Shadows and light: navigating teachers' time poverty and blended teaching acceptance with social support and job satisfaction in EFL teachers' voyage

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Abstract

Background The increasing prominence of blended teaching in English instruction underscores its potential to enhance educational quality. However, the significant time commitment required may deter teachers from adopting this method due to prevalent time poverty. Despite the critical implications, research exploring the link between time poverty and acceptance of blended teaching is sparse.

Methods This study developed a theoretical model to investigate the effects of time poverty on the acceptance of blended teaching among teachers, incorporating job satisfaction as a mediating variable and social support as a moderating variable. A total of 793 English teachers from various Chinese universities participated, providing data through a structured questionnaire. The relationships were analyzed using regression and path analysis to validate the hypothesized model.

Results The analysis revealed that time poverty significantly and negatively influences university EFL teachers' acceptance of blended teaching. Job satisfaction was found to partially mediate this relationship, indicating that emotional well-being plays a critical role in shaping instructional openness under conditions of time stress. Notably, social support exhibited a dual moderating role: it exacerbated the negative impact of time poverty on both job satisfaction and blended teaching acceptance, while simultaneously enhancing the positive influence of job satisfaction on teachers' willingness to adopt blended methods.

Conclusions These findings highlight job satisfaction as a pivotal psychological mechanism through which time-related stressors affect pedagogical innovation. The complex role of social support—being facilitative in some pathways yet detrimental in others—underscores the importance of evaluating not only the presence but also the alignment and perceived utility of support systems in educational settings. For university-level EFL teachers navigating digital transformation under high workload pressures, context-sensitive and needs-matched support

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strategies are essential. This study contributes to the literature by clarifying the interactive dynamics among time poverty, job satisfaction, social support, and blended teaching acceptance, and offers practical implications for the design of more effective teacher support mechanisms in the era of educational innovation.

Keywords Time poverty, Blended teaching acceptance, Job satisfaction, Social support, EFL teachers

Introduction

Blended teaching methods, which seamlessly integrate traditional face-to-face instruction with digital technologies, are increasingly pivotal in English as a Foreign Language (EFL) education, particularly at the tertiary level [1]. This educational approach supports a dynamic learning environment by allowing for both synchronous and asynchronous engagement, which caters to diverse learning styles and enhances student interaction and accessibility [2–4]. As such, blended teaching is being recognized not merely as a supplementary tool but as an essential component in modern educational settings worldwide [5].

While the global shift toward blended learning has received growing attention, its implementation in English language education—particularly in non-English-speaking contexts like China—presents distinct pedagogical and institutional challenges [6]. University-level EFL teachers in China, in particular, often face the dual demands of mastering digital tools while sustaining high-quality language instruction [7]. However, many EFL educators lack formal training in educational technologies and must invest substantial personal time and effort to redesign their instructional practices accordingly [8–10]. These expectations intensify their existing responsibilities—such as research, curriculum development, and administrative work—resulting in increased workload and, frequently, a sense of time poverty [11, 12].

Teachers' time poverty (TTP) refers to the subjective experience of having insufficient time to meet both professional obligations and personal needs [11]. The effects of TTP are multifaceted. Psychologically, it contributes to stress, burnout, and lower job satisfaction [13, 14]. Professionally, it reduces teachers' willingness and capacity to engage with pedagogical innovation—such as blended teaching—which requires not only technical skills but also creative rethinking of content delivery [15]. For EFL educators, whose work is inherently interactive and cognitively demanding, this strain is particularly acute. Thus, understanding how TTP affects their professional behaviors is essential to improving instructional quality and teacher well-being.

In this context, two critical variables warrant attention: job satisfaction (JS) and social support (SS). Based on the Job Demands–Resources (JD-R) model, JS represents an internal motivational resource that mediates the relationship between job demands and professional outcomes. Teachers with high job satisfaction tend to exhibit stronger commitment to innovation and are more resilient in the face of challenges [16–18]. Conversely, persistent time pressure can erode JS, leading to disengagement and reduced openness to change. At the same time, SS—as conceptualized in Conservation of Resources (COR) theory—serves as an external resource that buffers the negative effects of stress. In educational settings, support from colleagues, administrators, and institutional structures can alleviate teachers' workload pressure and foster a more collaborative environment [19, 20]. For EFL teachers adapting to blended teaching, access to supportive networks can ease the transition and alleviate potential overwhelm [21].

Although extensive research has examined the effects of TTP, JS, and SS within educational settings, critical gaps remain. While TTP has been widely linked to declines in teacher well-being and professional efficacy (e.g [11, 13, 14])., relatively few studies have specifically investigated its influence on teachers' adoption of technology-infused instructional models, such as blended teaching, particularly in EFL higher education contexts. Moreover, although JS has been established as a crucial outcome of occupational conditions (e.g [16–18])., its role as a mediating mechanism connecting TTP to teachers' engagement with innovative pedagogical practices has received limited empirical attention. Furthermore, despite strong evidence that SS serves as a buffer against occupational stress (e.g [19–21])., its potential moderating role in mitigating the negative impacts of TTP on JS and BTA remains underexplored. In addition, most existing studies have examined these variables in isolation, without constructing an integrated framework that captures their interrelated pathways.

To address these identified gaps, the present study proposes and empirically tests a comprehensive model that examines: (1) the direct effect of TTP on their acceptance of BTA, (2) the mediating role of JS in this relationship, and (3) the moderating role of SS. By simultaneously exploring these direct, mediating, and moderating pathways within a unified framework, this research provides an integrated perspective that has been largely overlooked in prior studies. Moreover, it specifically focuses on university-level EFL teachers, a population underrepresented in existing literature, thereby contributing new contextual. Thus, the specific research questions are raised as follows:

RQ1. To what extent does teachers' time poverty directly influence their job satisfaction and acceptance of blended teaching methods?

RQ2. Does job satisfaction mediate the relationship between teachers' time poverty and their acceptance of blended teaching methods?

RQ3. To what extent does social support directly predict teachers' job satisfaction and their acceptance of blended teaching methods?

RQ4. Does social support moderate the effects of time poverty on job satisfaction and blended teaching acceptance?

Understanding these relationships is crucial for developing targeted interventions that enhance teacher support systems, improve job satisfaction, and address time management challenges in educational settings. Specifically, this study can inform policy adjustments that prioritize not only the technological aspects of teaching but also the human factors that influence educational effectiveness. By addressing the root causes of stress and dissatisfaction among teachers, educational leaders can foster an environment where innovative teaching methodologies are more readily embraced, ultimately leading to improved educational outcomes and student success.

Literature review

Teachers' time poverty and blended teaching acceptance
In today's fast-paced society and lifestyle, time poverty seems to have become a common experience and psychological phenomenon [22, 23]. Although scholars have yet to reach a consensus on its definition, it is generally described from both objective and subjective perspectives. Objectively, time poverty refers to the lack of sufficient time to allocate to various life tasks [24], often measured through discretionary time [25]. Subjectively, time poverty denotes individuals' perceived insufficiency of time to accomplish necessary tasks [26], making its assessment inherently relative [27]. Moreover, time poverty reflects the interplay between workload and work intensity, where increases in either dimension heighten perceived time pressure [22].

