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Spillover effects of work–family conflict on job consequences influencing work attitudes

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A society risks experiencing inadequate educational services from higher education institutions if severe shortages of lecturers persist. Addressing such a critical social issue necessitates prioritizing lecturer satisfaction, as it is intrinsically linked to lecturer retention, reduced turnover rates, institutional cohesion, lecturer well-being, professional teaching development, and enhanced research and publication outcomes. The study aims to investigate the spillover effects of work–family conflict on job-related consequences, specifically stress and burnout, which subsequently shape work attitudes such as lecturer satisfaction, with occupational experience examined as a moderating variable. Data were collected from 450 Thai lecturers through a survey questionnaire, and a path analysis technique was employed for data analysis. The findings revealed that work–family conflict significantly influenced lecturer stress, which, in turn, was a key predictor of burnout. Additionally, burnout was found to significantly impact lecturer satisfaction, whereas stress did not directly influence satisfaction making burnout act as the mediator between stress and satisfaction. Furthermore, occupational experience moderated the relationship between burnout and lecturer satisfaction, highlighting its critical role in mitigating the adverse effects of burnout on overall work attitudes.

Keywords Work, Conflict, Stress, Satisfaction, Burnout, Experience, Syndrome

Most adults divide their lives between two fundamental domains, work and family, and maintaining a balance between them has become a critical social issue of global significance. The interplay of these domains has attracted considerable scholarly attention, as researchers have sought to understand the conflicts that arise when individuals face competing demands and expectations in simultaneously fulfilling family and work responsibilities[1]. According to Greenhaus and Beutell[2], work–family conflict (WFC) occurs when work-related obligations impede an individual's ability to participate effectively in family life, leading to a disruption of familial roles. Such conflicts often result from the excessive dedication of time and energy to professional responsibilities, leaving family roles compromised. Over several decades, extensive research across diverse occupational groups, including seafarers, telecommunications employees, preschool teachers, and construction workers, has consistently demonstrated significant associations between WFC and adverse outcomes such as elevated stress levels[3], burnout[4], and reduced job satisfaction[5]. Furthermore, the consequences of work–family conflict extend beyond personal well-being, as its detrimental effects on health and work capacity can ultimately lead to higher turnover rates and diminished organizational efficiency[1]. The pervasive impact of work–family conflict accentuates its critical importance in organizational behavior research, necessitating continued exploration of strategies to mitigate its effects and promote a more sustainable balance between professional and familial roles.

In the context of higher education, where students constitute the primary source of income for universities, many institutions are increasingly focused on improving the quality of educational services to attract a larger number of enrollers and remain competitive within the industry. Such an environment has intensified the need for lecturers to dedicate substantial effort toward delivering high-quality education while simultaneously fulfilling institutional demands for research productivity[6]. Universities such as Shanghai Jiao Tong University, Walailak University, National Taiwan University, and Harvard University now mandate that their academic staff not only conduct research but also publish in high-impact journals indexed in Scopus or the Web of Science to enhance their positions in the Times Higher Education (THE) World University Rankings[7,8]. Higher rankings significantly bolster public perception, enabling institutions to attract a more diverse student body, increase global visibility, and achieve greater financial gains. Nonetheless, the challenges associated with maintaining a

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skilled and competitive workforce capable of sustaining operational excellence remain significant[1]. Providing high levels of job satisfaction among lecturers emerges as a critical strategy, given its direct influence on employee well-being, retention, and turnover rates[9]. The satisfaction of academic staff is also intrinsically linked to the quality of teaching and the effectiveness of students' learning processes. Identifying and addressing factors that influence job satisfaction, including work–family conflict, stress, and burnout, becomes essential for mitigating workforce challenges and ensuring sustainable institutional growth[1,10].

To the best of the authors' knowledge, work–family conflict has been widely examined in relation to worker behavior across various sectors, including high school education[5], construction services[1,11], public order services[12,13], and public administration[14]. Previous studies have predominantly focused on the spillover effects of work–family conflict on outcomes such as stress[3], burnout[4], and job satisfaction[5], often addressing these variables in isolation rather than exploring their interconnections. Occupational experience, which significantly shapes workers' perspectives and behaviors[15], is derived from sustained participation, practice, and engagement in daily tasks, thereby fostering awareness and knowledge that enable individuals to navigate workplace challenges and enhance their professionalism. Such experience has the potential to influence critical workplace issues, including stress, burnout, and job satisfaction, by altering workers' attitudes and coping mechanisms[16]. Despite its importance, the moderating role of occupational experience in the relationships among work attitudes, such as stress, burnout, and satisfaction, remains underexplored. To address this research gap, the present study seeks to investigate how the spillover effects of work–family conflict impact job-related outcomes, including stress and burnout, which subsequently influence work attitudes such as lecturer satisfaction. Furthermore, the study examines the role of occupational experience as a moderating factor in the relationships between job outcomes and work attitudes. The findings aim to provide novel contributions to the psychological understanding of lecturer satisfaction and its determinants within professional contexts.

Literature review

Work satisfaction in higher education

Work satisfaction is conceptualized as the degree to which an individual exhibits a positive attitude toward their work, based on an evaluation of the causes and consequences of their professional experiences[17]. Within organizational psychology, Fütterer et al.[9] highlight that work satisfaction exerts a profound influence on performance, well-being, retention, and turnover rates, emphasizing its critical role in workplace dynamics. Researchers and psychologists have continuously examined work satisfaction to understand the perceptions and attitudes of workers toward their professional roles. Expanding on Locke's[18] foundational definition, lecturer work satisfaction can be further specified as "a sense of fulfillment and pleasure derived from one's identity as a lecturer and from engaging in teaching tasks"[19].

The development of work satisfaction can be explained through social exchange theory (SET) and the norm of reciprocity (NOR), both of which provide frameworks for understanding workplace dynamics. Social exchange theory posits that human relationships are governed by subjective cost–benefit analyses, where both employees and organizations assess available options and negotiate changes[20]. An imbalance in this exchange, particularly when the costs exceed the benefits, often leads to perceptions of unfairness that erode trust and negatively impact attitudes. The norm of reciprocity, as articulated by Gouldner[21], suggests that individuals respond to the actions of others by reciprocating either positively or negatively, depending on their evaluation of the causes and consequences of those actions. Although reciprocity does not follow an exact scientific proportionality, even small gestures of goodwill can elicit significant positive returns, such as heightened loyalty and generosity from others[22]. In the context of organizational behavior, workers' attitudes toward their employers are shaped by their assessments of the actions and outcomes facilitated by their organizations. Work satisfaction, in this regard, reflects the attitudes of lecturers as they evaluate the causes of workplace stressors, such as work–family conflict, and the consequences, such as stress and burnout. Thus, work satisfaction functions as both an indicator of the current workplace environment and a predictor of behavioral intentions, providing insights into whether employees are likely to remain in or leave their current roles. By capturing the interplay of emotional, cognitive, and behavioral responses, work satisfaction serves as a vital construct for understanding professional fulfillment and decision-making in the workplace.

