favorable OC toward JoS. Proper use of technology optimizes work processes and equips the workers with the tools to find success [32], further entrenching the notion that a positive OC and heightened JoS are more strongly linked. Moreover, recent investigations based in the education sector of China have also emphasized the causal role of TI in the formation of online education among studies in China [66, 67]. It is for this reason, in the pursuit of making technology an organizational strategic asset in the driver of employee satisfaction from within a positive working climate, that the moderating role of TI should be understood [68].

H5: The influence of OC on JoS is moderated by TI.

Figure 1 the black arrows indicate direct effects, the dashed blue line indicates mediation, and the orange moderation effects.

Research methodology

Data collection and sampling

The research is entirely characterized by its quantitative approach. We used quantitative research because it provides very accurate, quantifiable, and objective data that can be statistically analyzed to identify causal relationships, correlations, and patterns [69]. Besides, quantitative research reproduces studies, increasing their reliability and validity [70]. To be more precise, we adopt a cross-sectional survey design methodology, which is rooted in the post-positivism worldview assumptions as presented by Ghasemy et al. [71]. In addition, it is time-effective and cost-effective for data collection from a large number of subjects within a relatively short time span [72].

Furthermore, we established a database consisting of nearly 1500 WeChat accounts belonging to academics in the realm of Chinese higher education. This database

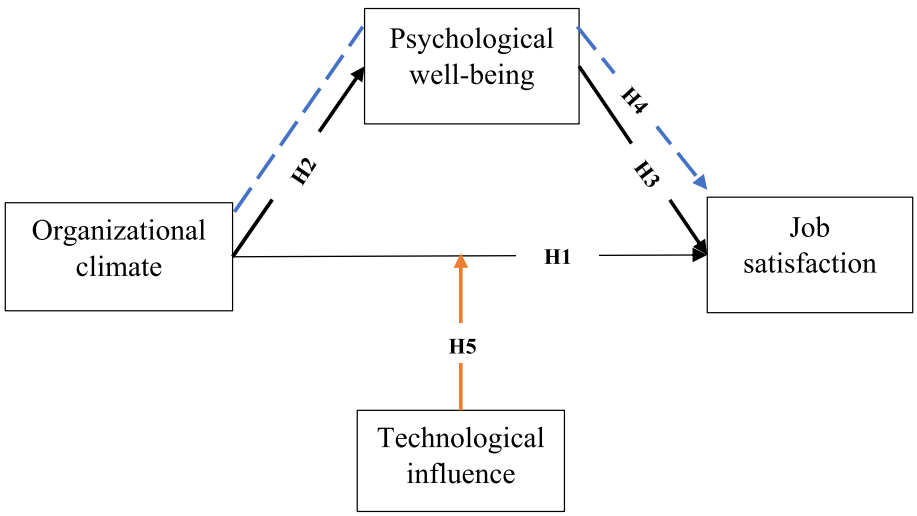

Fig. 1 Proposed model

served as the target population for our study and was subsequently utilized as the input for the Star a Chinese online survey administration platform (https://www.wjx.cn). Furthermore, we supplemented this database with a cover page containing explicit instructions on how to effectively complete the survey, as well as ethical considerations pertaining to the privacy and the voluntary nature of their participation. The distribution of the survey yielded a total of 736 responses, procured through the utilization of a simple random sampling technique [73] given that it enhances the generalization of outcomes. This method resulted in a response rate of 49.0%. Among these responses, a subset of 46 surveys was identified as partially completed and subsequently excluded from the dataset resulting in 690 valid responses. In addition, the investigation utilized the methodology delineated by Kline [74], advocating that each element within a measurement scale must possess a minimum of 10 reactions. Hence, taking into account the four variables encompassing 20 elements in their entirety, the investigation necessitates a sample size of 200. However, to enhance the generalizability, the study used overall 690 participants with valid responses for the analysis.

