
Roles of Job Demands and Job Resources on Work Stress: The Case of Higher Education Teaching Faculties

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Abstract

This study aims to analyze the impact of job demands and job resources on work stress among teaching faculty members in higher education institutions. It adopts a deductive approach within the framework of objective philosophy, utilizing a sample size of 409 faculty members and employing a cross-sectional research design. The findings indicate that job demands harm work stress, while job resources exhibit a positive effect in mitigating stress. However, the results suggest that the influence of job resources acting as a cushion to alleviate the effects of high job demands on work stress was not observed to be significant. This implies that, although job resources may offer some protective benefits, they do not fully counteract the detrimental effects of job demands on stress levels in the higher education teaching environment. Therefore, higher education institutions should simultaneously decrease and increase the job demands and job resources, respectively, to minimize the likelihood of work stress among their teaching faculty.

Keywords: higher education, job demands, job resources, stress, teaching faculties

Introduction

A teaching job is considered one of the most stressful jobs. (Laybourn et al., 2019) Where teachers should always undertake the challenges from classroom management to curriculum development, and from routine administration tasks to emotional counseling within the boundary of limited resources (Labaree, 2000). In addition, there is also a constant pressure to update oneself with current affairs and simultaneously cope with ever-changing technological and methodological needs for effective classroom delivery. Such pressure at work likely depletes energy needs. (Baumeister & Heatherton, 1996) that ultimately reduces the overall work productivity (Bakker & Demerouti, 2007). However, Bakker & De Vries, (2021), Baum et al. (2023) and Lee et al., (2005) claimed that such work and an individual's problems can be mitigated by effective job design, i.e., by ensuring an optimal tradeoff between job demands and job resources.

Under the J-DR model (see, Demerouti et al., 2001) Job demands are physical and psychological skill requirements for job execution. They act as the stressors if not met accurately (Bakker & Demerouti, 2007), whereas job resources are those supporting factors that have the potential to buffer the effects of job demands. (Demerouti et al., 2001; Kahn & Byosiene, 1992) and promote growth. Generally, job demands in teaching jobs include time pressure, difficult students, multiple tasks, low student motivation, role ambiguity, etc., and job resources include work flexibility and autonomy, supportive colleagues, opportunities for learning, job security, value consonance, etc. (Skaalvik & Skaalvik, 2018).

Higher Education Institutions (HEIs) are vital in building human capital for national development. Therefore, it is always essential to have efficient and effective operations of such institutions where knowledge creation and transfer should flow seamlessly with continuous research and development activities. In doing so, teaching faculties should operate with utmost responsibility in planning, organizing, decision-making, and executing the knowledge development, evaluation, and dissemination process. However, these activities demand a high level of continuous effort, time, and dedication, susceptible to stressful conditions (Laybourn et al., 2019). Therefore, it is important to gauge the accurate situation of teaching jobs and their likely stressful outcomes to help in improving the actions for effective job design and better performance of teaching faculties.

Apart from that, after the approval of Nepal's new National Education Policy-2019, the universities should now direct their resources towards building a mechanism for a research-based education system that encourages students' self-learning behavior and facilitates to development industry industry-ready human capital. (Ministry of Education, Science and Technology, 2019). This direction by itself demands a modification of traditional *chalk and talk* pedagogy in universities. In addition, it also demands teachers' accountability for their performance, which requires them to update themselves with the diversified teaching methods, further adding to the likely layer of pressure and ultimately workloads for the teaching faculty. However, the studies on stress and the effect of new job design on university faculties are rare to be found in the present context.

Although some studies are highlighting the occupational stress cum burnout, stating relatively high stress among teachers, these studies limited their scope to the school level with a few variables like demography, stress, and burnout components. (Karki et al., 2023; Khadka et al., 2013; Paudel et al., 2024). Therefore, this study

examines the likely roles of job demands and job resources on work stress among academics in higher education.