In the education sector, prior research has established that teachers who experience high levels of job satisfaction tend to exhibit greater well-being[23] and demonstrate stronger commitment to their teaching careers[9], factors that contribute significantly to reducing turnover rates and the demand for replacements within educational institutions. In the context of higher education, empirical findings have identified a strong correlation between work satisfaction and the propensity to leave the teaching profession, which has been recognized as a critical issue affecting student learning outcomes and overall academic achievement[24]. Departures from the teaching profession have become increasingly prevalent, particularly during the early stages of educators' careers[9]. As a result, the widespread attrition of teachers has led to severe shortages in the education workforce, creating challenges not only for the education system but also for society and national development, a trend observed across multiple countries[9,25]. Job dissatisfaction is often cited as a major contributing factor, as it undermines teaching quality and subsequently affects the educational experiences of students.

On the other hand, higher levels of work satisfaction have been shown to enhance both lecturers' well-being and their teaching performance, thereby positively influencing students' learning processes[9]. Evidence from the TALIS 2013 report on Portuguese teachers revealed that teaching effectiveness improved significantly when educators were satisfied with their work[26], suggesting that satisfied lecturers are more likely to engage positively with their teaching responsibilities and provide higher-quality instruction[24]. Global research findings, such as those reported by Carver-Thomas and Darling-Hammond[27], indicate that nearly 50% of the 25 nations included in an international study of university policies expressed serious concerns regarding the ongoing challenges of recruiting and retaining high-quality lecturers. Hence, work satisfaction remains a critical issue

in higher education, demanding greater attention from both researchers and practitioners to explore the factors influencing lecturer satisfaction and its implications for the education system as a whole.

Work–family conflict (WFC)

Work–family conflict refers to an inter-role conflict that arises between the work and family domains, placing role pressures on the individual worker[28]. Such conflict typically occurs when the demands of the work domain impede the individual's ability to fulfill family obligations, creating a significant strain on personal and professional life. According to the literature, individuals who experience work–family conflict may encounter one of three distinct forms: strain-based WFC, time-based WFC, and behavior-based WFC[2]. Strain-based WFC arises when the pressures and stressors from the work domain exacerbate strain, thereby negatively affecting the individual's capacity to meet family expectations and demands[29,30]. Time-based WFC, on the other hand, occurs when the time spent on work-related tasks reduces the time available for family responsibilities, thereby limiting the individual's ability to engage with family members. Finally, behavior-based WFC involves situations where behaviors or attitudes developed in the work domain, such as aggression or emotional instability, negatively affect family dynamics, creating challenges for family members who expect warmth, care, and emotional support from the worker.

In relation to stress, when individuals' work tasks interfere with their family responsibilities, both their emotional state and motivation at the workplace are significantly impacted[31]. Prolonged work–family conflict within organizations may pose considerable risks to workers' psychological well-being[32]. Existing literature indicates that workers frequently experience fluctuating workloads[33] and extended working hours[30], factors that contribute to emotional instability as individuals become increasingly preoccupied with family obligations. Such conditions place considerable emotional pressure on workers, which, over time, can manifest stress symptoms. Therefore, the occurrence of stress among workers becomes nearly inevitable when they encounter substantial work–family conflict, as the interplay between professional demands and family responsibilities exacerbates psychological strain[34].

In the context of burnout, high levels of work–family conflict can result in not only elevated stress[31] but also increased burnout[35]. According to the job-demand resources theory, when job requirements compel workers to exert additional effort to accomplish their tasks, it leads to a depletion of their energy, mental resources, and heightened emotional exhaustion[36]. Such conditions have a profound and enduring impact on workers' overall health, particularly in terms of their work motivation and productivity[37]. Previous studies have documented that some workers experience significant physical strain[35], while others endure emotional exhaustion[38]. In particular, the demands of work–family conflict can negatively affect both the emotional and physical well-being of workers, particularly when they invest excessive hours to fulfill their professional duties[39]. Thus, based on these findings, the following hypotheses are proposed:

H1 Lecturer stress is affected by high work–family conflict.

H2 Lecturer burnout is affected by high work–family conflict.

Job stress

Stress refers to the emotional pressure experienced by an individual as a result of specific environmental conditions or situations[40]. Expanding on this conceptualization, job stress is characterized by work conditions that generate high levels of pressure, leading to significant emotional and physical tension in workers[41]. In response to the work environment, individuals may experience stress when they perceive their tasks as being at risk, prompting them to seek appropriate solutions in order to meet deadlines[42].

In relation to burnout, the effects of job stress can manifest as both emotional and physical strain[43]. Many individuals experience emotional exhaustion, which, over time, can negatively impact their overall health[44]. According to past literature, including studies on police officers and corporate employees, workers often strive to cope with stressful work conditions that require significant emotional and physical effort[45,46]. As a result, they frequently encounter high levels of both physical and emotional exhaustion. In this context, previous research has highlighted that burnout is likely to occur in workers' emotional and physical states if job stress is not effectively managed or mitigated[47,48].

In relation to work satisfaction, the impact of stress is closely associated with individual job satisfaction[49]. Elevated levels of job stress can diminish work motivation and reduce the desire to remain in a current position, thus making the work environment less enjoyable for employees[50]. When individuals encounter stress in relation to their tasks, they often react with negative emotions, which in turn contribute to a decline in their job satisfaction[51]. Moreover, prior research has highlighted that when workers are stressed by their job demands, they frequently experience feelings of threat and anxiety regarding their future prospects within the organization[52]. Consequently, the negative effects of stress on workers' emotional and psychological well-being lead to a reduction in their overall job satisfaction with the organization. Based on these insights, the following hypotheses are proposed:

H3 Lecturer burnout is affected by high stress.

H4 Lecturer work satisfaction is affected by high stress.

Burnout

Burnout refers to a syndrome of emotional exhaustion resulting from prolonged exposure to work-related stress, which can lead workers to question their professional abilities and the capacity to fulfill their responsibilities

effectively[53]. Individuals experiencing burnout often exhibit one or more of its defining characteristics: depersonalization, a reduction in personal accomplishment, and emotional exhaustion[54]. Depersonalization involves the development of cynical and detached attitudes, reflecting a tendency to dehumanize colleagues and others within the workplace. The reduction in personal accomplishment manifests as a negative self-assessment of one's work, which undermines self-esteem and diminishes motivation to engage in professional tasks. Emotional exhaustion, on the other hand, is characterized by the depletion of emotional and mental resources, often stemming from chronic interpersonal stressors within the work environment. In sectors such as human services, where workers frequently encounter high levels of stress, burnout has become increasingly prevalent due to a range of external pressures, including organizational demands, societal expectations, and shifting economic and cultural contexts[55].