Pre-test

The process of translating the questionnaire from English to Chinese and Chinese to English employed the back-translation method proposed by Brislin [75]. The experts meticulously scrutinized all differences that arose. In order to validate the content of the questionnaire, the measurement instrument was sent to three full professors currently working in the leading universities. Incorporating their recommendations, slight modifications were implemented. To enhance clarity, a pilot study was executed, and the questionnaires were given to 50 educators for their input. No revisions were found to be required for the questionnaires based on the feedback received.

Respondents information

The individuals participating in this study are faculty members (lecturers, assistants, associates, and full professors) employed in educational institutions in China. Before proceeding, it is important to note that the data for this study were collected randomly through the use of online platforms. Out of 690 participants, nearly two-thirds ($n=443$, 64.2%) were female, and one-third ($n=247$, 35.8%) were male. Concerning age, ($n=168$, 24.3%), ($n=196$, 28.4%), ($n=228$, 33.0%), and ($n=98$, 14.2%) were 18–25, 26–35, 36–45, and over 45 years old, respectively. In addition, ($n=98$, 14.2%), ($n=263$, 38.1%), and ($n=329$, 47.7%) held bachelor's, master's, and doctorate level education, respectively. Additionally, ($n=167$, 14.6%), ($n=295$, 42.8%), and ($n=228$, 33.0%) had 1–5, 6–10, and over 10 years of working experience, respectively. Regarding their positions, ($n=101$, 14.6%), ($n=328$, 47.5%), and ($n=261$, 37.8%) were lecturers, assistant/associate professors, and full professors, respectively.

Common method bias

There is a divergence of opinions regarding the relevance of common method bias when using partial least squares structural equation modeling (PLS-SEM) with SmartPLS software, as noted by Hair et al. [76]. Although this concern is not deemed a primary issue in PLS-SEM applications with SmartPLS [76], an evaluation of full collinearity using the variance inflation factor (VIF) test was introduced due to the presence of behavioral variables in the proposed framework. This test is suggested to identify potential instances of common method bias [76]. The results of the present study indicate that the VIF test value is less than 3.3 [76], which is considered an indication of non-pathological collinearity. This suggests no significant contamination of the model by common method bias.

Statistical tools

According to Hair et al. [76], since the research was a predictive-explanatory study, the appropriate analytical method to be adopted was PLS-SEM. PLS-SEM has an edge over Covariance-based structural equation modeling (CB-SEM) given that when the focus of the research is on prediction and theory development, rather than theory testing [77]. Additionally, PLS-SEM would be more suitable in complex models with a large number of indicators, particularly when data has violated some of the stringent assumptions underlying CB-SEM regarding multivariate normality and large sample sizes [77, 78]. Furthermore, PLS-SEM works well for small sample sizes and provides robust estimation and analysis [79]. For example, according to recent research, by Hair and Alamer [77] PLS-SEM has the advantage of flexibility and is suitable for doing exploratory research, which places it at the forefront of preferences within disciplines such as social sciences.

Besides, the use of PLS-SEM is increasingly widespread and widely acknowledged in several disciplines [80–82] including education such as Liu et al. [83] applied it in the Chinese educational sector, while Hassan et al. [84] used it in the Pakistani educational sector. The primary analysis using PLS-SEM focused on R^2 of endogenous variables, effect sizes, predictive relevance of effects, prediction errors, and the statistical inference of path coefficients. Additionally, the measurement models and the

structural model were estimated using PLS-SEM under the SmartPLS software [85].

Measures

The responses were recorded on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). In this research, four measurement scales of OC, PW, TI, and JoS variables were used. Commonly, five items adapted from [86, 87], were used to measure the OC construct. In addition, five items adapted from Ho and Au [88], were used to measure the JoS construct for educators. Similarly, this study adopted five items from Ibrahim et al. [89] to measure the PW of educators. Lastly, the TI construct was measured with five items adapted from Spieth et al. [90].