In this backdrop, this study tries to answer the questions, i.e., *"How do the job demands and job resources influence the work-related stress experienced by higher education teaching faculties?"*, and *"Does job resources mitigate the influence of job demands in the work process?"* using the J-DR model. In this process, first, it examined the existing scenario of job demands, job resources, and stress among higher education faculty. Once the levels were identified, it examined the relationship, differences, and effect of job demand and resources on work stress, along with the cushioning ability of job resources on job demand. Finally, this study also intends to provide a feedback loop for developing the likely strategies of teaching job design that might effectively mitigate the occurrence of stress conditions among higher education faculty.

Literature Review

Job Demand and Resources Model

The Job Demand Resource (J-DR) model is an elaborated model of the Demand Control model developed by Robert Karasek in 1979, and the Effort Reward Imbalance model (ERI) developed by Siegrist in 1996. The rigidity of these models that failed in explaining specific resources is vital in buffering the effect of job demand, where the nature and size of all types of jobs do not fit, inducing the development of the J-DR model (Demerouti et al. 2001). In this sense, the J-DR model is more flexible and can be tailored to a much wider variety of work settings.

The basic assumptions of this model are, every job has its unique level of risk factors; therefore, the job characteristics should be examined by breaking it into job demand and job resources. Job demands are skills requirements concerning physical and psychological need for job completion, where job resources are those factors that can cushion the job demands requirement and promote growth (Demerouti et al. 2001). Besides, job demands are considered to be a stressor only when an employee is unable to meet the effort requirements (Meijman & Mulder, 1988), as in (Bakker & Demerouti, 2007). However, ineffective job demands reduce the energy level due to exhaustion of mental and physical resources.

Job resources have motivational potential and induce work engagement and performance. Besides, Bakker and Demerouti (2007) supported the job resources as the buffering factor to reduce the effect of potential stressors and change the individual perception and cognition evoked by such stressors. (Kahn & Byosiene, 1992). Further,

employees who are exhausted due to their work tasks are likely to stay behind in their workflow, thus creating additional job demands such as time pressure and role conflict. (Demerouti et al., 2004) Therefore, this flexible model highlighted the need for job resources to mitigate the effect of job demands in work settings.

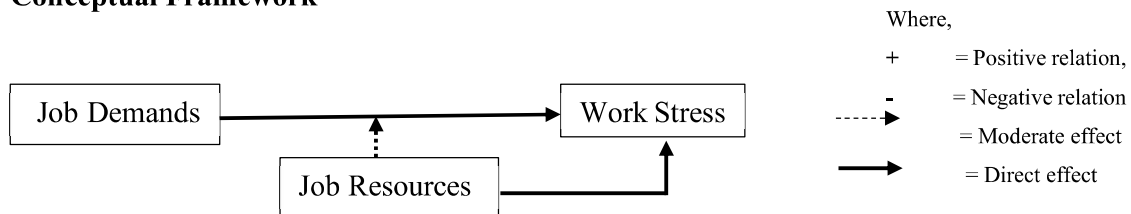
Relationship Between Job Demand, Job Resources, and Work Stress

Job characteristics involve both Job Demands (JD) and Job Resources (JR) (Demerouti et al., 2001). Work stress arises when job demands exceed resources, or when individuals perceive their job as burdensome, insecure, or lacking growth opportunities (Van Vegchel et al., 2005; Rajendran et al., 2020; Wang et al., 2015). Social conditions, such as poor peer relationships, also add to stress. Research indicates that adequate job resources mitigate the negative impact of demands, thereby reducing strain and burnout (Baum et al., 2023; Deci et al., 2017; Hakanen et al., 2006). However, not all demands are stressors unless they create role confusion or conflict. Organizational support, formalization, and employee participation in decision-making help mitigate stress (Van Den Broeck et al., 2017).