Among teachers, time poverty posits that the overwhelming accumulation of responsibilities—teaching, research, administration, and professional development—without corresponding temporal resources results in intensified stress [11, 28]. Compounded by the rapid evolution of educational technologies, teachers are increasingly expected to update their technical skills without receiving additional time allowances [29]. Furthermore, as the boundary between work and family life becomes increasingly blurred, work-related tasks often intrude into personal time, exacerbating work-family conflict and undermining familial responsibilities [30].

Extant literature indicates that individuals experiencing time poverty suffer significant declines in subjective well-being and creativity, often leading to mental health complications and diminished organizational productivity [26, 31]. Within the educational sphere, time poverty has been shown to profoundly disrupt teachers' professional efficacy and psychological equilibrium. Empirical studies have consistently linked perceived time scarcity among teachers to heightened emotional exhaustion, frustration, and maladaptive work behaviors, such as excessive workload intensification [13, 14, 32]. Prolonged exposure to time pressure may further culminate in burnout, ultimately eroding teachers' long-term commitment to the profession and compromising both instructional quality and institutional stability [33]. Collectively, these findings underscore that time poverty represents a critical threat not only to educators' personal and professional development but also to the broader educational environment and student outcomes [11].

In addition to the considerable body of research examining the effects of time poverty on teachers' well-being, mental health, and work performance, several studies have also highlighted its negative impact on teachers' adoption of new teaching methods and technologies. Hu, Yuan [34] emphasized that integrating information and communication technologies (ICT) into teaching practice demands substantial time and effort, exacerbating existing workload pressures on educators. Likewise, Polly, Martin [35] identified the extensive time required to learn, adapt, and implement digital tools—along with competing professional responsibilities—as a major impediment to faculty members' effective use of educational technologies. Consistent with these findings, van Leeuwen and Rummel [36] reported that limited time resources hinder both the integration of new technologies and decision-making processes in educational settings, while Jamaluddin, Shah [15] further asserted that temporal constraints severely restrict teachers' capacity for professional development and pedagogical innovation.

Among emerging instructional models, blended teaching—which integrates the strengths of online and traditional classroom instruction—has gained increasing prominence for offering a richer, more flexible educational experience [4]. In EFL contexts, blended teaching has been recognized for enhancing students' language proficiency, learning motivation, and autonomous learning skills [3, 37, 38], providing learners with greater flexibility to access materials at their own pace and engage with digital platforms [2].

However, despite these pedagogical advantages, successful implementation of blended teaching largely depends on teachers' willingness and capacity to adopt this model [39]. Notably, the integration of blended

teaching methods imposes substantial demands on teachers' time, effort, and cognitive resources. While operational challenges such as technological barriers and limited institutional support have been documented [3, 38], recent research emphasizes that time constraints represent a particularly critical barrier. Hapizah, Mulyono [40] found that among 27 university lecturers surveyed, the substantial amount of time required emerged as one of the four primary barriers to the implementation of blended teaching in higher education. Similarly, Ali [41] specifically identified that the adoption of blended teaching methods in higher education is critically constrained by extensive time demands, exacerbating existing workload pressures among faculty.

Given that blended teaching demands significant temporal and cognitive resources, teachers experiencing higher levels of time poverty may be particularly reluctant to invest in its adoption. Thus, it is reasonable to expect that time poverty will negatively influence teachers' acceptance of blended teaching approaches.

Job satisfaction as the mediator

Job satisfaction among teachers is defined as the extent to which educators feel content with their professional environments [19]. It encompasses feelings of fulfillment and gratification derived from various aspects of their work, such as emotional well-being, personal accomplishment, workload, collegial relationships, perceptions of student behavior, and specific job responsibilities [42–44].

High levels of job satisfaction are crucial, as they significantly determine teachers' dedication to their profession [45], effectiveness in the classroom [46], and motivation to excel [20]. A comparative study across 38 countries revealed that higher teacher job satisfaction is associated with greater engagement and commitment, ultimately leading to improved student outcomes [47]. Moreover, satisfied teachers tend to be more open and receptive to innovative teaching practices, including blended learning and technology integration. Research findings indicate that job satisfaction enhances teachers' engagement and proactive performance [48], fosters creative endeavors [49], and positively correlates with innovative work behaviors [50]. Specifically, Hiett [18] demonstrated that affective job satisfaction is moderately and significantly associated with teachers' perceptions of the compatibility and relative advantage of blended teaching, suggesting that emotional satisfaction plays a critical role in shaping teachers' acceptance of new pedagogical approaches.

Building upon these insights, it has been observed that teachers' time poverty tends to negatively impact job satisfaction, which subsequently influences various aspects of their educational practice. In particular, higher levels of job satisfaction can significantly promote the acceptance of innovative methods such as blended teaching.

Therefore, it is essential to understand job satisfaction's mediating role in the relationship between the challenging demands of time poverty and the adoption of blended teaching strategies.

Prior research in educational settings has increasingly highlighted the mediating role of job satisfaction in linking occupational conditions to professional outcomes. For instance, a study by Yurt [51] demonstrated that job satisfaction mediated the relationship between collective teacher efficacy and teacher burnout, suggesting that a stronger sense of collective efficacy can enhance teachers' satisfaction, thereby reducing emotional exhaustion. Similarly, longitudinal evidence from Chinese junior middle school teachers indicated that job load influenced subsequent job exhaustion indirectly through its negative association with job satisfaction [52]. Additionally, research conducted in higher education institutions found that job satisfaction mediated the relationship between work environment and employee performance, underscoring its function as a key psychological mechanism in translating organizational support into individual engagement and effectiveness [53].

Collectively, these studies affirm that job satisfaction functions as a pivotal mediating mechanism within educational contexts, linking external demands and supports to EFL teachers' professional attitudes, innovative practices, and well-being. However, its effect may depend on the presence and relevance of supportive systems. Thus, the potential moderating role of social support warrants further attention in understanding how EFL teachers manage time constraints and embrace instructional innovation.

Social support as the moderator

Social support, defined as the received or perceived assistance that enhances an individual's ability to cope with stress and adversity [54], can originate from family, friends, colleagues, and organizations [55–58], benefiting both mental and physical health across diverse contexts [59, 60]. Heaney and Israel [61] classified these supportive acts or behaviors into categories such as emotional support, instrumental support, informational support, and appraisal support.

In the educational domain, social support includes various forms of networks and relationships that help teachers manage the professional demands and personal challenges associated with their roles. These forms of support collectively strengthen teachers' resilience: emotional support boosts morale and motivation; instrumental support alleviates practical burdens, enabling teachers to concentrate on core instructional responsibilities; informational support facilitates the adoption of new methodologies; and appraisal support fosters continuous

professional development through reflective practice [61].

Research indicates that teachers who perceive higher levels of social support report greater job satisfaction and lower levels of stress. For instance, Jentsch, Hoferichter [62] identified a positive association between teachers' supportive working environments and their job satisfaction, while [63] found that social support, alongside positive coping strategies, acts as a protective factor for maintaining high levels of job satisfaction among kindergarten teachers. Similarly, Erdoğan, Şahin [64] highlighted that collegial relationships within supportive school cultures significantly contribute to teachers' sense of professional fulfillment. Additionally, studies have consistently emphasized the protective role of social support in alleviating stress and burnout among teachers. For instance, Salami [65] highlighted how personality traits interact with social support to reduce job stress-related burnout, while Mérida-López, Gómez [66] examined the combined effects of social support, emotional intelligence, and work engagement on teachers' intentions to quit. Given these findings, it is reasonable to expect that social support may also buffer the adverse effects of time poverty on teachers' professional outcomes.

