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Principal Working Conditions, Burnout, and Job Satisfaction: The Mediating and Moderating Role of COVID-19 Stress

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Abstract

School principals face unprecedented occupational stress and burnout, intensified by the COVID-19 pandemic. Understanding how working conditions influence principal wellbeing is essential for developing effective support systems. Drawing on the Job Demands–Resources framework and stress and coping theories, this study examines the relationships between working conditions and principal wellbeing, investigating COVID-19 stress as both a mediator and moderator. Using structural equation modeling, we analyzed survey data from 184 Utah principals collected during the pandemic. Results indicated that job resources were consistently related to lower emotional exhaustion and depersonalization, and higher personal accomplishment and job satisfaction. Workload was positively related to emotional exhaustion and depersonalization and negatively related to job satisfaction but was unrelated to personal accomplishment. COVID-19 stress partially mediated relationships between working conditions and burnout outcomes, contributing to both strain (emotional exhaustion, depersonalization) and enhanced sense of accomplishment. Stress also moderated the protective effects of job resources on burnout, with principals experiencing increased pandemic stress requiring substantially more organizational support to maintain comparable wellbeing levels. COVID-19 stress neither mediated nor moderated the associations between working conditions (workload and job resources) and job satisfaction. These findings suggest that principal wellbeing can be supported through multiple pathways involving both organizational improvements and stress reduction strategies, with crisis periods requiring enhanced resource allocation to maintain leadership effectiveness and sustainability.

Keywords: principal burnout; job satisfaction; working conditions; COVID-19 stress; job demands–resources



Academic Editor: Eila Jeronen

Received: 22 October 2025

Revised: 2 December 2025

Accepted: 9 December 2025

Published: 5 February 2026

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1. Introduction

School principals hold one of the most complex and demanding positions within the education system. Their responsibilities include instructional leadership, personnel management, budgeting, legal compliance, safety, community relations, and increasingly, navigating contentious social issues (Friedman, 2002). These already challenging duties became exponentially more complex during the COVID-19 pandemic, which introduced unprecedented disruptions to school-based activities and magnified the pressures on school leaders (Arastaman & Çetinkaya, 2022; Kaufman et al., 2022). Although the acute phase of

the COVID-19 pandemic ended in 2023, schools continued to face substantial pandemic-related challenges through the 2023–2024 school year and beyond.

Extensive research has shown that principal leadership is among the most influential school-based factors affecting student learning, teacher success, and other critical educational outcomes (Grissom et al., 2021). As principal wellbeing gains increasing recognition as vitally important, with effects extending beyond principals themselves to promoting teacher wellbeing, enhancing leadership effectiveness, and advancing school improvement, important questions remain (Beausaert et al., 2023). In particular, it is crucial to understand how principals navigated the heightened demands and constrained resources of their roles during the COVID-19 pandemic, and how these challenging conditions have shaped their wellbeing (Ertem, 2024).

Since the onset of COVID-19, scholarly attention to educators' wellbeing has increased considerably. However, most of this research has centered on teachers, with comparatively less attention devoted to school leaders. Although a recent systematic review indicates growing attention to principal wellbeing, the existing studies have largely identified antecedents of burnout, with limited understanding of the mechanisms through which working conditions influence principals' wellbeing (Rogers et al., 2025). Critically, no prior research has examined whether COVID-related stress functions as a mediator or moderator in the relationship between working conditions and principals' wellbeing. Understanding these pathways is essential, as it can inform targeted supports that promote leadership wellbeing and strengthen sustainability—particularly under crisis conditions. This study adopts the Job Demands–Resources (JD-R) framework, which conceptualizes wellbeing as a function of the balance between workplace demands and available resources (Bakker & Demerouti, 2017). Additionally, we draw on stress and coping theories, which emphasize how individuals' appraisal of stressful events and available resources influences their coping responses and wellbeing outcomes. The COVID-19 pandemic may have fundamentally altered these relationships, with pandemic-related stress potentially mediating the effects of working conditions on wellbeing or moderating the strength of these relationships. Drawing on survey data collected from K–12 principals in Utah public schools during the pandemic, this study investigates the following research questions:

RQ1: To what extent do working conditions relate to principals' experiences of burnout and job satisfaction?