Results

Measurement (outer) model evaluation

Next, the suitability of the measurement model is assessed with respect to the reliability and validity of the variables. Cronbach's alpha–CA and composite reliability–CR were computed, ranging from 0.70 to 0.95, ensuring reliability according to Hair et al. [76] (see Table 1). The convergent validity was also assured because all average variance extraction–AVEs are above 0.50 and all construct indicator loading values are greater than 0.70, considered acceptable as per Hair et al. [76] (see Table 1).

Discriminant validity was assessed using two parameters: the Fornell and Larcker criterion and a heterotrait-monotrait ratio–HTMT. Table 2 outcomes affirmed that the bolded diagonal value for each variable (JoS, OC, PW, and TI) exceeded the correlation values between constructs [91].

Regarding the second criterion of discriminant validity, the HTMT ratio in Table 3 demonstrates that all variables' HTMT ratios were below the acceptable threshold of 0.85 and 0.90 [71, 76], indicating no discriminant validity issues.

Table 2 Discriminant validity (Fornell-Larcker criterion)

Construct	JoS	OC	PW	TI
Job satisfaction (JoS)	**0.876**			
Organizational climate (OC)	0.717	**0.899**		
Psychological well-being (PW)	0.763	0.692	**0.898**	
Technological influence (TI)	0.725	0.576	0.646	**0.858**

Table 1 Constructs reliability and convergent validity

Construct	Indicators	Factor loadings	CA	CR	AVE	VIF
Organizational climate (OC)	OC1: "In our university, leadership or management is supportive."	0.897	0.941	0.941	0.809	2.314
	OC2: "In our university communication is open and transparent."	0.92				
	OC3: "Our university values faculty contribution."	0.919				
	OC4: "Our university offered a positive culture in our workplace."	0.881				
	OC5: Our university offered a supportive working environment."	0.878				
Psychological well-being (PW)	PW1: "My job is meaningful; it fulfills me."	0.918	0.94	0.941	0.807	2.371
	PW2: "Our university facilitates my psychological well-being."	0.928				
	PW3: "I found myself relaxing."	0.923				
	PW4: "My job makes me feel that life is meaningful."	0.854				
	PW5: "I experience positive feelings the whole day."	0.866				
Technological influence (TI)	TI1: "I incorporate technology-based applications into my daily activities."	0.848	0.911	0.912	0.737	2.057
	TI2: Technology application enables me to complete my tasks."	0.836				
	TI3: "Within our university and team technology enhances collaboration and communication."	0.862				
	TI4: "I am comfortable in using the technological implements of our university."	0.87				
	TI5: Our university keeps updating and introducing new technological tools that support our work."	0.875				
Job satisfaction (JoS)	JoS1: "Overall, I am satisfied with my job."	0.868	0.924	0.925	0.768	
	JoS2: "I am satisfied with the daily activities involved in my job."	0.905				
	JoS3: "My work enables me to feel successful."	0.891				
	JoS4: "I am satisfied with my work environment."	0.86				
	JoS5: "I do feel that, within my role, I am valued and appreciated."	0.856				

Table 3 Discriminant validity (HTMT ratio criterion)

Construct	JoS	OC	PW	TI
Job satisfaction (JoS)				
Organizational climate (OC)	0.767			
Psychological well-being (PW)	0.819	0.735		
Technological influence (TI)	0.788	0.621	0.698	

Structural (inner) model evaluation

After assessing the measurement model for convergent and discriminant validity, the subsequent phase involves validating the structural model. This process comprises five crucial steps: (1) evaluating collinearity, (2) examining path coefficients (β) or hypotheses testing, (3) calculating the percentage of variance explained (R^2), (4) determining predictive relevance through Q^2, and (5) assessing the goodness of model fit.