Concerning work satisfaction, individuals who experience high levels of burnout often report significant dissatisfaction with their current roles[54]. Within the domain of higher education, Ninaus et al.[56] assert that burnout diminishes both work motivation and positive perceptions of one's current organization, leading to a negative impact on overall job satisfaction. Workers suffering from burnout are frequently characterized by not only diminished self-motivation but also a decline in self-esteem, both of which substantially exacerbate the erosion of work satisfaction[55]. Moreover, those experiencing severe burnout are more likely to face a reduction in personal accomplishment, which further hinders their ability to interact effectively with colleagues and fosters discomfort in collaborative environments[57]. Such consequences, arising from burnout syndrome, significantly reduce the overall work satisfaction of affected individuals. Based on these findings, the following hypothesis can be posited:

H5 Lecturer work satisfaction is affected by high burnout.

H6 Burnout mediates the relationship between stress and lecturer satisfaction.

Occupation experience

Experience encompasses the sensations, feelings, and cognitions that allow individuals to understand and respond to specific situations after gaining familiarity or learning from prior encounters[58]. Defined broadly, experience refers to the outcomes of personal engagement, participation, and practice, which gradually evolve into a deeper familiarity and knowledge base. Research in consumer behavior has consistently demonstrated that experience directly shapes perceptions, attitudes, and behaviors, particularly in the context of sales force and consumer interactions[59]. Similarly, studies in organizational behavior have identified professional experience as a key factor influencing worker outcomes, including job satisfaction, organizational commitment, and turnover[60]. In occupational experience, the duration of work experience serves as a critical determinant of workers' understanding and knowledge, which profoundly impacts their perspectives and attitudes toward their work environment[61,62]. Evidence suggests that as workers accumulate greater experience within an industry, their ability to assess work outcomes, such as job satisfaction and organizational consequences, becomes more nuanced and sophisticated[16]. Workers with extensive experience often develop a deeper understanding of workplace dynamics, including exposure to stressful, toxic, or high-pressure environments, enabling them to exercise better self-regulation and devise effective solutions to address challenges[16].

In the framework of the job-demand resources theory, increased occupational experience mitigates the adverse effects of job demands and resources on workers' well-being and attitudes. Furthermore, under the principles of reciprocity, individuals with significant occupational experience often display greater professionalism, particularly in managing critical resources such as time, effort, passion, and knowledge. Such expertise allows them to navigate job demands more effectively, contributing to positive changes in their well-being and work attitudes. Based on the available evidence, occupational experience can play a fundamental role in moderating relationships among workplace factors, such as stress, burnout, and job satisfaction. The following hypotheses are therefore proposed:

H7 Occupation experience moderates the association between stress and satisfaction, such that the negative relationship between stress and satisfaction is weaker for lecturers with higher occupation experience compared to those with lower occupation experience.

H8 Occupation experience moderates the association between burnout and satisfaction, such that the negative relationship between burnout and satisfaction is weaker for lecturers with higher occupation experience compared to those with lower occupation experience.

Methods

Theoretical model analyzing lecturer satisfaction

All the relationships discussed are illustrated in Fig. 1. The model begins with spillover effects (work–family conflict) that directly influence job-related consequences, such as stress and burnout, which in turn affect work attitudes, specifically lecturer satisfaction. Furthermore, occupational experience moderates two key relationships: (1) between stress and lecturer satisfaction, and (2) between burnout and lecturer satisfaction. This research model was employed to analyze lecturers' work attitudes in higher education using a cross-sectional approach, which enabled researchers to observe and analyze data from the population at a single point in time. As a result, the study allowed for an examination of how current job satisfaction among lecturers is influenced by the relevant factors.

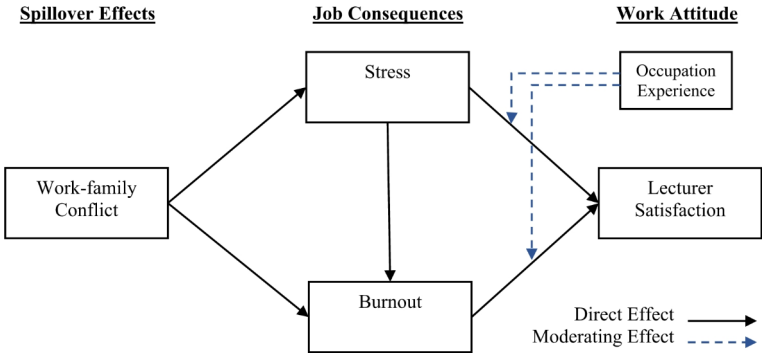

Fig. 1. Theoretical model of lecturer satisfaction.

Sample and data collection

The study was conducted in Thailand and focused on lecturers employed at various universities who participated in the survey process. The professional experience of participants varied depending on institutional policies and regulations, with some universities requiring a minimum of two years of teaching experience, while others accepted lecturers with at least one year of experience, provided they had a publication in Scopus or the Web of Science. The research aimed to capture responses from participants with diverse levels of teaching experience in higher education to ensure a more representative dataset. Participants with only one year of teaching experience were included in the assumption that they possessed sufficient understanding of their work environment and personal challenges in higher education, enabling them to provide well-reasoned and justifiable responses to the survey. To collect data, the study employed both convenience sampling and snowball sampling methods, resulting in a total of 450 lecturers completing survey questionnaires. Through convenience sampling, online survey links were distributed via email to lecturers working in remote provinces, while some participants were approached in person and invited to complete the surveys on university campuses. In snowball sampling, participants were encouraged to suggest additional qualified individuals, irrespective of whether those individuals had already participated in the study, thereby broadening the participant pool and enhancing the diversity of the responses collected.

Prior to data collection and testing, the research adhered to three main conditions. First, the study received approval from the Chairman of the Walailak University Ethics Committee in Human Research under approval number WUEC-23–018-01. Second, the research ensured that all procedures were conducted in compliance with relevant guidelines and regulations. Finally, informed consent was obtained from all participants.

During the survey, participants were first asked a screening question: "Are you currently employed as a lecturer with at least one year of work experience at this university?" Those who responded affirmatively were then asked for their consent to voluntarily complete self-administered questionnaires, with an estimated completion time of 10 to 15 min. Upon completing the survey, participants were requested to provide suggestions for other qualified individuals, allowing the researchers to identify and recruit additional participants.

Survey construct

In this study, items for each variable were primarily derived from existing literature. Specifically, work–family conflict items were adapted from Vickovic and Morrow[30], while job stress items were taken from Bradley et al.[48]. Items for occupational experience were developed by researchers. Burnout items were sourced from Torlak et al.[55], and job satisfaction items were borrowed from Genedy et al.[63]. All adopted items were modified and revised to ensure their relevance and appropriateness for surveying lecturers in the higher education sector.