In addition to its role in alleviating stress and enhancing job satisfaction, social support critically facilitates teachers' engagement with innovative teaching practices such as blended teaching. The social influence exerted by peers and institutional management plays a pivotal role; support and positive appraisals from colleagues and administrators markedly encourage teachers to embrace blended instructional strategies [67, 68]. Such social endorsements help mitigate apprehensions and strengthen the confidence necessary for transitioning from traditional to blended teaching modalities. Furthermore, continuous professional development tailored to blended teaching, supported by robust institutional systems—such as technical assistance, resource provision, and collaborative networks—further facilitates teachers' integration of digital approaches into their pedagogical practice [1, 7, 36].

Furthermore, recent empirical studies have provided support for the moderating role of social support in educational contexts. Zhu, Huang [69] found that social support significantly moderated the relationship between time poverty and emotional exhaustion among Chinese primary and secondary school teachers. Similarly, Ibrahim, Zalam [70] reported that social support moderated the impact of job demands on teachers' depression and anxiety, highlighting its buffering function for psychological well-being. In addition, Park and Lee [71] demonstrated that social support moderated the link between adult attachment and depression among secondary school teachers, with colleague and family support emerging as particularly influential.

Taken together, the evidence suggests that social support not only promotes teachers' professional well-being and openness to innovation, but also serves as a protective mechanism against the detrimental effects of occupational stressors like time poverty. This underscores the potential moderating role of social support in shaping teachers' job satisfaction and their adoption of blended teaching practices.

Theoretical framework and hypotheses development

Grounded in Cognitive Load Theory [72], the Job Demands-Resources (JD-R) Model [73], and Conservation of Resources (COR) Theory [74], the present study develops a conceptual framework to explore how teachers' time poverty influences their acceptance of blended teaching methods, considering job satisfaction as a mediator and social support as a moderator. This section integrates theoretical explanations with hypothesis development to establish a coherent research model.

Cognitive load theory and direct effects of time poverty

Cognitive Load Theory (CLT) posits that human cognitive capacity is inherently limited, and excessive task demands can overload working memory, impairing performance and decision-making [72]. In educational contexts, teachers facing acute time poverty must simultaneously manage instructional duties, administrative responsibilities, professional development, and technological adaptation, all of which substantially heighten their cognitive load.

Under such conditions, teachers are more likely to prioritize familiar, routine practices over engaging with cognitively demanding innovations such as blended teaching. This theoretical perspective aligns with empirical findings indicating that time scarcity hinders the adoption of educational technologies and innovative pedagogical approaches [15, 35, 36].

Furthermore, Scarcity Mindset Theory [75] suggests that when individuals experience resource scarcity, such as limited time, their cognitive focus narrows toward immediate, pressing tasks, often at the expense of longer-term investments. Consequently, teachers experiencing high levels of time poverty may prioritize short-term classroom survival needs over the exploration and integration of blended learning strategies.

Beyond these theoretical perspectives, recent empirical studies have also supported the notion that the successful integration of technology-infused instructional models, such as blended teaching, imposes considerable time and effort demands on teachers [34, 35, 41]. These findings further substantiate the expectation that time

poverty would negatively influence teachers' acceptance of blended teaching approaches.

Drawing on both theoretical and empirical foundations, it is posited that:

H1 *Teachers' time poverty negatively impacts their acceptance of blended teaching methods.*

Moreover, the psychological pressures associated with time poverty have been consistently linked to emotional exhaustion, frustration, and diminished work satisfaction among educators [13, 14]. Given that job satisfaction is a critical indicator of teachers' psychological well-being and professional engagement, it is further hypothesized that:

H2 *Teachers' time poverty adversely affects their job satisfaction.*

Job Demands-Resources model and the mediating role of job satisfaction

The Job Demands-Resources (JD-R) Model conceptualizes job demands as aspects of work that require sustained effort and are associated with psychological costs, while job resources refer to aspects that facilitate goal achievement and personal development [73]. Time poverty, as a salient job demand, depletes psychological resources and undermines job satisfaction.

In turn, job satisfaction plays a critical role in influencing teachers' willingness to engage in innovative practices. Previous research has shown that teachers who experience higher levels of job satisfaction are more receptive to integrating blended learning strategies into their teaching [18, 48]. Further supporting this view, empirical studies in educational contexts have consistently identified job satisfaction as an important mediator linking work conditions to professional outcomes (e.g [51–53]).,.

Building on this theoretical and empirical foundation, the following hypotheses are posited:

H3 *Teachers' levels of job satisfaction are positively associated with their acceptance of blended teaching methods.*

H4 *Teachers' levels of job satisfaction mediate the negative impact of time poverty on their acceptance of blended teaching methods.*

Conservation of resources theory and the moderating role of social support

Conservation of Resources (COR) Theory asserts that individuals strive to acquire, protect, and retain valuable resources, and experience stress when these resources are threatened or lost [74]. External resources, such as

social support, serve as critical buffers against the adverse effects of resource depletion.

In the educational setting, social support, whether emotional, instrumental, informational, or appraisal, can enhance teachers' resilience to occupational stressors such as time poverty. Empirical studies have demonstrated that social support improves job satisfaction [62, 63] and fosters openness to pedagogical innovations [64].

Based on this theoretical reasoning and empirical evidence, the following hypotheses are proposed:

H5 *Social support positively predicts teachers' job satisfaction.*

H6 *Social support positively predicts teachers' acceptance of blended teaching methods.*

In addition to its direct effects, social support may also function as a moderating variable that interacts with both internal and external job demands. This proposition is supported by recent empirical studies that have demonstrated the moderating role of social support in various teacher-related stress–outcome relationships across diverse educational contexts (e.g [69–71]). Specifically, in the present study, social support is hypothesized to strengthen the positive association between job satisfaction and blended teaching acceptance, while buffering the negative effects of time poverty on both job satisfaction and instructional innovation. Therefore, the following moderation hypotheses are formulated:

H7 *Social support positively moderates the relationship between teachers' job satisfaction and their acceptance of blended teaching methods.*

H8 *Social support positively moderates the relationship between teachers' time poverty and their job satisfaction.*

H9 *Social support positively moderates the relationship between teachers' time poverty and their acceptance of blended teaching methods.*

However, it is important to acknowledge that recent developments in COR theory have begun to emphasize the possibility of support-resource mismatch—a condition in which social support, when poorly timed, misaligned with the recipient's actual needs, or accompanied by implicit obligations, may paradoxically become an additional source of strain rather than relief [76, 77]. In high-pressure environments, such as tertiary EFL teaching, receiving support may occasionally entail emotional labor, indebtedness, or new role conflicts. While the present study proceeds with the prevailing expectation of a positive moderating effect, this complexity is recognized and further discussed in light of the empirical results.
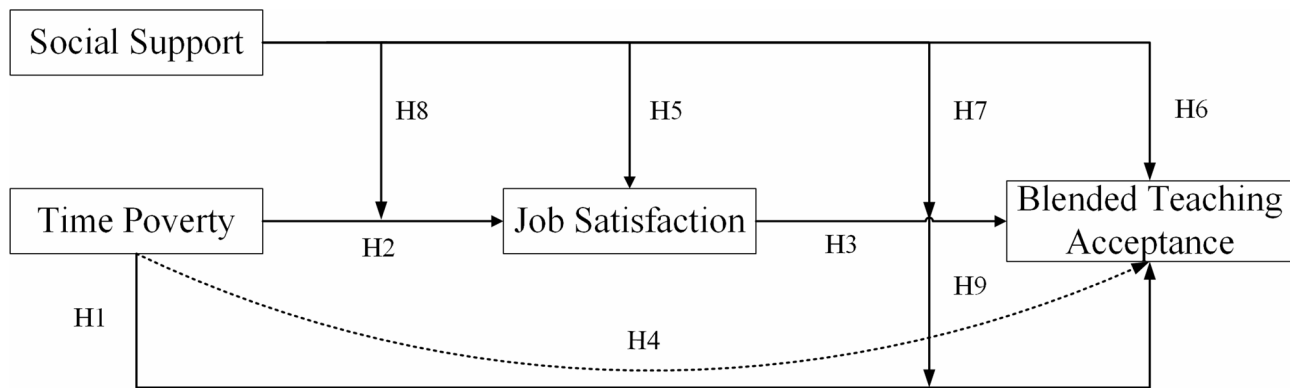
Fig. 1 Conceptual Framework of the Study