Concerning the first metric, collinearity assessment, Table 1 illustrates that all constructs' values range between 1.584 and 2.371, below the acceptable limit of 3.0 [76], indicating the proposed model is free from collinearity concerns. Additionally, the hypotheses' significance was assessed using a bootstrapping method with 5000 resamples. The empirical findings reveal that all hypothesized paths exhibited significance (p-value < 0.05); therefore, *H1–H5* were supported (see Table 4; Fig. 2). Moreover, the values of R^2 for the endogenous latent constructs PW and JoS signify the proposed model's explanatory power, indicating the extent to which the exogenous variable OC explains the endogenous variables PW and JoS. R^2 values range from 0 to 1, with higher values indicating greater predictive accuracy [76]. Specifically, the R^2 value for PW was 0.724, implying that the combined influence of OC, PW, and TI accounts for 72.4% of the variation in JoS (see Fig. 2).

Furthermore, in the assessment of predictive relevance, the study employed Q^2. Typically, Q^2 is computed through the blindfolding procedure, using the following formula (see Eq. 1).

$$Q^2 = \frac{(1 - SSE)}{SSO} \tag{1}$$

It is a technique involving the omission and re-estimation of data points. Essentially, Q^2 indicates how effectively the empirically collected data can be reconstructed using the PLS parameters and model [76]. When the Q^2 value for a specific construct exceeds zero, it signifies the predictive relevance of the path model for that dependent variable. Table 4 illustrates that the Q^2 values for PW and JoS were 0.384 and 0.548, suggesting an acceptable level of predictive relevance.

Lastly, when using the PLS-SEM approach through SmartPLS, the standardized root-mean-square residual (SRMR) is suggested to check the overall model fit [76]. SRMR is an objective measure of goodness of fit for a model, where a value of zero indicates a perfect fit. A value below 0.08 is considered indicative of a good fit [76] (see Table 4).

Figure 2 illustrates the proposed relationship path coefficients, their indicators loadings, and their level of significance.

Table 4 Inner or structural model evaluation

Hypothesis	Relationships	βeta	S.D	t-value	*p*-value	Decision	f^2
Total effect							
	OC → JoS	0.562	0.040	14.124**	0.000	Accepted	
Direct effect							
H1	OC → JoS	0.332	0.041	8.169**	0.000	Accepted	0.173
H2	OC → PW	0.692	0.026	27.012**	0.000	Accepted	0.919
H3	PW → JoS	0.332	0.045	7.321**	0.000	Accepted	0.168
Indirect effect							
H4	OC → PW → JoS	0.230	0.032	7.128**	0.000	Accepted	
Moderation effect							
H5	TI x OC→ JoS	0.100	0.026	3.919**	0.000	Accepted	0.037