A 5-point Likert scale was used to assess participants' opinions in the survey. This scale was deemed appropriate for the study, as it included a neutral midpoint (3 = neutral), which provided a clear distinction between positive and negative responses, thus reducing potential bias and making the survey process less stressful for participants[64]. Hence, participants were able to complete the questionnaires within the allotted time. The full survey construct is presented in Table 1.

Participants' basic information

Table 2 presents the participants' basic demographic information, including gender, age, and teaching experience in higher education. Regarding gender, 54% (n = 243) of participants were female, while 46% (n = 207) were male. In terms of age, 35.6% (n = 160) were between 20 and 30 years old, followed by participants aged 42 to 52 years (23.1%, n = 104), 31 to 41 years (21.1%, n = 95), and those above 52 years old (20.2%, n = 91). As for teaching experience, 35.1% (n = 158) had between 9 and 11 years of experience, followed by those with more than 11 years of experience (23.3%, n = 105), 5 to 8 years of experience (22.7%, n = 102), and 1 to 4 years of experience (18.9%, n = 85).

Common method bias (CMB)

In this research, data were collected using self-administered questionnaires, which aligned with the contemporaneous nature of data collection and the reliance on self-reporting by participants. As a result, common method bias (CMB) needed to be assessed to evaluate the degree of potential bias in the collected data.

Variable	Items	Scale	Original reliability
Work–family conflict	1. This work continues to interfere with my family time all the time	5-Likert Scale	0.86
	2. This work schedule is uncertain, and it affects my family and social life		
	3. My work usually needs extra hours to complete so I cannot join any celebration with my family (e.g., birthday or family reunion party)		
	4. This work makes me too tired to enjoy my family moment		
	5. This job makes me ignore other co-workers		
Occupation experience	1. 1–3 years	-	-
	2. 4–7 years		
	3. 8–11 years		
	Above 11 years		
Job stress	1. I do not have any motivation to do my teaching duty and research	5-Likert Scale	0.93
	2. I cannot handle this job anymore		
	3. I received too much pressure from high numbers of workloads		
	4. I feel so stressed due to a certain degree of toxic working environment		
Burnout	1. I feel low energy to perform teaching duties	5-Likert Scale	0.87
	2. I had a feeling that I could not find a proper solution to my everyday tasks		
	3. I am very tired from teaching activities these days		
	4. I feel that it is very difficult to get my paper published on time		
Job satisfaction	1. I think it is the right decision to work in this university	5-Likert Scale	0.91
	2. I am quite happy to teach students at this university		
	3. I love the working environment of this university		
	4. I am pleased with the university's policies and other regulations		

Table 1. Survey measurement and original reliability.

Variable	Description	Frequency	Percentage
Gender	Male	207	46
	Female	243	54
	Total	450	100
Age	20–30 years old	160	35.6
	31–41 years old	95	21.1
	42–52 years old	104	23.1
	Above 52 years old	91	20.2
	Total	450	100
Teaching experience	1–4 years	85	18.9
	5–8 years	102	22.7
	9–11 years	158	35.1
	Above 11 years	*105*	*23.3*
	Total	450	100

Table 2. Participants' basic information.

To detect this bias, Harman's single-factor test was conducted, examining the variance scores of a randomized factor. Variance scores above 50% would indicate potential bias[65]. Factor analysis was performed using SPSS software, with a fixed number of factors (extracted to one) and no rotation applied. As shown in Table 3, the statistical results revealed a factor variance score of 41.310%, which is below the 50% threshold for potential bias in Harman's single-factor test. Therefore, there was no significant concern regarding potential bias in the data collected for this research.

Data analysis: direct effect, mediating, and moderating testing

A Path Analysis Technique (PAT) was employed to analyze the collected data using Amos Software. PAT shares similarities with Structural Equation Modeling (SEM) in that it can analyze both multi-structural and complex structural models. However, unlike SEM, the variables in the PAT analysis consisted solely of average scores derived from the total questionnaire items. As a result, the PAT model did not include observed variables or factor loadings. This approach enabled the PAT to perform direct regression analyses between the studied variables. Prior to conducting the PAT, researchers were required to assess several statistical assumptions: (1) data normality (evaluated using Skewness and Kurtosis scores), (2) multicollinearity (measured by the variance

Total variance explained						
	Initial Eigenvalues			Extraction sums of squared loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	17.763	41.310	41.310	17.763	41.310	41.310
2	4.769	11.090	52.400			
3	2.545	5.918	58.317			
4	1.118	2.601	60.918			
5	0.976	2.270	63.189			
6	0.913	2.124	65.312			
7	0.872	2.028	67.340			
8	0.700	1.628	68.969			
9	0.683	1.589	70.558			
Etc	Etc	Etc	Etc	Etc	Etc	Etc

Table 3. Results of common method bias. Extraction Method: Principal Component Analysis.

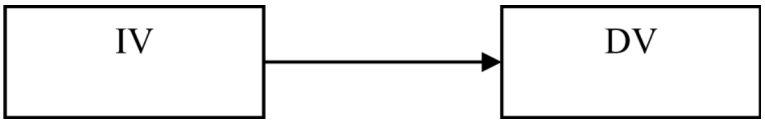

Fig. 2. Direct effect testing.

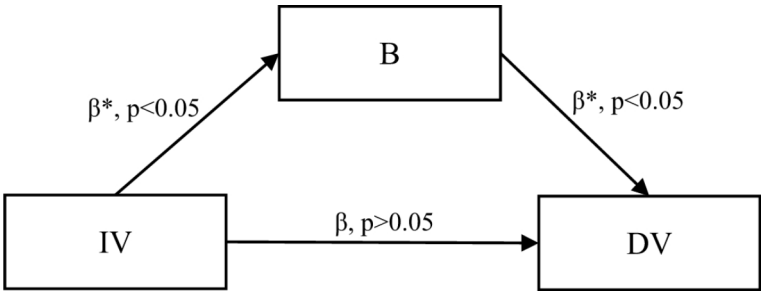

Fig. 3. Mediating testing condition.

inflation factor (VIF) scores), and (3) model measurement (including Cronbach's alpha, composite reliability, convergent and discriminant validity, and model fit). These assessments provided the necessary justification for the validity of the entire research model. Once these assumptions were confirmed, researchers proceeded with the PAT analysis.

In this research, three main statistical analyses were conducted: direct effect, mediation, and moderation testing. For direct effect testing, the path coefficient beta, which represents the relationship between independent variables (IVs) and dependent variables (DVs), was used to indicate the strength of relationships between the variables, as shown in Fig. 2. To analyze the relationships between the variables, the researchers evaluated the standardized coefficient beta (St. D β) and the significance level of the p-value ($p < 0.05$). These measures helped justify the relationships and hypotheses proposed in the study.