Based on the theoretical perspectives and hypotheses developed above, Fig. 1 presents the conceptual framework guiding this study. The model depicts the direct effects of teachers' time poverty on job satisfaction and blended teaching acceptance, the mediating role of job satisfaction, and the moderating effects of social support on these relationships.

Methodology

Participants and procedure

In order to analyze the impact of time poverty on the acceptance of blended teaching among university English teachers, this study collected and analyzed data form higher education institutions in eastern China. The sample was drawn from multiple universities in Fujian, Jiangxi, and Guangdong provinces, which offer diversity in terms of economic status, educational resources, and types of institutions, making the sample representative of a broad range of teacher circumstances. Specially, the sample includes comprehensive universities, normal universities, institutes of technology, as well as medical, agricultural, and finance-related institutions, covering 985 and 211 Project universities, regular undergraduate institutions, and regional colleges.

To ensure the rigor of the sampling process, we collaborated with the heads of English departments across various universities through various channels (e.g., WeChat, phone, and email). Approximately half of the English teachers in each department were assigned numbers, and participants were randomly selected by drawing lots, resulting in an initial invitation list of 1,549 teachers. Department heads facilitated direct communication with the selected teachers, who were then invited to complete an online survey administered via the WJX platform, a widely used and secure online survey tool in China. Participation was entirely voluntary, and informed consent was obtained at the beginning of the survey through an ethics statement emphasizing anonymity, the right to

Table 1 Demographic information of participants

Demographic Variables		Count	Percentage
Gender			
	male	236	29.8%
	female	557	70.2%
Age			
	below 30 years old	133	16.8%
	30 to 40 years old	361	45.5%
	over 40 years old	299	37.7%
Teaching age			
	1 to 5 years	122	15.4%
	6 to 10 years	403	50.8%
	over 10 years	268	33.8%
Received Blended Teaching training			
	Yes	292	36.8%
	No	501	63.2%

withdraw at any time, and the absence of any conflicts of interest.

Data collection officially commenced on June 15, 2024, shortly after the end of the semester's teaching activities, and concluded on July 16, 2024. A total of 838 responses were initially collected. After applying a rigorous data-cleaning procedure—including the exclusion of incomplete, invalid, or mechanically patterned responses—793 valid samples (236 male, 557 female) were retained, representing a questionnaire validity rate of 94.6%. Detailed demographic information of the participants is presented in Table 1.

Instruments

To achieve high levels of data accuracy and reliability, a carefully selected set of measurement tools was employed in this study. These instruments, crucial for capturing the nuanced dynamics of the constructs under investigation, were meticulously chosen to align with the research objectives and to substantiate the theoretical framework. To better suit the population of Chinese university English teachers, culturally and semantically adaptive adjustments were made to relevant items while

maintaining the original structure and core meaning of the scales. These adaptations aimed to ensure greater relevance to the specific work contexts and language habits of the target participants.

Moreover, to mitigate potential impacts of common method bias, multiple procedural controls were implemented during the questionnaire design stage. Specifically, neutral language was adopted in item phrasing wherever possible (within the permissible adaptation limits) to minimize social desirability effects, and all items were presented in a randomized order to disrupt cognitive expectations and reduce consistency bias. After data collection, data quality and reliability were further enhanced by screening for invalid or anomalous responses through logical consistency checks and answer time filtering.

The subsequent discussion offers a comprehensive description of the measurement instruments adopted to assess the principal constructs under investigation: teachers' time poverty, job satisfaction, social support, and acceptance of blended teaching within the context of this study.

Teacher's time poverty scale (TTPS)
Time poverty was measured using the Teachers' Time Poverty Scale [11], which consists of 7 items (e.g., "There is no autonomy in the allocation of my time"), with each item rated on a 5-point Likert scale, where "1" indicates strongly disagree and "5" indicates strongly agree. The scale is unidimensional, with higher the scores reflecting a greater perception of time poverty. This scale has been validated for use with Chinese teachers [28] and demonstrated good reliability in the current study (Cronbach's $\alpha = 0.881$).

Teacher's job satisfaction scale (TJSS)
Teacher's job satisfaction was assessed using the Career Satisfaction Scale developed by Greenhaus, Parasuraman [78]. This scale consists of five items that evaluate satisfaction with career success, overall career progress, income, advancement opportunities, and the development of new skills. Participants rated their agreement with statements such as "I am satisfied with the success I have achieved in my career" and "I am satisfied with the progress I have made toward meeting my goals for advancement" on a 5-point Likert scale, where "1" indicates strongly disagree and "5" indicates strongly agree. In this study, the scale demonstrated good reliability, with a Cronbach's α of 0.899.

Social support scale (SSS)
The assessment of social support experienced by teachers was conducted using the revised Social Support Scale adapted from Eisenberger, Huntington [79] and Zimet, Dahlem [80]. This scale contains 15 items, including three dimensions: perceived school support (9 items, e.g., "The school is willing to help me when I need a special favor"), perceived family support (3 items, e.g., "I get the emotional help and support I need from my family"), and emotional support (3 items, e.g., "I have friends with whom I can share my joys and sorrows"). Responses were asked to rate on a Likert 5-point scale ("1" indicating strongly disagree, and "5" indicating strongly agree). A higher cumulative score on the scale indicates greater perceived social support. In this study, the overall questionnaire demonstrated strong reliability, with a Cronbach's α of 0.931. The subscales for perceived school support, family support and emotional support showed Cronbach's α values of 0.943, 0.899 and 0.898, respectively.

Teacher's blended teaching acceptance scale (TBTAS)
Teacher's blended teaching acceptance was assessed using an adapted version of the Technology Acceptance Model (TAM) [81]. Based on prior research, we developed the Teacher's Blended Teaching Acceptance Scale, which includes 26 items across five dimensions: perceived usefulness (5 items, e.g., "Using blended teaching in my teaching allows me to get things done faster"), perceived ease of use (6 items, e.g., "It was easy for me to achieve what I wanted it to do through blended teaching") [82], attitude (5 items, e.g., "I think it's a good idea to use a blended approach to teaching") [83], behavioral intention (5 items, e.g., "I plan to use blended teaching for the next semester") [84, 85], and actual use (5 items, e.g., "I plan to use blended teaching for the next semester") [84]. All items were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The overall score of the scale, obtained by averaging across all dimensions, reflects the teacher's general level of acceptance of blended teaching. Higher scores on the scale indicate greater acceptance of blended teaching. In this study, the overall questionnaire demonstrated excellent reliability, with a Cronbach's α of 0.973, and α values for the subscales ranging from 0.879 to 0.930.