R^2 (JoS) = 0.724 and (PW) = 0.479

Q^2 (JoS) = 0.548 and (PW) = 0.384

SRMR = 0.040

S.D Standard deviation

**p < 0.001

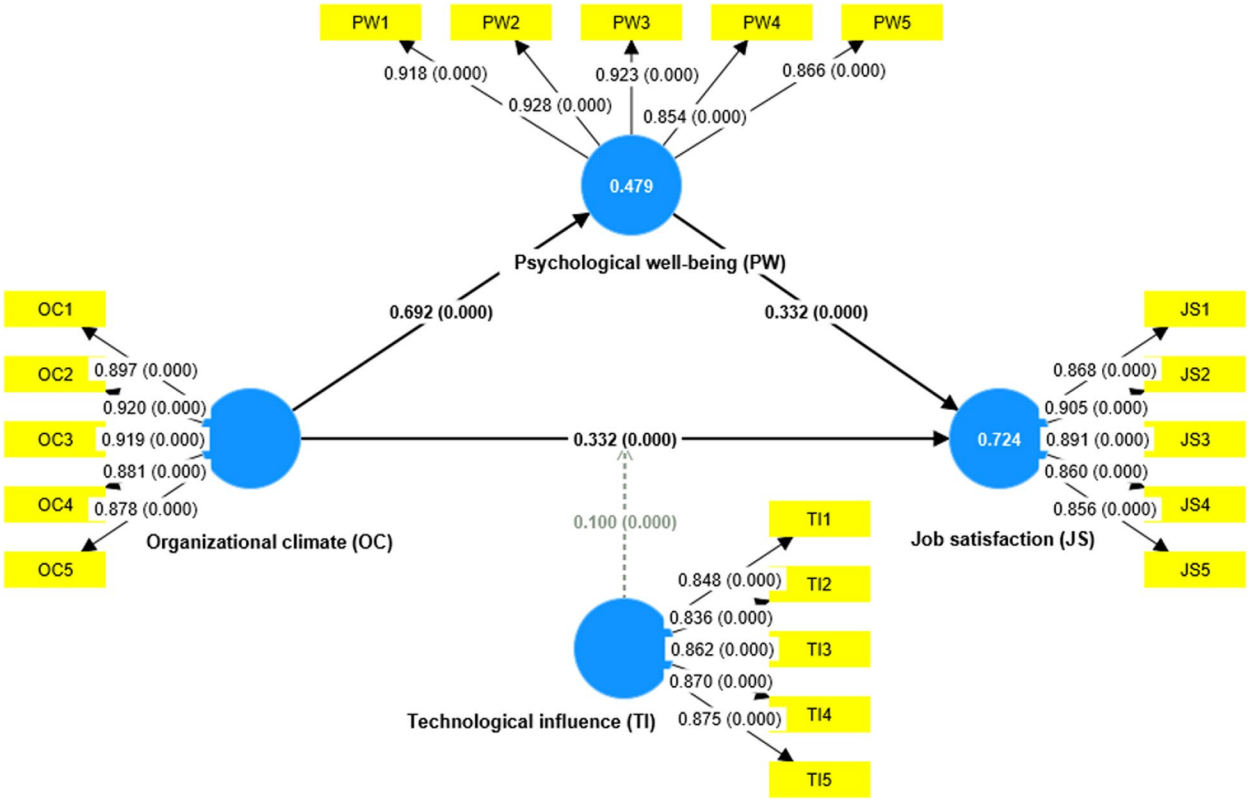

Fig. 2 Bootstrapping result

Mediation analysis

To explore the mediating impact of PW, the bootstrapping technique was applied to estimate direct, indirect, and total effects. As outlined in Table 4 and illustrated in Fig. 2, PW exhibits positive and statistically significant effects on JoS, both directly and indirectly. In the computation of the mediation of PW, the variance accounted for (VAF) formula, suggested by Hair et al. [76], was employed (see Eqs. 2 and 3).

$$VAF = \frac{Indirect\ effect}{Direct\ effect} \tag{2}$$

$$\begin{aligned} Total\ effect &= Direct\ effect + Indirect\ effect \\ \mathrm{PW}_{\mathrm{Total\ effect}} &= 0.332 + 0.230 = 0.562 \\ \mathrm{VAF}_{\mathrm{PW}} &= \frac{0.230}{0.562} = 0.409\ or\ 40.9\% \end{aligned} \tag{3}$$

According to Hair et al. [76], the VAF values falling less than 20% reflect no mediation, if between 20 and 80% represents partial, and if above 80% illustrates full mediation. The findings of the current study revealed a 40.9% indicating partial mediation of PW.

Moderation analysis

The study used widely used effect size (f^2) formula proposed by Cohen [92] to evidence the moderation effect of TI (see Eq. 4).

$$\begin{aligned} f^2 &= \frac{R^2 of\ model\ with\ moderator - R^2 of\ model\ without\ moderator}{1 - R^2 of\ model\ with\ moderator} \\ f^2 &= \frac{R^2 model\ with\ TI - R^2 of\ model\ without\ TI}{1 - R^2 of\ model\ with\ TI} \\ f^2 &= \frac{0.724 - 0.651}{1 - 0.724} = 0.265 \end{aligned} \tag{4}$$

As per Cohen [92], the values 0.02, 0.15, and 0.35 represent minimal, moderate, and substantial f^2 for the constructs. The study results evidenced that TI attained the targeted f^2 values, which infers that TI (moderator) has medium effect on the OC–JoS relationship.