For mediation testing (IV → B → DV) as depicted in Fig. 3, mediation is suspected when the independent variable (IV) significantly influences the variable (B), but the IV does not significantly affect the dependent variable (DV), while the variable (B) significantly influences the DV. Based on the mediating condition in Table 4, researchers can assess whether the indirect effect of the IV on the DV is statistically significant ($p < 0.05$). If the indirect effect is significant, the mediator (B) is considered to be a valid mediator between the IV and DV.

For moderation testing of variable X on the relationship between the independent variable (IV) and dependent variable (DV) as shown in Fig. 4, researchers needed to modify the model and test the relationship depicted in Fig. 5. Specifically, researchers examined the interaction between the moderating variable (X), the independent variable (IV), and the interaction term (X * IV) in relation to the dependent variable (DV). According to the moderating conditions outlined in Table 5, moderation by X is considered significant when all variables (X, IV, and X * IV) or at least the moderating variable (X) and the interaction term (X * IV) significantly affect the dependent variable (DV), in accordance with conditions 1 and 2. However, if the results align with conditions 3 and 4, no moderating effect of X on the relationship between IV and DV is present.

Mediation testing						
Relationships						
IV–>B–>DV	*Dependent variable*	*Direct*	*Indirect*	*p value*	*Sig.Lv*	*Mediation result*
IV	DV	β	β*	0.000*	Sig	Confirmed

Table 4. Mediating condition. *Indicates a significant level of $p < 0.05$

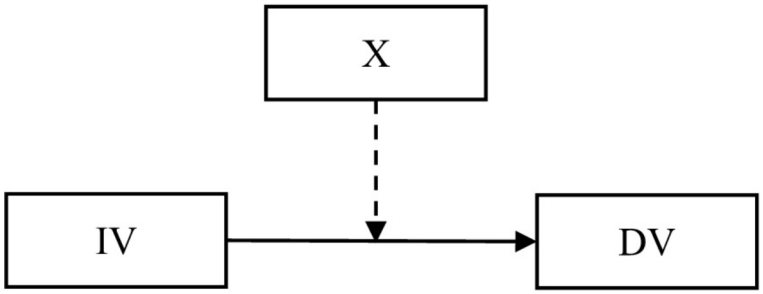

Fig. 4. Moderating testing.

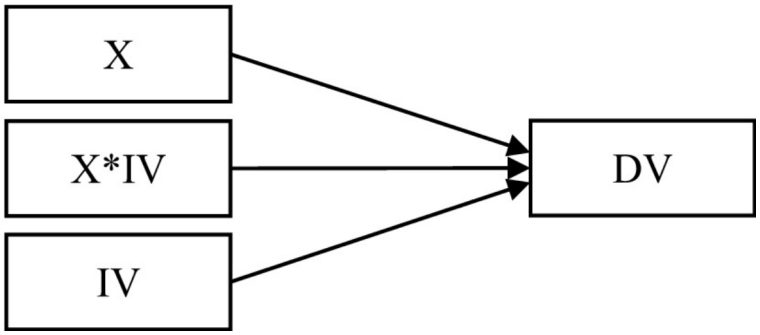

Fig. 5. Converted model testing.

No	Independent variable	Moderating variable	Interacting variable	Moderating result
1	Significant	Significant	Significant	Yes
2	Not significant	Significant	Significant	Yes
3	Significant	Significant	Not significant	No
4	Significant	Not significant	Not significant	No

Table 5. Moderating conditions.

Results

Model measurement

This study employed a path analysis method to analyze the data. To conduct the path analysis, researchers used Amos software to perform all relevant statistical procedures. Three statistical analyses were required to be reported as part of this analysis technique.

Initially, the research assessed data normality and multicollinearity statistics. To evaluate data normality, researchers examined Kurtosis and Skewness, with the requirement that their values fall within the range of − 1.96 to + 1.96. For multicollinearity, the variance inflation factor (VIF) was analyzed, with scores below 10 indicating an acceptable level and scores below 5 considered indicative of excellent condition. According to the statistical results presented in Table 6, each variable demonstrated Kurtosis and Skewness scores that satisfied the required thresholds, thereby confirming a normal distribution of the data. Furthermore, all variables exhibited VIF scores below 5, which suggests that multicollinearity was not a concern in the analysis.

Then, the content reliability of each variable was assessed using Cronbach's Alpha and composite reliability (CR), with scores above 0.7 indicating acceptable reliability[67]. As shown in Table 7, each variable achieved scores exceeding the established thresholds, indicating sufficient content reliability.

Variable	Normality Stat		Collinearity statistics
	Kurtosis	*Skewness*	*VIF*
Work–family conflict	−0.98	−1.06	2.09
Occupation experience	1.02	0.89	1.89
Job stress	−0.86	−1.04	4.16
Burnout	−1.22	−0.79	3.70
Job satisfaction	0.51	0.77	4.53

Table 6. Normality and multi-collinearity statistics.

Variable	Alpha (α)	CR	AVE	Discriminant validity test				
				1	*2*	*3*	*4*	*5*
Work–family Conflict	0.79	0.76	0.82	**0.80**				
Occupation Experience	0.80	0.94	0.70	−0.35*	**0.79**			
Job stress	0.91	0.83	0.62	0.44*	−0.38*	**0.74**		
Burnout	0.82	0.81	0.69	0.57*	−0.31*	0.27*	**0.75**	
Job Satisfaction	0.93	0.77	0.74	−0.49*	0.57*	0.33*	−0.16*	**0.78**

Table 7. Model statistics diagnostics and data normality statistics. Bolded numbers representing square-rooted scores of AVEs.

Indexes	Scores	Thresholds	Results
$CMIN^2/df$	2.411	≤3	Good
GFI	0.974	>0.9	Good
NFI	0.984	>0.9	Good
CFI	0.982	>0.9	Good
AGFI	0.975	>0.8	Good
RMSEA	0.046	<0.08	Good
PCLOSE	0.090	>0.05	Good

Table 8. Model fitness diagnostics. Note: Fitness indicators following a suggestion of Kim et al.[68].

Subsequently, the convergent and discriminant validities of the model were assessed[68]. In terms of convergent validity, the average variance extracted (AVE) scores were required to exceed 0.5. As demonstrated in Table 7, the AVE scores surpassed the minimum threshold, thereby confirming the presence of convergent validity in the model. Discriminant validity was evaluated by comparing the correlation scores with the square roots of the AVE values, which are presented in bold. Specifically, the correlation scores had to remain lower than the corresponding square root scores of the AVEs. Table 7 further illustrates that all correlation scores were below the respective square root scores of the AVEs, thereby providing sufficient evidence of discriminant validity in the model.

Finally, the model fit was assessed using several indices: $CMIN^2/df$, GFI, CFI, NFI, AGFI, RMSEA, and PCLOSE[68]. As shown in Table 8, all indices exceeded the minimum required thresholds, indicating an adequate model fit for the path analysis. Hence, the regression statistics from the path analysis, including the standard beta coefficients, were used to explain the relationships among the variables.