The scale was constructed with dimensions and measurement items carefully selected from extensively validated instruments in the extant literature and specifically adapted for the teacher population to ensure contextual relevance. Exploratory factor analysis (EFA) confirmed the scale's construct validity, with all item loadings exceeding 0.50 (see Appendix I). Confirmatory factor analyses (CFA) were conducted independently for each dimension of the scale. The model fit indices demonstrated acceptable to good levels of fit (CFI and TLI values approximated or exceeded 0.90; most RMSEA values were below 0.08; all SRMR values were below 0.08), indicating statistically acceptable measurement models with

stable factor structures. Construct validity assessment revealed composite reliability (CR) values exceeding 0.75 for all latent variables, while most average variance extracted (AVE) values approached or surpassed 0.50, supporting satisfactory convergent validity. Discriminant validity was established as the square roots of AVE values for each latent variable generally exceeded their correlations with other latent variables. The detailed factor analysis results and construct validity assessment are presented in Appendices II and III.

Data analysis
All data were processed using SPSS 29.0 (IBM Corporation, New York, USA) and Process macro (version 4.1). The analysis involved several steps. First, Harman's single-factor test was conducted to check for potential common method bias. Next, descriptive statistics and correlation analysis were performed for each main variable. Finally, the Process macro was used to construct a moderated mediation model, employing a bootstrap simulation with 5000 iterations and 95% confidence intervals. Specifically, Model 59 was selected to test the hypothesized mediation and moderation effects, as it allows for the simultaneous examination of mediation and moderation on all three paths [86]. This model was deemed appropriate given the theoretical framework of the study, which posits that moderation could occur at multiple stages of the mediation process. The bootstrap method was chosen for its robustness and precision, as it does not require the assumption of normality and helps reduce the risks of Type I and Type II errors [86, 87]. In the analysis, all continuous variables were mean-centered to minimize multicollinearity, and direct, indirect (mediated), and conditional (moderated) effects were systematically tested based on the specified model structure.

Research findings
Common method Bias
In the current study, Harman's single-factor test was employed to evaluate the potential for common method bias, as recommended by [88]. The analysis identified seven distinct factors, each with eigenvalues exceeding 1. Notably, the first factor accounted for 38.79% of the total variance. This figure falls below the 40% threshold often cited as indicative of significant common method

bias [89]. Such results suggest that common method bias does not pose a substantial threat to the validity of our findings. The low variance explained by a single factor strengthens the robustness of our methodology and provides a reliable foundation for drawing conclusions from the data.

Descriptive statistics and correlation analysis
Descriptive statistics and correlations among the primary variables of interest are detailed in Table 2. A notable finding from the analysis is the significant negative correlation between both teacher's BTA and their JS with TTP, yielding correlation coefficients of -0.326 and − 0.385, respectively (both p-values < 0.01). This suggests that higher levels of TTP are associated with lower BTA and reduced JS among teachers.

Additionally, SS does not exhibit a significant correlation with TTP. This absence of correlation might be attributed to a potential moderating effect, which warrants further investigation to elucidate the dynamics between these variables. It should be noted that there was no significant correlation between social support and time poverty, which can be reasonably explained from a methodological perspective. In moderation analysis, the independent variable (time poverty) and the moderator (social support) can be statistically independent; what truly matters is whether social support significantly alters the strength or direction of the effect of time poverty on work satisfaction or blended teaching acceptance (Hayes, 2017). Therefore, the lack of correlation does not affect the inclusion of social support as a moderator in the model for testing its moderation effect.

Furthermore, JS shows a significant positive correlation with both SS and teacher's BTA, with coefficients of 0.459 and 0.623, respectively (both p-values < 0.01). There is also a significant positive correlation between BTA and SS (r =.473, p <.01). These patterns of association provide preliminary empirical support for our research hypotheses, suggesting that SS and BTA are critical factors that contribute to JS among teachers.

Regression model test
Process 4.1 was employed to assess the mediating role of JS and the moderating role of SS in the relationship between TTP (independent variable) and their BTA

Table 2 Descriptive statistics and correlation

Variables		M	SD	1	2	3	4
1	TTP	3.18	0.69	-			
2	JS	3.28	0.74	− 0.385**	-		
3	SS	3.40	0.62	− 0.044	0.459**	-	
4	BTA	3.36	0.65	− 0.326**	0.623**	0.473**	-

Note: *N* = 793; M = Mean, SD = Standard deviation; TTP = Teachers' Time Poverty; JS = Job Satisfaction; SS = Social Support; BTA = Blended Teaching Acceptance; *p* <.05, **p* <.01, ***p* <.001

Table 3 Mediation effects

Social support	Intermediary effect	SE	t	95% Bootstrap	
				LLCI	ULCI
M - SD	−0.088	0.023	-3.826	−0.138	−0.050
M	−0.127	0.022	-5.773	−0.174	−0.086
M + SD	−0.173	0.032	-5.406	−0.240	−0.114

Note: LLCI = Low limit confidence interval; ULCI = Upper limit confidence interval, the same as below

(dependent variable). Prior to the analysis, all variables—TTP, BTA, SS, and JS—were standardized. The analysis also controlled for potential confounding factors including gender, teachers' confidence in using technology, and the level of technology training provided by the school. Regarding the control variables in this study, gender did not show a significant effect on either job satisfaction or teachers' acceptance of blended teaching, as indicated by the inconsistent signs of the confidence intervals. However, teachers' confidence in using technology during instruction and the level of technical support provided by schools exhibited significant positive effects on both job satisfaction and blended teaching acceptance. These findings suggest that, in practice, it is not gender differences, but rather the extent of technological training provided by schools and teachers' confidence in using technology in the classroom that are key factors in enhancing teachers' job satisfaction and their acceptance of blended teaching.

The results indicate that TTP exerts a significant negative impact on BTA (β = -0.125, *p* <.001), confirming H1. Additionally, TTP was found to negatively predict JS significantly (β = -0.374, *p* <.001), and JS, in turn, positively influenced BTA (β = 0.339, *p* <.001), indicating a significant indirect effect and supporting H2 and H3. The partial mediating effect of JS on the relationship between TTP and BTA was quantified as -0.127, with

the bootstrapped 95% confidence interval ranging from − 0.240 to -0.114, thereby affirming H4.

Furthermore, SS demonstrated a significant positive modulation on both JS and BTA (β = 0.235 and β = 0.339, respectively, both p-values < 0.001), which substantiates H5 and H6. The mediation of JS was examined at three levels: one standard deviation below the mean, at the mean, and one standard deviation above the mean of SS, with more comprehensive results presented in Table 3.

All three moderating paths were systematically evaluated and found to be statistically significant. Specifically, the interaction term between SS and TTP demonstrated a significant negative effect on JS, with a beta coefficient of -0.110 (*p* <.001). Similarly, this interaction term negatively influenced the BTA, with a beta coefficient of -0.104 (*p* <.001). Conversely, the interaction between SS and JS significantly and positively predicted BTA, with a beta coefficient of 0.081 (*p* <.01). This indicates that a high level of social support can further strengthen the positive effect of JS on teachers' BTA, thereby providing empirical support for H7. However, it is important to note that, contrary to our theoretical expectations, SS exhibited a negative moderating effect on the pathways from TTP to JS and from TTP to BTA. In other words, under conditions of high SS, the adverse effects of TTP on JS and BTA were more pronounced. These findings do not support H8 and H9, which hypothesized that SS would buffer the negative impact of TTP on JS and BTA. This counterintuitive result challenges conventional assumptions about the universally protective role of social support and warrants further theoretical reflection and contextual interpretation. For a more granular understanding of these moderating effects, refer to Table 4, see Fig. 2 for visual representation, and regression coefficients between all variables are shown in Fig. 3.

