

Job Stress, Emotional Exhaustion, and Job Involvement among Food and Beverage Employees in Taiwan

Yan-Syun Huang¹ and Chi-Hsin Wu^{2*}

¹Department of Labor Relations, National Chung Cheng University, Taiwan

²Department of Labor Relations, National Chung Cheng University, Taiwan

*Corresponding Author

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ABSTRACT

Food and beverage employees work under time pressure, variable schedules, intensive customer contact, and interdependent service routines. Drawing on the Job Demands-Resources model and conservation of resources theory, this study examined the relationships among job stress, emotional exhaustion, and job involvement. A cross-sectional electronic survey yielded 106 valid responses from currently employed food and beverage workers in Taiwan. Job stress, emotional exhaustion, and job involvement were measured with multi-item five-point Likert scales. All three scales demonstrated satisfactory internal consistency (Cronbach's $\alpha = .842-.881$). Job stress was strongly and positively associated with emotional exhaustion ($r = .836, p < .001$). Job stress was negatively associated with job involvement ($r = -.201, p = .039$), while emotional exhaustion showed a substantially stronger negative association with job involvement ($r = -.674, p < .001$). Hierarchical regression showed that the absolute coefficient for job stress declined after emotional exhaustion entered the model. Because coefficient attenuation is not a direct test of an indirect effect, the findings support the three bivariate hypotheses but do not establish statistical mediation. Emotional exhaustion nevertheless emerged as the correlate most strongly associated with diminished job involvement. The results support demand-sensitive staffing, predictable scheduling, recovery opportunities, supervisor support, and early assistance for newly hired employees.

Keywords: job stress; emotional exhaustion; job involvement; food and beverage employees; Taiwan; mediation

INTRODUCTION

Food and beverage service is a labor-intensive sector in which service quality is produced through real-time interactions among employees, customers, supervisors, and co-workers. Employees must often coordinate multiple orders, manage customer emotions, comply with hygiene and safety rules, and maintain service speed during peak periods. Long or irregular hours, limited control over scheduling, and the need to display appropriate emotions can turn these routine demands into persistent job stress. Hospitality research has therefore treated employee well-being not merely as an individual concern but as an operational issue associated with service consistency, turnover, and organizational performance [1], [2].

The Job Demands-Resources (JD-R) model offers a parsimonious explanation of this process. Job demands require sustained physical or psychological effort and can initiate a health-impairment process when demands remain high and recovery resources are insufficient [3], [4]. Emotional exhaustion is the most directly energy-related component of burnout and refers to the feeling that one's emotional and psychological resources have been depleted [5], [6]. Conservation of resources theory similarly predicts that individuals seek to protect valued resources and become vulnerable when resources are repeatedly threatened or lost [7]. In food and beverage

work, recurring customer contact, role overload, time pressure, and work-family interference can create precisely such a loss cycle.

This study focuses on job involvement rather than work engagement. Although the two constructs are sometimes translated with the same Chinese term, they are conceptually distinct. Job involvement concerns the degree to which employees cognitively identify with their present job and regard work as important to their self-concept [8], [9]. Work engagement, by contrast, is an energetic and motivational state characterized by vigor, dedication, and absorption [10]. The questionnaire used in this study was adapted from Kanungo's Job Involvement Questionnaire; accordingly, job involvement is the correct outcome construct throughout the revised article.

Prior studies support the individual links among job demands, exhaustion, and positive work attitudes, but three gaps remain. First, evidence from Taiwan's food and beverage workforce is limited compared with evidence from hotels or broad hospitality samples. Second, studies sometimes conflate job involvement with work engagement, weakening construct validity. Third, indirect-effect claims are not always accompanied by contemporary mediation diagnostics. This study addresses the first two gaps empirically and treats the third as both an analytical objective and a reporting issue.

The study asks whether job stress is associated with greater emotional exhaustion, whether emotional exhaustion is associated with lower job involvement, whether job stress has a direct negative association with job involvement, and whether the observed pattern is consistent with emotional exhaustion operating as an intervening mechanism. By examining these relationships together, the article contributes a constructually precise account of how demanding service work may weaken employees' identification with their jobs.

THEORETICAL BACKGROUND AND HYPOTHESES

Job Stress and Emotional Exhaustion

Job stress arises when employees appraise work demands as exceeding the resources available to manage them [11]. The JD-R model does not assume that every demand is inherently harmful; rather, impairment becomes likely when demands are chronic, intense, and insufficiently balanced by autonomy, support, feedback, or recovery [3], [4]. Food and beverage employees commonly experience workload variability, customer incivility, role conflict, and schedule unpredictability. Evidence from hotel and catering settings shows that high job demands are associated with stronger stress reactions, whereas job control and work-life balance practices can buffer those reactions [2].