In the teaching fraternity, most of the stress cases are linked with the excessive job demand relative to available job resources (Llorca-Pellicer et al., 2021; Rajak et al., 2024; Rajendran et al., 2020). In addition, lack of control and workload combined explain the variation of exhaustion by 35%; besides, inadequate job resources like lack of growth opportunities, job security are also the significant predictors of job strain (Jackson & Rothmann, 2005). Even in the Demand control model, Karasek & Theorell (1990) highlighted that jobs with inadequate autonomy and control but have high responsibility are considered to be high-strain jobs. Usually, when teachers feel a high workload, low income, low degree of linkage with peers, continuous work pressure, constant involvement in developing teaching materials and research, etc., then such situations are likely to cause burnout (Bottiani et al., 2019; Naidoo-Chetty & Du Plessis, 2021; Rajendran et al., 2020; Wang et al., 2015). In a similar vein, Skaalvik & Skaalvik (2018) found that job resources and job demand are negatively and positively related, respectively, with emotional exhaustion and depressed mood. The tradeoff of such stressors can be accomplished by having a progressive education system, effective reward and support policies, along with a reduction in unnecessary work pressure and an effective teacher-student relationship (Llorca-Pellicer et al., 2021; Naidoo-Chetty & Du Plessis, 2021; Rajak et al., 2024).

From the extant review of literature following conceptual framework and hypotheses are developed. This framework highlights the linkage between job demands and work stress with the interaction effect of job resources on such relationship.

Conceptual Framework



H₁: There is significant positive influence of job demands on work stress

H₂: There is significant negative influence of job demands on work stress

H₃: Job resources moderate the influence of job demands on work stress

Methodology

To examine the relationships among job demands, job resources, and work stress, this study employed a deductive approach with a cross-sectional research design and a quantitative methodology. The conceptual framework, developed from the extant literature, highlights the linkage between job demands and work stress, with the moderating effect of job resources on this relationship. Based on this framework, the following hypothesis was developed: (H₁) There is a significant positive influence of job demands on work stress. A two-stage convenience sampling technique was used to select 409 higher education teachers from university colleges in Nepal. The sample size was determined using Cochran's (1977) formula for a defined population, with a final sample size of 409 and an 81.8% response rate from the 600 questionnaires distributed. To control for respondent bias, only those who gave their consent were included, and selective bias was limited by defining specific criteria for respondent selection, such as a minimum of six months of teaching experience. Data were collected using a standardized, closed-ended survey questionnaire that was modified for the Nepali context under expert examination. The questionnaires for stress, job demands, and job resources were adopted from established scales (e.g., American Institute of Stress, 1978; APWA, 1981; Jackson & Rothmann, 2005; Maslach & Leiter, 1997; Schaufeli et al., 2020) and reviewed for face and content validity. The scales demonstrated reliability, with Cronbach's alpha values of 0.838 for stress, 0.710 for job demands, and 0.820 for job resources, confirming their internal consistency and validity. The data analysis procedures involved data cleaning, outlier and normality examinations, descriptive

statistics, bivariate and multivariate analyses, and an assessment of the moderation effect.

Results

Table 1 highlights the agreement of the job demands and job resources in higher education teaching jobs with average values of 3.48 and 3.54, respectively. In addition, the stress level, which is 2.82, indicates the occasional stressful condition in a teaching job. Apart from that, less than 1.0 skewness and kurtosis values justify the normality of data distribution. Further, a moderate positive correlation (i.e., 0.494) is observed between job demand and stress. On the contrary, a negative weak correlation (i.e., -0.189) between job resources and stress is observed. However, a significant p-value at 5% level of significance states the possible natural occurrence of both relations.

Table 1

Descriptive statistics with the bivariate Pearson correlation coefficient of the variables

Variables	Mean (Std.Dev.)	Min	Max	1	2	3
1. Job Demand	3.48 (0.64)	1.71	5.00	1.00		
2. Job Resources	3.54 (0.60)	1.73	5.00	.155**	1.00	
3. Stress	2.82 (0.72)	1.09	4.91	.494**	-.189**	1.00
Skewness				-0.22	-0.19	0.00
Kurtosis				-0.37	-0.13	-0.30

** Correlation is significant at the 0.01 level (2-tailed).

Sources: Researchers' calculations 2024

Once the level of stress, job demand, and job resources were confirmed, the significant difference between high and low stress while considering the job demand and job resources was examined (see Table 2). The independent sample t-test was used and found a significant difference in job demands level between the high and low stress categories among higher education teaching faculties, i.e., a teaching job with high demands is perceived as a high stressor and vice versa. Similarly, when examining job resources, it acted just opposite, i.e., a teaching job with relatively low resources is perceived as a high stressor condition.