Table 4 Results of regression

Variables	Job Satisfaction				Blended Teaching Acceptance			
	β	t	LLCI	ULCI	β	t	LLCI	ULCI
Covariates								
Gender	0.021	0.436	−0.072	0.114	0.000	−0.009	−0.075	0.074
CON	0.147	4.113	0.077	0.217	0.085	2.935	0.028	0.141
TRA	0.066	1.854	−0.004	0.136	0.074	2.592	0.018	0.130
Main Variables								
TTP	−0.374	-12.242	−0.434	−0.314	−0.125	-4.678	−0.177	−0.072
SS	0.433	11.583	0.360	0.506	0.235	7.266	0.172	0.299
TTP x SS	−0.110	-3.583	−0.171	−0.050	−0.104	-4.109	−0.154	−0.054
JS x SS					0.081	3.252	0.032	0.130
JS					0.339	11.817	0.283	0.395
TTP -> JS -> BTA					−0.127	5.770	−0.240	−0.114

Note: CON = the teacher's confidence of using technology in teaching; TRA = the technology training in teaching form school; TTP = Teachers' Time Poverty; JS = Job Satisfaction; SS = Social Support; BTA = Blended Teaching Acceptance; TTP x SS = the interaction term between teachers' time poverty and social support; JS x SS = the interaction term between job satisfaction and social support; TTP -> JS -> BTA = the mediation effect of job satisfaction, with the confidence intervals for the mediation test calculated using bootstrapped confidence intervals (95% bootCI)
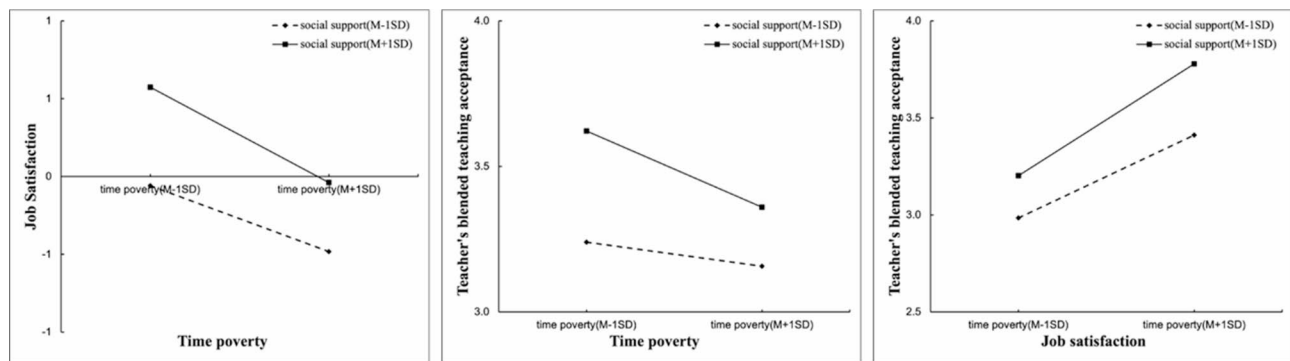
Fig. 2 The moderating role of SS in the relationship between TTP and JS, TTP and BTA, JS and BTA
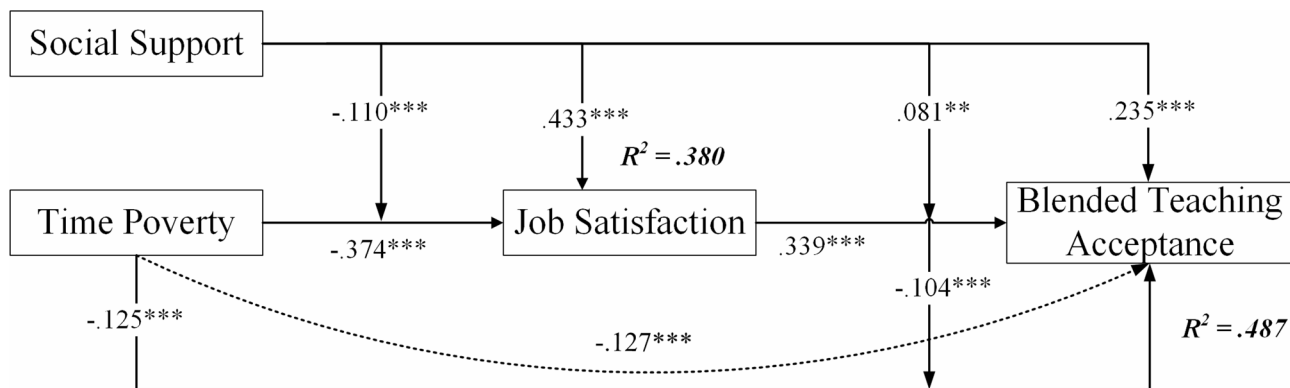

Fig. 3 Regression coefficients between all variables

Discussion

This study delineates crucial relationships among significant variables influencing the professional settings of EFL teachers. Specifically, a notable negative correlation exists between TTP and both BTA and JS, suggesting that increased time pressures may adversely affect teachers' acceptance of blended teaching methods and their overall job satisfaction. In contrast, positive correlations are evident among JS, BTA, and SS, indicating that higher job satisfaction and supportive environments are associated with greater acceptance of blended teaching approaches. Moreover, the analysis confirms the partial mediating role of JS in the relationship between TTP and BTA, and highlights the moderating effect of SS, which influences how TTP impacts both JS and BTA. These findings bring forth significant insights that warrant further discussion.

The shadow of TTP

The observed negative correlations between teachers' time poverty (TTP), job satisfaction (JS), and blended teaching acceptance (BTA) are in line with a growing body of empirical evidence that highlights the detrimental effects of time constraints on professional well-being and performance across various occupational contexts [11, 13, 14, 33]. In the educational sector specifically, time scarcity has been consistently associated with

emotional exhaustion, reduced professional efficacy, and diminished job satisfaction. The present findings reinforce these trends by empirically demonstrating that EFL teachers who perceive higher levels of TTP are less likely to express satisfaction with their work and, consequently, less willing to adopt pedagogical innovations such as blended teaching, which in language education requires sustained preparation, multimodal interaction, and continuous feedback.

Crucially, this study extends prior work by offering a more nuanced understanding of how perceived time poverty—not just objective time scarcity—interferes with pedagogical innovation. Previous studies (e.g [15, 35, 36])., have primarily focused on the logistical burden imposed by limited time, often framing time constraints as a structural or operational barrier to adopting new technologies. In contrast, the present research foregrounds the psychological dimension of TTP, highlighting how subjective perceptions of time insufficiency generate stress, frustration, and cognitive overload—effects that are particularly salient among EFL teachers, whose work involves highly interactive, communicative, and performance-based tasks. This distinction is significant, as it points to a deeper cognitive-emotional mechanism at play, which cannot be addressed solely

through time-management interventions or workload redistribution.