RQ2: To what extent does COVID-19 stress mediate the relationship between working conditions, burnout, and job satisfaction?

RQ3: To what extent does COVID-19 stress moderate the relationship between working conditions, burnout, and job satisfaction?

By addressing these questions, this study contributes to a deeper understanding of how working conditions and pandemic-related stress interact to shape principal wellbeing. In doing so, it aims to inform the development of targeted strategies to better support school leaders, not only during times of crisis but also in sustaining their effectiveness and wellbeing in the long term.

2. Literature Review

2.1. Conceptualization of Principal Wellbeing: Burnout and Job Satisfaction

There is growing interest in educational leadership wellbeing because of school leaders' roles in school improvement and student success (Beausaert et al., 2023; Grissom et al., 2021). Wellbeing is commonly conceptualized as a multidimensional construct that includes psychological, physical, and social dimensions of functioning (Wang, 2024). Research in educational leadership wellbeing has often focused on two key constructs: burnout and job satisfaction (Horwood et al., 2022; Rogers et al., 2025). Burnout reflects the negative aspects

of work-related psychological strain, whereas job satisfaction captures the positive aspects of work fulfillment and engagement (Devos et al., 2007).

Maslach and Jackson (1981) conceptualized burnout as a three-dimensional construct, including emotional exhaustion, depersonalization, and reduced personal accomplishment. This three-factor model remains the dominant framework for understanding educator burnout (Federici & Skaalvik, 2012). For school principals, emotional exhaustion manifests as feeling emotionally overextended and depleted by work demands. Depersonalization involves developing cynical or detached attitudes toward students, teachers, and the educational process, while reduced personal accomplishment reflects diminished feelings of competence and achievement in leadership roles (Maslach et al., 2018).

In contrast, job satisfaction represents individuals' positive evaluations of their work experiences and the fulfillment derived from their roles (Locke, 1969). Unlike burnout, which emphasizes psychological strain and dysfunction, principals' job satisfaction encompasses cognitive and affective responses that reflect contentment, pride, and engagement with the principalship (Wang et al., 2018). Importantly, burnout and job satisfaction represent distinct but correlated dimensions of work-related experiences (Devos et al., 2007). These constructs are not simply opposite ends of a single continuum—principals can simultaneously experience aspects of burnout (e.g., emotional exhaustion from high demands) while maintaining satisfaction with other aspects of their role (e.g., meaningful work with students). This distinction is particularly important for understanding principal wellbeing during crisis periods such as the COVID-19 pandemic, because external stressors may differentially affect these dimensions, with some factors contributing primarily to psychological strain (burnout), while others influence satisfaction and fulfillment.

The wellbeing of school principals has far-reaching consequences that extend beyond individual leaders. Principals experiencing high levels of burnout exhibit reduced leadership effectiveness across multiple domains. Emotional exhaustion has been associated with decreased decision-making capacity, reduced innovation, and strained interpersonal relationships with teachers and staff (Rogers et al., 2025). Burned-out principals are more likely to adopt authoritarian leadership styles, display reduced empathy, and be less available to support teachers and students (Persson et al., 2021). On the other hand, satisfied principals are more likely to engage in distributional and transformational leadership practices, sustain a strong commitment to school improvement, and cultivate positive relationships with stakeholders (Liu & Werblow, 2019; Wang et al., 2018). Also, satisfied principals are more likely to remain in their positions (Fraser & Brock, 2006). They also encourage teachers to aspire to the principal position (Grady et al., 1992).