Result discussion

The results indicated that JoS is positively and significantly influenced by OC (Beta = 0.332, $t = 8.169$, $p = 0.000$), thereby, *H1* was supported. This finding infers that the OC is perceived as fostering a positive and inclusive environment, indicating a workplace

that values collaboration and inclusivity. Moreover, the acknowledged contribution of leadership styles to trust and camaraderie emphasizes the role of leadership in creating a supportive atmosphere. The overall influence of the OC on JoS reinforces the idea that a positive work environment significantly contributes to teachers' overall JoS. This result is consistent with prior work of [40, 41].

This positive influence extends to PW, where respondents express a sense of purpose and fulfillment in their work, indicating a positive psychological state (Beta = 0.692, $t = 27.012$, $p = 0.000$), therefore, *H2* was supported. The positive impact of organizational support on PW is highlighted, showcasing how the OC plays a crucial role in influencing teachers' mental and emotional well-being. This, in turn, is integral to shaping overall JoS, as evidenced by respondents finding their work meaningful, fulfilling, and providing satisfaction in terms of personal and professional growth (Beta = 0.230, $t = 7.128$, $p = 0.000$), Thus, H4 was supported. These results are in line with prior work of [21, 25, 29, 42, 44, 46, 47].

Furthermore, teachers express a profound sense of purpose and fulfillment in their work, indicating a positive psychological state associated with the intrinsic value they derive from their professional roles (Beta = 0.332, $t = 7.321$, $p = 0.000$), therefore, *H3* was supported. This finding indicates the acknowledgment that PW is positively influenced by organizational support and emphasizes the role of a supportive work environment in enhancing teachers' mental and emotional welfare. The crucial role attributed to PW in shaping overall JoS highlights the significance of teachers' mental and emotional states in determining their satisfaction levels. As teachers perceive their work as meaningful, fulfilling, and providing satisfaction in terms of personal and professional growth, it becomes clear that PW acts as a driving force behind their overall JoS. This finding is in line with prior work of [29, 51, 58, 59].

Regarding the last hypothesis, the study results evidenced that the influence of OC on JoS is positively and significantly moderated by TI (Beta = 0.100, $t = 3.919$, $p = 0.000$), hence, *H5* was supported. The positive moderation suggests that technology is a facilitator of the positive effect of a conducive OC on teachers' satisfaction. What this may mean is that the inclusion of technology in educational settings, either in the form of innovative teaching tools, effective communication systems, or efficient administrative procedures, adds up to the overall JoS of teachers, especially where the OC is already good. It means that a supportive OC and good technological support would interact to create a more satisfactory work experience for teachers. The findings agree with [7, 93].

Conclusion and implications

This paper concludes the key role of OC in influencing the educators' JoS and PW within the Chinese higher education setup. The positive contribution of OC in the JoS obviously makes a case for an inclusive and supportive work atmosphere, leadership styles, and overall atmosphere of the organization. The study also establishes a strong link between OC and PW, indicating that a positive OC contributes to the PW of teachers in a way that makes them feel that their work is purposeful and full of meaning. This research also brings out the mediating role of PW in the relationship between OC and JoS. This underscores the fact that these variables are in a linked context. The study further reveals the moderating influence of TI on the OC-JoS relationship, a pointer to the fact that technology is key to fully enhancing the positive impact of an OC on educators' JoS.