To interpret these findings, it is helpful to consider how excessive cognitive demands interfere with teachers' willingness to adopt pedagogical innovation through Cognitive Load Theory (CLT) lens [72, 90]. In the context of this study, when teachers experience TTP, the resulting mental burden can diminish their capacity to engage with complex instructional tasks such as blended teaching—especially for EFL teachers, whose work often involves managing asynchronous language input, tracking student oral performance, and differentiating instruction across proficiency levels. These demands, compounded by fragmented time and overlapping responsibilities, likely lead to a reluctance to explore new modalities. Prior research has similarly found that teachers under high time pressure are more likely to avoid innovation and default to routine practices [15, 35, 36].

Moreover, CLT also sheds light on the observed impact of TTP on job satisfaction. When teachers are cognitively overloaded due to chronic time constraints, even routine tasks may feel taxing, leading to a diminished sense of competence and reduced professional gratification [52]. This, in turn, undermines overall job satisfaction, as daily responsibilities are no longer experienced as fulfilling but rather as burdensome. The inability to balance lesson preparation, administrative duties, and ongoing professional development within limited time frames compounds this stress, eroding both emotional well-being and occupational engagement.

Beyond CLT, Scarcity Mindset Theory [75] provides an additional psychological perspective. Under prolonged time constraints, individuals tend to prioritize immediate, survival-oriented tasks over long-term planning. For EFL teachers, this often means focusing on short-term classroom delivery rather than investing in the sustained, strategic work required for blended teaching design. This reactive mode, though adaptive in the short term, may constrain pedagogical growth and innovation. In high-pressure institutional contexts, such as Chinese universities where language teachers must juggle teaching, research, and digitalization demands, TTP may unintentionally lead to professional stagnation rather than advancement.

Taken together, the current findings offer a comprehensive view of how TTP exerts its influence not only structurally—by reducing available working time—but also psychologically, by narrowing cognitive capacity and limiting future-oriented thinking. These insights provide empirical validation for the hypotheses proposed and further suggest that addressing TTP requires more than structural adjustments; it necessitates psychological and organizational strategies that restore cognitive resources and foster professional autonomy.

The mediating role of JS

This study examined the mediating mechanism through which time poverty (TTP) influences teachers' acceptance of blended teaching approaches (BTA), with job satisfaction (JS) serving as the intervening variable. The findings confirm that TTP negatively affects BTA primarily by reducing teachers' JS. This indicates that JS is not merely a passive outcome of occupational conditions but also a pivotal psychological mechanism that translates contextual stress into attitudinal and behavioral responses toward pedagogical innovation.

Importantly, this mediating pathway is particularly salient for EFL teachers, whose pedagogical work is often more cognitively and emotionally demanding than that of instructors in other disciplines. Blended EFL instruction requires teachers to design authentic language input/output tasks, offer immediate linguistic feedback, and maintain active classroom interaction across digital and physical platforms. Under these conditions, job satisfaction becomes a vital internal resource enabling teachers to engage positively with complex instructional reforms despite external time constraints.

The observed mediation effect aligns with and extends prior research ([51–53]) on the role of JS in educational contexts. These findings converge with the current study in emphasizing JS as a key resource in mitigating stress and sustaining professional engagement. However, this study adds new insight by explicitly linking JS to the implementation of blended teaching—a core indicator of pedagogical innovation in digitally transforming language education.

The theoretical lens of the Job Demands-Resources (JD-R) model [73] provides a robust framework for interpreting these findings. In the case of EFL teachers, TTP functions as a chronic stressor—exacerbated by content preparation, multimodal delivery, and ongoing student monitoring—while JS acts as a protective motivational factor that supports adaptive instructional behaviors. Our empirical evidence clearly supports this dual-process model: TTP reduces JS, which in turn lowers the likelihood of BTA. Conversely, when JS remains intact, teachers are more likely to embrace blended approaches, even amid workload pressures.

Moreover, the current findings resonate with studies ([18, 48]) highlighting the link between JS and innovation-related behavior. In the context of tertiary-level English instruction, where language input must be both pedagogically sound and technologically engaging, such emotional readiness is essential. By confirming JS as a mediator between TTP and BTA, the present study provides empirical support for the view that EFL teachers' affective engagement with their work is a critical enabler of successful instructional reform.

In sum, this study not only validates the mediating role of JS in the TTP–BTA relationship, but also highlights its particular significance within the context of Chinese university EFL teaching. These insights point to the need for institutional strategies that specifically target language teachers' job satisfaction—through reasonable workload design, recognition of instructional complexity, emotional support, and autonomy—in order to facilitate sustainable adoption of blended teaching innovations.

The moderating role of SS

This study reveals that time poverty (TTP), as a source of psychological stress and challenge stemming from insufficient time, negatively impacts both job satisfaction (JS) and blended teaching acceptance (BTA), and that this negative effect can be moderated by social support (SS). Moreover, while SS is generally considered an effective buffer against stress, an important finding of this study is that SS exhibited a negative moderating effect in the paths from TTP to JS and TTP to BTA, but a positive moderating effect in the path from JS to BTA. These findings diverge from previous research highlighting the buffering role of SS under different stress contexts [16, 17, 65, 66, 70, 71], but reaffirm the important contribution of SS to JS [62–64] and the promotion of BTA [1, 67, 68]. This finding not only enriches the understanding of SS effects but also highlights the unique functional characteristics of SS within the specific educational context of Chinese higher education.

Under the framework of Conservation of Resources (COR) theory [74], the moderating role of SS can be further understood through its dual function in resource dynamics. Traditionally, SS is regarded as a compensatory, protective, and enhancing resource for individuals under psychological stress. Prior studies have confirmed that SS can function as an enhancer in positive relationships and as a buffer in negative ones [16, 17, 65, 66]. In this study, such an effect was evident in the pathway from JS to BTA, particularly among Chinese university EFL teachers. Those with higher job satisfaction were better able to transform external supports—such as shared teaching resources, peer collaboration opportunities, and administrative encouragement—into enhanced feelings of value, belonging, and self-efficacy, which in turn fostered a stronger willingness to adopt blended teaching practices.

However, the positive role of SS does not always manifest as expected. The findings related to EFL teachers in Chinese universities call for deeper theoretical reflection. While TTP has been widely recognized as a major stressor under digital transformation [69], the intersecting pressures on university teachers—including traditional instructional responsibilities, digital teaching reform [91], research output demands, and postgraduate supervision—have led to complex and overlapping professional roles. Teachers are expected to be "digital educators," "research scholars," and "academic mentors" simultaneously, often without a corresponding increase in time or institutional support.

These overlapping demands are further exacerbated by cultural values rooted in Confucian traditions, which emphasize moral commitment, self-sacrifice, and absolute dedication to students and institutions. Institutional discourses frequently promote narratives of "selfless professionalism" and "unconditional contribution," which, while reinforcing professional identity, also intensify internalized expectations to overwork. Even in the face of severe time scarcity, EFL teachers may continue accepting additional responsibilities out of moral obligation, a phenomenon that has been described as "moralized time deprivation" [92, 93].

Within this high-pressure and resource-constrained environment, the role of SS may shift from being protective to paradoxically amplifying psychological strain. This aligns with the concept of support-resource mismatch, an extension of COR theory [76, 77], which suggests that when support is misaligned with an individual's situational needs—being untimely, symbolic rather than functional, or implicitly obligatory—it may consume rather than replenish resources. For EFL teachers, even well-intentioned support (e.g., invitations to join collaborative innovation, new teaching initiatives, or institutional pilot programs) can increase stress when perceived as additional duties rather than genuine assistance.