Path analysis results

The results of this research are summarized in Fig. 6 and Table 9. For direct effect testing, work–family conflict ($\beta = 0.47$, $p < 0.001$) was found to positively influence job stress. Furthermore, both work–family conflict ($\beta = 0.32$, $p < 0.001$) and job stress ($\beta = 0.57$, $p < 0.001$) were positively associated with job burnout. Lastly, job burnout ($\beta = -0.78$, $p < 0.001$) had a negative impact on lecturer satisfaction, while job stress ($\beta = -0.02$, $p > 0.05$) showed an insignificant effect on lecturer satisfaction.

For mediation testing of Stress → Burnout → Satisfaction, although the direct effect of stress on lecturer satisfaction was found to be insignificant, its indirect effect on lecturer satisfaction was significant ($\beta = -0.41$, $p < 0.001$). Therefore, burnout was confirmed as a mediator in the relationship between stress and lecturer satisfaction.

For the moderating effects of occupational experience, lecturer satisfaction was significantly influenced by occupational experience ($\beta = 0.31$, $p < 0.001$) and the interaction between burnout and experience ($\beta = -0.23$, $p < 0.05$), but not by the interaction between stress and experience ($\beta = -0.08$, $p > 0.05$). As shown in Fig. 7, lecturer satisfaction increased from 1.9 to 2.6 as experience increased, while burnout remained constant. Based

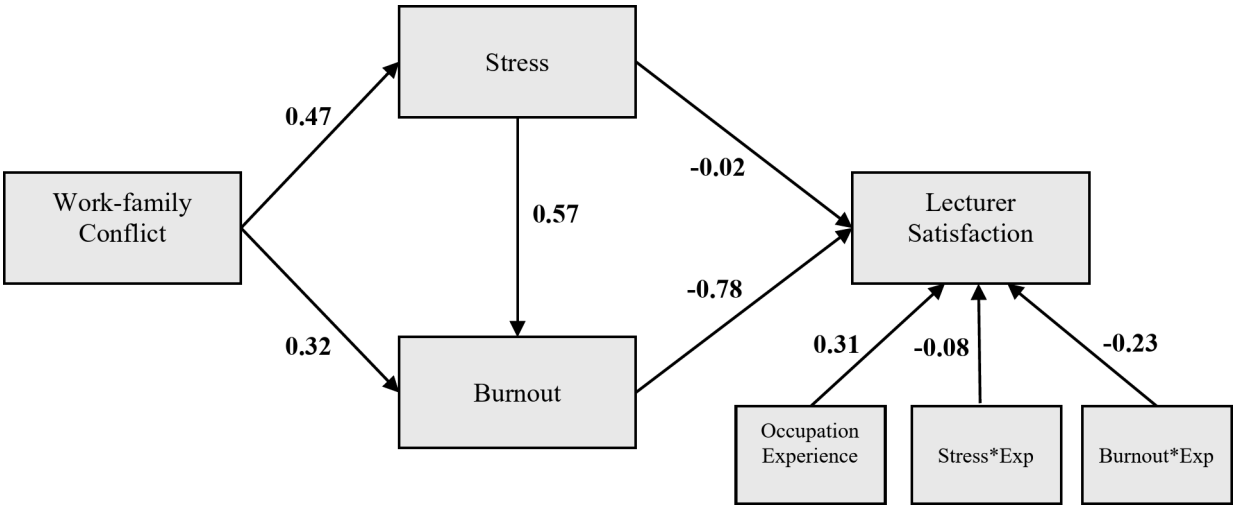

Fig. 6. PAT statistical results.

Panel A: Direct path diagnostics					
Hypothesized relationship					
Independent variable	***Dependent variable***	***St.D Beta (β)***	***p value***	***Sig.Lv***	***Hypothesis result***
Work–family conflict	Stress	0.47	0.000*	Sig	Accepted
Work–family conflict	Burnout	0.32	0.000*	Sig	Accepted
Stress		0.57	0.000*	Sig	Accepted
Stress	Lecturer Satisfaction	− 0.02	0.706	Insig	Rejected
Burnout		− 0.78	0.000*	Sig	Accepted

Panel B: Mediation path diagnostics						
Relationships						
Stress– > Burnout– > Satisfaction	***Dependent variable***	***Direct***	***Indirect***	***p value***	***Sig.Lv***	***Mediation result***
Stress	Lecturer satisfaction	− 0.02	− 0.41	0.000*	Sig	Confirmed

Panel C: Moderating path diagnostics					
Variable and interacting variables	***Dependent variable***	***St.d Beta (β)***	***p value***	***Sig.Lv***	***Moderating impact***
Occupation Experience	Lecturer satisfaction	0.31	0.000*	Sig	Confirmed
Stress*Experience		− 0.08	0.602	Insig	Rejected
Burnout*Experience		− 0.23	0.028*	Sig	Accepted

Table 9. Statistics and hypotheses report. The standard of statistical error is 5% (0.05).

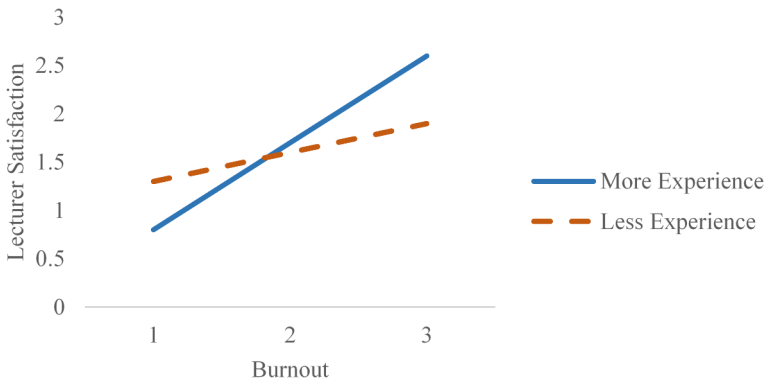

Fig. 7. Occupation experience as a moderator between burnout and satisfaction.

on these findings, occupational experience was confirmed to moderate only the relationship between burnout and lecturer satisfaction.

Discussion

The study revealed significant relationships among the components of the dimensional model. Specifically, the spillover effects, represented by work–family conflict, were found to significantly influence job consequences, including stress and burnout, which subsequently affected worker attitudes, particularly lecturer satisfaction. The intricate associations among these variables, which elucidate the development of job satisfaction within higher education, are thoroughly examined and discussed in the following paragraphs.