Table 2

Mean difference between stress levels considering job demands and job resources

Variables	Stress Category	Mean (Std.Dev.)	Mean Diff.	P-Value	95% CI
Job demand	Low Stress	3.149 (0.589)	-0.494	<0.05	-0.616, -0.372
	High Stress	3.643 (0.594)			
Job resources	Low Stress	3.668 (0.608)	0.191	<0.05	0.069, 0.313
	High Stress	3.478 (0.585)			

Sources: Researchers' calculations 2024

Again, to find out the effect of job demand and job resources on stress, linear regression was used (see Table 3). The study reveals that job demand (i.e., 0.612), job resources (i.e., -0.328) have significant positive and negative effects, respectively, on work stress, supporting H₁ and H₂ hypotheses. However, the interaction effect of job resources on the relationship between job demand and stress was found to be insignificant, stating no moderation effect, contrary to H₃.

Table 3

Regression analysis of study variables

Statistics	Intercept	Job Demand (JD)	Job Resources (JR)	JD*JR
β	1.853	0.612	-0.328	0.005
t-values	(8.149)**	(12.882)**	(-6.495)**	-0.174
Std. β		0.537	-0.271	0.007
Collinearity(VIF)		1.029	1.035	1.016
95% CI	1.406, 2.300	0.518, 0.705	-0.428, -0.229	-0.050, 0.059

R²=31.6%, Adjusted R²=31.1%, F (3,405) = (62.598) **

** Significant at 0.01 level, β=Beta Coefficient, CI=Confidence Interval

Sources: Researchers' calculations 2024

Findings and Discussions

The study found that a unit increase in job demands significantly increases the stress level by 0.612 units, highlighting the positive effect. A significant negative effect on stress was found, with a beta value of -0.328 was observed. Apart from that, jobs with high demands and low resources are relatively considered stressful compared to jobs with low demands and high resources. Similar findings were observed by Skaalvik and Skaalvik (2018) An empirical study, stating that job resources and job demand are negatively and positively related, respectively, with emotional exhaustion and depressed

mood. Besides, other researchers also observed similar findings, where they claimed that excessive demands relative to job resources are linked with stress. (Llorca-Pellicer et al., 2021; Rajak et al., 2024). Likewise, Jackson and Rothmann (2005) also found that lack of job opportunities, job security, and workload are the major predictors of strain.

Further, the interaction effect of job resources is found to be insignificant at 5% level of significance with a zero value within the range of confidence interval, i.e., -0.050 to 0.059. It highlights that both job demands and job resources act independently on work stress when considering the higher education teaching faculties. This finding is contrary to the study that highlights the interaction effect of job demands and resources on work performance. In addition, it also highlights the need for the J-DR model's further scrutiny for its validity regarding the job resources buffering behavior on job demands in the higher education context. Moreover, it can be said that, among higher education teaching faculties, there is an additive effect of job demands and job resources while considering the job stress.

Conclusion and Implications

This study explores the objective of examining the influence of job demands and job resources on work stress, along with analyzing the job resources influences job demands in the higher education context using descriptive statistics, t-test, correlation, and linear regression. In doing so, it concludes that job demand and resources independently affect job stress. It means there is a simultaneous increase and decrease of job resources and job demands, respectively, to minimize the stress in higher education teaching jobs. Therefore, the higher education institutions should tailored the nuances of teaching job based on key job stressors reduction such as, work pressure, multiple job roles, difficult students, emotional pressure, etc., and should also have parallel focus on enhancing the resources like, job autonomy, supportive peers, personal growth, job security, and updated and adequate information flow.

Apart from that, this study is constrained by a limited number of colleges with 409 teaching faculties working in five out of seven provinces in Nepal, so future researchers can incorporate all the provinces to achieve effective generalization. In addition, two-stage convenience sampling techniques were used to ensure the sample adequacy; however, this method cannot escape from the selective bias, therefore, probabilistic sampling should be further used in similar kinds of studies. Likewise, this study used first-generation statistical tools, where future research can extend its exploration by using second-generation statistics to maintain robustness. Further, researchers can also focus on the present corporate job setting in Nepal, where burnout is a common phenomenon.

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