Thus, while SS enhanced the JS–BTA relationship in this study, it failed to buffer—and even intensified—the adverse effects of TTP on both JS and BTA. This highlights the critical importance of designing context-sensitive, needs-responsive support mechanisms, particularly in demanding teaching environments such as Chinese higher education. For EFL teachers specifically, support must be not only present but properly aligned in scope, timing, and expectations in order to function as a true resource rather than a hidden stressor.

Implications of the study

The multifaceted relationships identified in this study between teachers' time poverty (TTP), job satisfaction (JS), blended teaching acceptance (BTA), and social support (SS) yield important implications for educational policy, school leadership, and teacher support practices—particularly within the context of university-level EFL instruction. These findings highlight the need for more nuanced and context-sensitive strategies to improve teacher well-being, promote pedagogical innovation, and manage workload effectively.

For policymakers, the results underscore the urgency of addressing structural contributors to time poverty. Given

the central mediating role of job satisfaction in facilitating teachers' openness to blended teaching, and the unexpected negative impact of mismatched social support, policy reforms should move beyond generic teacher support provisions. Instead, regulations should be introduced to restrict excessive non-teaching duties, maintain a reasonable teacher-student ratio, and ensure protected time for professional development. Special funding mechanisms could incentivize institutions that adopt intelligent workload management systems or provide teachers with structured autonomy and recovery time. Such targeted interventions are especially crucial in EFL teaching contexts, where blended instruction requires intensive material preparation, real-time feedback, and multimodal interaction—tasks that are significantly time-consuming and cognitively demanding.

For school administrators, the findings call for a dual approach: reducing workload-related time stress while enhancing job satisfaction through meaningful support. Investing in technologies that automate administrative reporting, scheduling, and assessment can significantly alleviate time burdens. Additionally, offering flexible course planning, clear task delegation, and opportunities for task rotation can reduce burnout from repetitive or disproportionate responsibilities. Rather than offering one-size-fits-all support, administrators should promote needs-matched social support mechanisms, including voluntary peer mentoring, context-sensitive professional learning communities (PLCs), and opt-in teaching innovation groups. These initiatives should be framed not as obligations but as resource-enhancing options, particularly for EFL teachers whose workload is both specialized and performance-based.

For teachers themselves, the findings reinforce the value of engaging proactively in professional decision-making and institutional communication. Teachers are encouraged to participate in school-level discussions about workload policies and to seek out professional development that emphasizes time management, digital teaching efficiency, and psychological resilience. Given the mediating role of job satisfaction, cultivating personal boundaries, asserting instructional autonomy, and maintaining collegial networks can meaningfully improve both well-being and innovation readiness. In contexts where SS may become a hidden burden, teachers should also feel empowered to accept or decline support in ways that align with their actual capacity and priorities.

Finally, for the broader support ecosystem—including families and community stakeholders— it is essential to recognize that support, though well-intentioned, may have unintended consequences if it reinforces unrealistic expectations. Schools can help by involving families in educator wellness initiatives, offering informational sessions on the pressures of modern teaching, and encouraging shared responsibility for emotional recovery at home.

Conclusion

This study reveals a complex and multifaceted relationship between university-level English as a Foreign Language (EFL) teachers' time poverty (TTP), job satisfaction (JS), social support (SS), and their acceptance of blended teaching approaches (BTA). The results demonstrate that TTP exerts a significant negative influence on BTA, a relationship that is partially mediated by JS and conditionally moderated by SS. Specifically, higher levels of job satisfaction buffer the adverse impact of time constraints and foster greater openness to pedagogical innovation. Furthermore, while social support enhances the positive effect of JS on BTA, its moderating effects on the TTP–JS and TTP–BTA relationships were unexpectedly negative, suggesting that poorly aligned support structures may inadvertently intensify stress. These findings offer new insights into the psychological mechanisms and contextual factors that shape EFL teachers' willingness to engage in blended teaching, particularly under the combined pressures of digital transformation, institutional expectations, and pedagogical complexity.

Limitations of the study

While these contributions are noteworthy, the study is not without limitations that should be considered when interpreting the results and drawing broader conclusions. One important limitation lies in the correlational nature of the study, which restricts the ability to draw firm conclusions about causality. Although the analysis identifies meaningful associations among variables, the direction and nature of these relationships remain inferential. Additionally, reliance on self-reported data may have introduced bias due to subjective perceptions or social desirability effects. The sample's limited diversity—composed of EFL teachers from a single national context—constrains the generalizability of the findings to other regions, disciplines, or educational levels. Furthermore, the absence of potentially influential covariates, such as teaching experience, workload policy, or access to digital tools, may have masked or confounded some effects. The cross-sectional design further limits insight into how these relationships evolve over time or in response to contextual changes.

Recommendations and future directions

To move beyond the current study's limitations and deepen understanding of the relationships among TTP, JS, SS, and BTA—especially in the context of EFL teaching—several future directions are warranted. Longitudinal research could illuminate how these constructs interact and evolve over time, revealing how persistent

time pressure influences instructional behavior and psychological well-being. Incorporating qualitative methods, such as interviews or teacher narratives, would also uncover the nuanced realities of EFL educators who often balance high communicative demands, continuous feedback cycles, and digital content creation under resource constraints.

Employing multi-source data (e.g., peer evaluations, student feedback, administrative records) could offer a more comprehensive view of EFL teachers' professional experiences and openness to blended teaching. Broader sampling across different regions, institutional tiers, and language proficiency contexts would allow for more generalizable insights and highlight variation in how EFL teachers experience time poverty and institutional support.

More specifically, future studies should investigate the quality and alignment of support provided to EFL teachers, who often operate at the intersection of technological innovation and linguistic pedagogy. Differentiating between types of support—emotional, instrumental, informational, and appraisal—and evaluating their fit with teachers' actual needs may clarify why some support enhances engagement while others exacerbate stress. Cultural expectations surrounding teacher sacrifice and professional identity also deserve further exploration.

Finally, researchers are encouraged to take a more intervention-oriented stance by designing and testing practical strategies to reduce time poverty and enhance job satisfaction among EFL teachers. These may include protected time for material design, targeted digital pedagogy training, and differentiated support models that honor individual autonomy. By focusing on the real-world challenges faced by EFL educators, future research can contribute not only to theoretical development but also to more sustainable and human-centered educational reform in linguistically demanding teaching environments.

Abbreviations

TTP	Teacher's Time Poverty
JS	Job Satisfaction
SS	Social Support
BTA	Blended Teaching Acceptance
PU	Perceived Usefulness
PEU	Perceived Ease of Use
ATT	Attitude
BI	Behavioral Intention
AU	Actual Use
EFL	English as a Foreign Language
CLT	Cognitive Load Theory
JD-R	Job Demands–Resources model
COR	Conservation of Resources theory

Data availability

Data and materials will be made available upon reasonable request.

Declarations

Ethics approval and consent to participate

This study received ethical approval from the Ethics Committee of Fujian Normal University. All participants provided written informed consent after being fully briefed on the study's purpose, procedures, risks, and benefits. Their confidentiality and anonymity were strictly protected, and data were used exclusively for research purposes. The procedures used in this study adhere to the tenets of the Declaration of Helsinki.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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