In relation to stress, work–family conflict was found to positively influence lecturer stress, thereby supporting Hypothesis 1. Elevated levels of work–family conflict disrupt the balance between work and family responsibilities, where the competing demands of these two domains impose significant mental health challenges on lecturers. Previous studies have demonstrated that when extended working hours encroach on family time, substantial barriers are created, preventing workers from engaging meaningfully with their families[31]. Such disruptions lead to conflicts in fulfilling familial obligations, as lecturers may struggle to meet the expectations and demands of their family members. As a result, the ongoing imbalance generates feelings of pressure and concern regarding relationships with family members who rely on their emotional support and care. The persistent strain fosters a sense of insecurity, anxiety, and vulnerability in lecturers, often exacerbating job-related stress. Over time, the unresolved conflict and emotional strain contribute to heightened emotional instability, ultimately leading to mental health challenges commonly referred to as "stress syndrome."

In relation to burnout, work–family conflict was identified as a significant predictor of lecturer burnout, thereby supporting Hypothesis 2. Jobs that demand substantial time and effort often result in heightened conflict with family responsibilities, creating a tension that can have profound implications for individuals' well-being[33]. Lecturers who devote considerable time to professional obligations, such as conducting research, delivering lectures, attending meetings, and participating in additional institutional activities, are prone to physical and emotional exhaustion, which impairs their ability to meet familial expectations and obligations. Such circumstances frequently lead to family-related challenges that generate concerns about interpersonal relationships at home and anxieties regarding future stability within their current institutions. Prior research has indicated that individuals experiencing intense work–family conflict are not only more likely to feel overwhelmed and stressed but also exhibit reduced energy levels, further diminishing their capacity to perform work tasks effectively[34]. Emotional fatigue resulting from persistent tension between work and family domains serves as a critical antecedent to burnout, particularly when professional commitments continuously interfere with personal life.

Stress was also found to significantly influence lecturer burnout, supporting Hypothesis 3. Stress syndrome exerts profound effects on both physical and mental health, often exacerbating feelings of exhaustion and reducing resilience[44]. Lecturers experiencing elevated levels of stress frequently report extreme fatigue arising from their responsibilities in teaching, research, and other institutional tasks. The physical toll of stress manifests as diminished energy and vitality, which adversely affects their motivation and productivity in subsequent days. Research in organizational behavior has consistently demonstrated that workers subjected to high levels of stress exhibit substantial emotional and physical fatigue, further reinforcing the link between stress and burnout[45]. Studies involving police officers and corporate employees have similarly highlighted that prolonged exposure to stress can lead to fatigue-related illnesses, which undermine overall health and compromise immune system function[45,46]. In light of such findings, lecturers encountering sustained job-related stress are highly susceptible to burnout syndrome.

In relation to work satisfaction, burnout was identified as a significant negative predictor of lecturer work satisfaction, thereby supporting Hypothesis 5. Emotional and physical exhaustion often accompany the presence of burnout syndrome, which substantially impairs lecturers' capacity to perform their duties effectively and hinders their long-term career development within the university. Such conditions can place lecturers in a precarious position, where the deterioration of their health—a fundamental asset—leads to dissatisfaction with their professional roles. Previous studies have consistently demonstrated that burnout diminishes workers' motivation and commitment, ultimately resulting in lower levels of job satisfaction[54,57]. Furthermore, the emotional exhaustion and reduced sense of personal accomplishment associated with burnout contribute to decreased energy and motivation, amplifying the negative impact on work satisfaction. Burnout, therefore, emerges as a critical factor influencing lecturers' work satisfaction within the context of higher education.

In contrast, stress was found to have no significant direct effect on lecturer work satisfaction, thereby rejecting Hypothesis 4. This finding contradicts prior research[49,50,52], which identified stress as a key determinant of job satisfaction. Mediation analysis (Hypothesis 6), however, revealed that stress indirectly influences work satisfaction through burnout, suggesting that the effects of stress manifest primarily via its progression into burnout syndrome. The unique characteristics of lecturers' roles in higher education may explain this indirect relationship, as their experiences differ from those in other occupational sectors. Although lecturers may encounter significant levels of stress in their academic responsibilities, including teaching, research, and administrative duties, their satisfaction with their roles does not immediately diminish unless the accumulated stress evolves into burnout. Burnout, in turn, forces individuals to confront the adverse impact of their professional environment on their health and well-being. This turning point often prompts lecturers to critically evaluate their work satisfaction, as they grapple with the question, "Am I happy or unhappy with this job?" Previous studies have similarly noted that the effects of job stress on satisfaction tend to emerge over time, as prolonged stress gradually leads workers to reassess their overall job satisfaction[69,70]. During this process, workers may delay acknowledging dissatisfaction until the physical and emotional toll of stress becomes evident

through burnout, at which point they recognize the profound impact of their work on their long-term health and well-being.

In relation to the moderating effects of occupational experience, the findings revealed that occupational experience moderated the relationship between burnout and lecturer satisfaction, thereby supporting Hypothesis 8, while no moderation effect was observed for the relationship between stress and lecturer satisfaction, resulting in the rejection of Hypothesis 7. The significant influence of occupational experience on these relationships can be attributed to the ability of experienced lecturers to draw upon their prior work environments and teaching careers[58,61]. Accumulated years of occupational experience provided lecturers with insights gained from collaborating with former colleagues, department heads, and deans, allowing them to develop a deeper understanding of workplace dynamics and leadership styles. Moreover, occupational experience encompassed not only daily work practices but also long-term engagement in professional activities, which equipped lecturers with essential skills and strategies for navigating their responsibilities effectively. As their experience grew, lecturers developed proficiency in managing various academic and administrative tasks, such as organizing classes, coordinating meetings, conducting research, overseeing social engagement projects, and publishing scholarly articles. This consolidation of expertise likely fostered greater awareness and professionalism, enabling lecturers to respond adeptly to institutional policies and evolving work environments in higher education. The accumulation of experience also allowed lecturers to become more flexible and resourceful in addressing contemporary challenges, equipping them with strategies to handle stressful circumstances, toxic work environments, and the demands of self-regulation. Furthermore, occupational experience contributed to greater maturity in responding to workplace changes, heightened expectations, and increased responsibilities. Through their professional development, lecturers cultivated a sense of professionalism characterized by enhanced awareness, patience, responsibility, and integrity, which empowered them to identify and implement effective solutions to workplace stressors. Consequently, lecturers with extensive experience demonstrated improved well-being, self-esteem, and enthusiasm, which facilitated their ability to maintain satisfaction with their work and continue excelling in research and teaching. Even when faced with burnout, experienced lecturers were better equipped to manage their workloads and mitigate the adverse effects of workplace pressures, allowing them to preserve their emotional and physical health while maintaining their professional performance and commitment.

Theoretical and practical contributions

The study offers significant contributions by conceptualizing, operationalizing, and examining the spillover effects of work–family conflict, which lead to job consequences such as stress and burnout, ultimately influencing worker attitudes, particularly lecturer satisfaction, with occupational experience serving as a moderating variable. The structural mechanism presented in the research distinguishes itself from previous studies and enhances the understanding of academic fields in several ways.