Emotional exhaustion represents the depletion endpoint of sustained resource expenditure. It is distinct from short-term fatigue because it reflects an enduring sense of being emotionally overextended by work [5]. Emotional labor intensifies this process when employees must regulate feelings and expressions to meet service expectations [12]. When high demands persist, employees invest additional attention and self-regulatory effort without adequate replenishment, making exhaustion increasingly likely [7].

H1: Job stress is positively associated with emotional exhaustion among food and beverage employees.

Emotional Exhaustion and Job Involvement

Job involvement reflects psychological identification with one's current job [8]. Highly involved employees view work as personally meaningful and as an important part of their self-definition. This cognitive attachment should be difficult to sustain when emotional resources are depleted. Exhausted employees are more likely to conserve remaining resources by psychologically distancing themselves from work, reducing discretionary effort, and narrowing their identification with the job. Meta-analytic work identifies job involvement as a meaningful work attitude associated with job characteristics and organizational outcomes [9].

The proposed relationship also follows conservation of resources theory: disengaging cognitively from a demanding role may function as a defensive response to continued resource loss [7]. Empirical work has linked emotional exhaustion with poorer job performance and voluntary turnover [13], indicating that exhaustion can alter both attachment to and behavior at work.

H2: Emotional exhaustion is negatively associated with job involvement.

Job Stress and Job Involvement

Stressful work can undermine job involvement directly by weakening perceived control, meaning, and compatibility between work and personal needs. Role conflict and ambiguity make it more difficult for employees to interpret what constitutes successful performance [14]. The demand-control model similarly suggests that psychologically demanding work is especially harmful when decision latitude is limited [15]. In tightly coordinated service environments, employees may have little discretion over pace, customer assignments, or break timing, increasing the likelihood that stress is experienced as externally imposed rather than as a meaningful challenge.

At the same time, a direct relationship may be weaker than the relationship operating through emotional exhaustion. Employees can remain cognitively involved in a demanding job for a period, but chronic stress may gradually deplete the emotional resources required to sustain that involvement. This distinction motivates testing both a total association and an indirect pathway.

H3: Job stress is negatively associated with job involvement.

The Intervening Role of Emotional Exhaustion

The health-impairment process in the JD-R model provides the central mediation logic: sustained demands consume energy, exhaustion develops, and subsequent work attitudes deteriorate [3], [4]. Emotional exhaustion is therefore not simply another correlate of job stress; theoretically, it is the proximal depletion state through which chronic demands may translate into reduced job identification. The proposed sequence also accords with conservation of resources theory, under which initial resource loss increases vulnerability to further loss [7].

Mediation is a statistical statement about an indirect effect and cannot be inferred solely from a decline in a regression coefficient. The causal-steps approach remains historically influential [16], whereas product-of-coefficients and bootstrap procedures provide more direct tests and generally greater statistical power [17]. Accordingly, the hierarchical regression was interpreted as an exploratory appraisal of the proposed intervening pathway rather than as a definitive test of mediation.

H4: Emotional exhaustion statistically intervenes in the relationship between job stress and job involvement.

METHODOLOGY

Research Design and Participants

A quantitative, cross-sectional, descriptive-correlational design was used. The target population consisted of employees currently working in Taiwan's food and beverage industry, including frontline service and back-of-house personnel. Data were collected using an electronic questionnaire, producing a final analytic sample of 106 valid responses. Participants were recruited through non-probability sampling. The estimates therefore describe the participating employees and are not population estimates for the entire Taiwanese food and beverage workforce.

The sample was relatively young: 66.0% were aged 21-30 and 19.8% were aged 20 or below. Women accounted for 55.7% of respondents, 84.9% were unmarried, and 88.7% had completed college or university education.

Two-thirds (66.0%) were non-supervisory employees. These characteristics are relevant because early-career workers may have less occupational experience and fewer accumulated coping resources.

Table 1. Demographic Characteristics of Respondents (N = 106)

Characteristic	Category	n	%
Sex	Male	47	44.3
	Female	59	55.7
Marital status	Married	10	9.4
	Unmarried	90	84.9
	Other	6	5.7
Education	High school or below	7	6.6
	College/university	94	88.7
	Graduate degree	5	4.7
Age	20 or below	21	19.8
	21-30	70	66.0
	31-40	13	12.3
	41-50	2	1.9
Supervisory status	Supervisor	36	34.0
	Non-supervisor	70	66.0
Annual income (NTD)	Below 400,000	63	59.4
	400,000-599,999	25	23.6
	600,000-799,999	11	10.4
	800,000 or above	7	6.6
Organizational tenure	≤2 months	30	28.3
	3-11 months	34	32.1
	≥1 year	42	39.6

Note. Percentages were recalculated from the reported frequencies where necessary; rounding may produce totals of 99.9% or 100.1%.