Theoretical implications

The theoretical implications of this research are threefold. First, it adds to the extant literature by filling the research gap in understanding subtle dimensions of OC that have profound effects on JoS among educators [11, 16, 86]. The research also contributes to the extension of the theoretical framework by underlining the mediating role of PW [25, 27, 54] and the moderating effect of TI [32, 68], in a more complete understanding of the complex interplay of variables in the education sector context.

Practical implications

This research offers crucial actionable strategies with significant practical implications for educational institutions and policy formulation. First and foremost, educational administrators need to keep a personal and engaging atmosphere by way of regular interaction with teachers, giving the needed feedback, and recognizing hard work. Teachers' PW and JoS are expected to increase as a result of these behaviors, which also foster a sense of belonging and trust. Second, there needs to be a clear and open channel for communication. Regular staff meetings, suggestion boxes, and open-door policies make teachers feel heard and respected, thus tending to reinforce engagement and satisfaction.

Additionally, educational entities have to offer well-being programs for teachers with regard to mental health and the promotion of good work-life balance. Counseling, mindfulness workshops, and wellness days help greatly to raise teachers' PW. Furthermore, technology plays a significant part in relieving instructors of a heavy workload in administrative tasks, which helps them perform better in terms of student engagement and teaching methods. Tools like an automated grading system,

learning management systems, and virtual collaboration platforms, may save much stress and massively improve JoS.

Limitation and future research direction

Despite the valuable insights provided, this study has limitations. The data collection method, relying on online platforms might introduce biases, and the cross-sectional design limits establishing causation. Future research could employ longitudinal designs to explore the dynamic relationships over time. Additionally, the study focuses on the higher education sector in China, limiting generalizability. Comparative studies across different cultural and educational contexts would offer a broader perspective. Further exploration of specific contextual factors influencing the mediating role of PW and the moderating effect of TI would contribute to a more nuanced understanding of these relationships. Moreover, our research only tested the moderation effect on the OC–JoS link; however, it suggested that future studies could investigate the effect of TI moderation on the PW–JoS link among teachers. Additionally, the role of different leadership styles such as transformational and transactional, is suggested to be explored as a moderator on the relationship between OC, PW, and JoS. Moreover, a sample from the kindergarten, junior, and high school can also be empirically examined, given that factors influencing teacher JoS in this context could be different.

Institutional review board statement

The research work was carried out with due adherence to the Ethical Principles of Psychologists and Code of Conduct by the American Psychological Association (APA) that guides such research conducted on human subjects. This research is approved by the Ethics Committee of Shandong Labor Vocational and Technical College, Shandong, China. In the research protocol itself, respect is guaranteed for the rights and privacy of participants; no harm would be caused to them in any form on account of participation. Each respondent was informed about the purely voluntary nature of the research and the confidentiality of data to be provided, including protection of privacy. The investigation met all relevant ethical standards, regulations, and guidelines on data protection and responsible conduct in research.

Informed consent statement

The participants were informed that participation in this research was purely voluntary. They were instructed on how to answer the questions, and emphasis was placed on the possibility to quit the survey at any moment if so desired with no consequences at all. It was explained to participants that their responses would be kept confidential, and all data collected solely for this research. Informed consent to participate in the study was indicated by survey completion and submission.

Publication consent statement

Not applicable.

Authors' contributions

Conceptualization, LY; formal analysis, LY; investigation, LY and ZJ; theoretical framework and hypotheses development, LY and ZJ; data collection, LY and ZJ; methodology and data analysis, LY.; supervision, LY.; validation, LY.; writing—original draft, FS; writing—review and editing, LY, LY, and ZJ. All authors have read and agreed to the published version of the manuscript.

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Availability of data and materials

The data that support the findings of this study are available from the corresponding author upon reasonable request. The data were anonymized, ensuring that there was no breach of privacy, and will be shared in a manner that respects ethical protocols and data protection regulations. The dataset will be accessible only for academic purposes, and any use of the data will recognize the original study and maintain the confidentiality of the participants.

Declarations

Competing interests

The authors declare no competing interests.

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