First, the structural mechanism elucidates how specific causes generate consequences within the context of teaching careers in higher education. Work–family conflict imposes substantial pressures on lecturers, including emotional exhaustion, physical strain, and social isolation, which disrupt their professional and personal lives. Such pressures not only strain relationships but also hinder lecturers' ability to balance their dual roles effectively. Second, the study highlights that stress does not always have a direct impact on work satisfaction. Although earlier research has identified stress as a key determinant of work satisfaction[50,52], the findings suggest that, in higher education, job stress primarily influences work satisfaction indirectly through the mediation of burnout. Over time, as stress escalates and begins to affect well-being significantly, burnout emerges as a critical syndrome that alters the way lecturers evaluate their job satisfaction. This progression points out the temporal nature of the relationship, as lecturers are less likely to assess their satisfaction until stress manifests as burnout, a stage at which the cumulative effects of their work environment become undeniable. Such insights provide a nuanced understanding of the dynamics between stress, burnout, and job satisfaction, offering a framework for predicting whether lecturers remain in their roles or seek alternatives.

Third, occupational experience is shown to play a pivotal moderating role in the relationship between burnout and satisfaction. Lecturers with greater professional experience tend to acquire enhanced coping mechanisms, allowing them to navigate the physical and emotional pressures associated with their work more effectively. Through years of practice, experienced lecturers develop skills, techniques, and strategies that enable them to mitigate the adverse effects of burnout and maintain a level of work satisfaction. The findings suggest that maturity and professionalism derived from occupational experience contribute to resilience, helping lecturers adapt to challenging work environments and minimize the impact of burnout on their well-being. Finally, the study contributes to social exchange theory[20] by offering insights into how the relationship between lecturers and universities evolves in response to work–family conflict and its associated job consequences. According to the norms of reciprocity[21], when institutions impose excessive work–family conflict, which leads to stress and burnout, lecturers reciprocate with diminished work satisfaction, reduced motivation, and a less favorable attitude toward their workplace. The findings indicate that the extent of lecturers' happiness or dissatisfaction is heavily influenced by the initial spillover effects of work–family conflict introduced by their institutions. The interplay between institutional demands and lecturers' responses underscores the importance of addressing work–family conflict early to mitigate long-term consequences on motivation and satisfaction.

In terms of practical contributions, human resource managers in higher education institutions must foster a healthy work environment for lecturers by implementing the following strategies. First, universities should minimize lecturer burnout by ensuring manageable workloads and clearly defined job responsibilities, particularly by avoiding fluctuations in workload demands. Next, to reduce lecturer stress, the standards for teaching loads and research timelines should be revised. For instance, teaching loads could be limited to two subjects per semester, while research publications aimed at enhancing the university's global ranking could

be completed over a span of two to three years. Finally, universities should address the propensity for work–family conflict among lecturers by encouraging them to adhere to a structured schedule for teaching tasks and permitting them to leave the office in accordance with office hours. Such policies would enhance lecturers' relationships with their families and society, allowing them to recharge and maintain a positive attitude toward their work the following day.

Limitation and future research directions

The research contains several limitations that should be acknowledged. First, the study primarily concentrated on a limited range of factors, including stress, burnout, work–family conflict, and occupational experience, that influence lecturer satisfaction. While these variables are significant, there are likely other potential determinants of lecturer satisfaction that were not addressed. Future studies could expand the scope by incorporating additional factors, such as job insecurity, anxiety, salary, and institutional support, to provide a more comprehensive understanding of lecturer satisfaction. Second, this study utilized tenure as a measure of experience due to its objective and easily quantifiable nature. However, we acknowledge that tenure may not fully capture the multifaceted nature of experience, including individual participation, practice, and engagement. This limitation highlights the potential gap in accurately representing the depth and quality of experience. Future research could address this by incorporating more comprehensive metrics, such as self-reported engagement levels, task-specific expertise assessments, or peer and supervisor evaluations. These alternative measures may provide a more holistic understanding of experience and its impact within the context of this study. Third, the standardization of workloads with minimal adverse effects on lecturers represents an intriguing area for further exploration. Researchers may consider investigating the characteristics of various workload standards and their implications for lecturer performance and well-being. Fourth, the study was contextualized within Thai working culture, which shares similarities with other Asian contexts. Cross-national research comparing higher education institutions in Asian and Western countries, such as Cambodia and Hungary, could offer valuable insights into how cultural differences shape lecturer satisfaction and related outcomes. Fifth, the research employed a cross-sectional design, limiting its observations to a specific point in time. A longitudinal approach would allow future researchers to track changes in lecturer satisfaction over an extended period and verify whether the relationships identified remain consistent over time. Finally, the study examined the causal relationships between stress, burnout, and satisfaction, yet it is plausible that any of these variables could serve as a starting point in influencing the others. The reciprocal nature of these relationships complicates the validation of a definitive causal pathway. Future studies could consider satisfaction as the initial variable, examining how it influences stress and burnout, developing a deeper understanding of the dynamic interplay among these factors and providing further insights into their causal mechanisms.

Conclusion

The primary objective of the research was to explore how the spillover effects of work–family conflict influenced job-related consequences, specifically stress and burnout, which subsequently led to significant changes in work attitudes, particularly lecturer satisfaction. Moreover, the study examined the moderating effects of occupational experience on the relationships between stress and lecturer satisfaction, as well as between burnout and lecturer satisfaction. The findings indicated that work–family conflict significantly impacted both stress and burnout. Even though stress was found to have a significant effect on burnout, its direct influence on lecturer satisfaction was not statistically significant. However, burnout was identified as a significant predictor of lecturer satisfaction, highlighting its critical role in shaping work attitudes. Furthermore, the moderating role of occupational experience was found to be significant in the relationship between burnout and lecturer satisfaction, whereas no significant moderating effect was observed in the relationship between stress and lecturer satisfaction.

In summary, the development of work attitudes, particularly lecturer satisfaction, is significantly influenced by the spillover effects of work–family conflict, particularly in the early stages of their careers. These spillover effects can lead to job-related consequences, such as stress and burnout, which lecturers may experience throughout their careers. As a result, these consequences influence overall career satisfaction, prompting lecturers to either consider alternative career opportunities or continue working at the same institution, depending on their concerns about current job satisfaction.

Data availability

The datasets generated during the current study are not publicly available due to high protection on participants' personal information but are available from the corresponding author on reasonable request.

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Author contributions

L.K. conducts duties as follows: conceptualization, methodology, formal analysis, resources, writing – original draft, writing – review & editing. P.M. conducts data collection, visualization, project monitoring, software analysis, and revising some areas (e.g., Introduction, Method, and Statistical Findings). S.F.Y. conducts duties as follows: supervisor, investigation, project administration, resources, writing – original draft, writing – review & editing.

Declarations

Competing interests

The authors declare no competing interests.

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