Measures

All substantive items used a five-point Likert response format. Job stress was measured with 10 items adapted from Chinese-language occupational stress instruments cited in the source questionnaire. Items assessed

anxiety, overload, time pressure, fear of errors, and strain arising from customer or supervisory contact. Higher scores indicated greater perceived job stress.

Emotional exhaustion was assessed with nine items adapted from the emotional-exhaustion dimension of the Maslach Burnout Inventory [18]. The items captured feeling emotionally drained, fatigued at the end of the workday, and depleted by sustained interpersonal contact. Higher scores indicated greater exhaustion.

Job involvement was measured with 10 items adapted from Kanungo's Job Involvement Questionnaire [8]. Two negatively worded items were reverse-coded before composite scores were computed. Higher values indicated stronger cognitive identification with the current job. Labeling this measure as job involvement is essential because the instrument does not operationalize the vigor, dedication, and absorption dimensions of work engagement [10].

Table 2. Measures and Internal Consistency

Construct	Items	Response format	Cronbach's α
Job stress	10	5-point Likert	.873
Emotional exhaustion	9	5-point Likert	.881
Job involvement	10	5-point Likert; two reverse-coded items	.842

Data Analysis

IBM SPSS Statistics was used in the source study for descriptive statistics, internal-consistency analysis, Pearson product-moment correlations, and regression analysis. Statistical tests were two-tailed. Cronbach's alpha values of .70 or higher were interpreted as acceptable for research use [19]. Pearson correlations were used to evaluate the bivariate hypotheses. Regression coefficients were reviewed to assess the proposed paths and the attenuation of the job stress coefficient after emotional exhaustion entered the model.

Statistical tests were two-tailed. The bivariate hypotheses were evaluated using Pearson correlations, and p values were determined from the reported coefficients and sample size. The hierarchical regression assessed whether the coefficient linking job stress with job involvement changed after emotional exhaustion entered the model. Consistent with contemporary mediation standards, attenuation alone was not treated as proof of an indirect effect [17], [20].

RESULTS AND DISCUSSION

Reliability and Bivariate Relationships

The three measures demonstrated good internal consistency: $\alpha = .873$ for job stress, $\alpha = .881$ for emotional exhaustion, and $\alpha = .842$ for job involvement. These estimates support use of the composite scores, although internal consistency alone does not establish factorial validity.

Table 3 reports the focal correlations. Job stress was strongly and positively related to emotional exhaustion ($r = .836$, $p < .001$), supporting H1. Emotional exhaustion was strongly and negatively related to job involvement ($r = -.674$, $p < .001$), supporting H2. Job stress was also negatively related to job involvement, but the association was small ($r = -.201$, $p = .039$), supporting H3 at the .05 level. The contrast between the modest stress-involvement correlation and the much stronger exhaustion-involvement correlation highlights emotional depletion as the more proximal correlate of job identification.

Table 3. Correlations among the Focal Variables

Variable	1	2	3
1. Job stress	1		
2. Emotional exhaustion	.836***	1	
3. Job involvement	-.201*	-.674***	1

Note. N = 106. * $p < .05$. *** $p < .001$ (two-tailed).

Regression Pattern and Mediation Appraisal

The simple regression of emotional exhaustion on job stress produced a large positive standardized coefficient ($\beta = .836$, $p < .001$). The total association between job stress and job involvement was negative ($\beta = -.201$, $p = .039$). In the hierarchical model, the absolute job stress coefficient declined after emotional exhaustion entered the model (from $\beta = -.201$ to $\beta = -.126$), while emotional exhaustion showed a negative coefficient ($\beta = -.582$). This attenuation is descriptively consistent with the proposed intervening pathway.

Coefficient attenuation does not constitute a formal test of the indirect effect [17]. Because no inferential estimate of the indirect effect was included in the analysis, H4 was not supported. The result should be interpreted as evidence that emotional exhaustion is an important correlate of both job stress and job involvement, without a statistical claim that it mediates their relationship.

Table 4. Summary of Hypothesis Tests

Hypothes	Proposed relationship	Evidence	Decision
H1	Job stress $\rightarrow$ emotional exhaustion (+)	$r/\beta = .836$, $p < .001$	Supported
H2	Emotional exhaustion $\rightarrow$ job involvement (-)	$r = -.674$, $p < .001$	Supported
H3	Job stress $\rightarrow$ job involvement (-)	$r/\beta = -.201$, $p = .039$	Supported
H4	Indirect pathway through emotional exhaustion	Coefficient attenuation observed; no inferential indirect-effect test	Not supported

Interpretation

The strong stress-exhaustion relationship is consistent with the JD-R health-impairment process. Food and beverage work often combines quantitative demands, such as workload and speed, with qualitative demands, such as emotional regulation and customer-facing conflict. When these demands are sustained without adequate staffing, recovery, or control, emotional resources are likely to erode [2]-[4].

The negative association between emotional exhaustion and job involvement is theoretically important because it concerns cognitive identification with the present job, not only momentary energy. Employees who feel emotionally depleted may protect remaining resources by distancing the self from the work role. This interpretation aligns with conservation of resources theory [7] and with prior evidence linking exhaustion to performance and turnover [13].

The relatively small bivariate relationship between job stress and job involvement suggests that demanding work does not uniformly eliminate identification with the job. Some employees may remain highly involved despite pressure, especially when the work is meaningful or when supervisors and co-workers provide resources. Emotional exhaustion may differentiate tolerable challenge from resource-depleting strain; however, the present results establish association, not mediation or causality.

The demographic analysis also indicated that longer tenure was associated with lower job stress ($r = -.276, p < .01$). This pattern may reflect greater task familiarity and coping experience, although selective retention is another plausible explanation: employees experiencing greater stress may leave earlier. The cross-sectional design cannot distinguish adaptation from selective retention.

PRACTICAL IMPLICATIONS

The findings imply that food and beverage employers should manage the conditions that generate exhaustion rather than relying exclusively on individual resilience training. Demand-sensitive staffing is a first priority. Managers can use sales volume, order counts, table turnover, delivery traffic, and queue length to forecast peak demand and schedule sufficient coverage. Micro-breaks and task rotation should be protected during extended peak periods, particularly for employees assigned continuously to emotionally demanding customer-facing roles.

Scheduling quality is equally important. Advance notice, limits on closing-to-opening shifts, and transparent shift-swapping procedures can reduce work-family interference and perceived unpredictability. Greater employee input into scheduling functions as a job resource because it increases control over how demands are managed [2], [15].

Supervisors should be trained to recognize early signs of exhaustion, including irritability, withdrawal, concentration difficulties, and recurrent absence. Brief structured check-ins, respectful communication, and clear escalation channels can provide support without stigmatizing employees. Anonymous feedback mechanisms may reveal recurrent operational stressors that employees are reluctant to report directly.

Newly hired employees deserve particular attention. The sample was predominantly young and early-career, and the source analysis associated longer tenure with lower stress. A staged onboarding process, realistic job previews, buddy systems, and protected practice time can reduce uncertainty and error anxiety. Experienced workers can serve as mentors, but mentoring responsibilities should be recognized in workload allocation rather than added invisibly.

Finally, wellness initiatives should supplement—not replace—work redesign. Exercise subsidies, counseling access, and stress-management education may help employees recover, but they cannot compensate for persistent understaffing, unpredictable schedules, or abusive customer interactions. The strongest intervention logic is therefore to reduce avoidable demands, expand resources, and monitor exhaustion as an organizational risk indicator.

LIMITATIONS OF THE STUDY

Several limitations constrain interpretation. First, the cross-sectional design does not establish temporal ordering among stress, exhaustion, and involvement, and reverse or reciprocal effects remain possible. Second, the small non-probability sample was concentrated among younger respondents, limiting generalization to older workers, managers, and employees across the full range of food and beverage establishments. Third, all focal variables were measured by self-report in one questionnaire, which may increase common-method variance and social-desirability bias [21].

Fourth, internal consistency was satisfactory, but confirmatory factor analysis was not conducted; consequently, the factorial distinctiveness of the three adapted scales was not evaluated. Fifth, the hierarchical regression assessed coefficient attenuation but did not provide an inferential estimate of the indirect effect. The evidence therefore supports associations among the constructs but not a formal mediation conclusion.

CONCLUSION

This study examined job stress, emotional exhaustion, and job involvement among 106 food and beverage employees in Taiwan. Job stress showed a strong positive association with emotional exhaustion, emotional exhaustion showed a strong negative association with job involvement, and job stress showed a smaller negative association with job involvement. The hierarchical regression pattern was consistent with an intervening role for emotional exhaustion, but it did not provide a formal test of the indirect effect. The study therefore concludes that emotional exhaustion is a central correlate of diminished job involvement without claiming statistical mediation.

The study contributes by distinguishing job involvement, measured with Kanungo's questionnaire, from work engagement. Substantively, the findings direct managers toward staffing, scheduling, job control, supervisor support, recovery opportunities, and early-career assistance. Methodologically, the results demonstrate the value of construct precision and appropriately bounded conclusions in cross-sectional hospitality workforce research.

DECLARATIONS

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Ethics and Informed Consent: The questionnaire introduction explained the academic purpose of the study. Participation was voluntary, responses were anonymous, and completion of the electronic questionnaire indicated informed consent.

Data Availability: The aggregate data supporting the findings are presented in this article.

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