2.2. Job Demands–Resources Model and Principal Wellbeing

The Job Demands–Resources (JD-R) model provides a valuable framework for understanding how working conditions influence principal wellbeing, particularly in light of the complex and high-pressure nature of school leadership (Bakker & Demerouti, 2017; Marsh et al., 2023). According to the model, job demands, such as accountability pressures, time constraints, role ambiguity, and interpersonal conflict, require sustained effort and can lead to energy depletion and burnout when they exceed an individual's capacity to cope. In contrast, job resources, such as autonomy, social support, and professional development opportunities, promote engagement, motivation, and positive outcomes like job satisfaction (Afshari et al., 2022). The JD-R model outlines two core mechanisms: the health impairment process, whereby excessive demands undermine wellbeing, and the motivational process, through which resources enhance it.

Empirical research applying the JD-R model to educational contexts has consistently demonstrated relationships between these job resources and demands and principal wellbe-

ing outcomes (Skaalvik & Skaalvik, 2020). Workload, measuring job demands, has emerged as the most consistent predictor of principal burnout across numerous studies (Fogarty et al., 2000; Gaziel, 1993; Yildirim & Dinc, 2019). Research consistently shows that principals work an average of 58.3 h per week, with many reporting that they lack sufficient time to complete necessary tasks (Ni et al., 2024; Taie & Lewis, 2022). A systematic review by Rogers et al. (2025) found that 26% of studies examining principal burnout identified workload as a significant antecedent. The relationship between workload and emotional exhaustion appears particularly robust, with several longitudinal studies demonstrating that increases in workload predict subsequent increases in burnout symptoms (Dicke et al., 2018). Excessive workload, time pressure, and emotional exhaustion can reduce principals' job satisfaction, especially in the context of limited work resources (e.g., budget cuts, personnel issues) (Wang et al., 2018).

Job resources, on the other hand, have been consistently linked to positive wellbeing outcomes among principals. Studies across multiple countries have shown that principals who report greater autonomy in decision-making experience lower levels of burnout and higher job satisfaction (Federici & Skaalvik, 2012; Horwood et al., 2022; Mijakoski et al., 2023). Intrinsic rewards and social recognition are generally associated with higher job satisfaction, whereas monetary rewards tend to show weaker associations (Leiter & Maslach, 2011). Similarly, principals who report strong relationships with colleagues, supervisors, and community members demonstrate lower burnout and greater job satisfaction (Beausaert et al., 2023; Leksy et al., 2023). Finally, values alignment between principals and their organizations is positively related to job satisfaction and negatively related to burnout, particularly during periods of organizational change when conflicts may arise between personal beliefs and institutional expectations (Leiter & Maslach, 2011).

2.3. Principal Stress Related to COVID-19: Mediating and Moderating Roles

The COVID-19 pandemic created a complex array of new demands for school principals while disrupting traditional sources of job resources. On top of existing responsibilities, principals faced immediate challenges including transitioning to remote learning, implementing health and safety protocols, managing teacher and student anxiety, and navigating rapidly changing policies and guidelines (Arastaman & Çetinkaya, 2022). These demands created an unprecedented level of role complexity and ambiguity (Kaufman et al., 2022).

The relationships among working conditions, COVID-19 stress, and principal wellbeing may be more nuanced than initially anticipated. The Transactional Model of Stress and Coping (Lazarus & Folkman, 1984) suggests that stress outcomes depend on individuals' cognitive appraisals of demands and their available resources. When principals appraise COVID-19 challenges as manageable given their organizational resources, the pandemic may function as a challenge stressor that enhances motivation and growth (Tedeschi & Calhoun, 2004; Yang & Li, 2021). Conversely, when demands exceed perceived resources, COVID-19 becomes a threat stressor leading to strain and depletion (Wallis et al., 2023).

This framework suggests that COVID-19 stress may function as a mediator in the relationship between working conditions and principal wellbeing. Principals with greater job resources may experience reduced threat appraisals and enhanced challenge appraisals of pandemic demands, potentially providing protection against negative burnout dimensions while enhancing positive outcomes like professional accomplishment (Lazarus & Folkman, 1984). In terms of job demand, heavy workloads often lead principals to experience emotional exhaustion, with COVID-19 functioning as a threat stressor that contributes to strain and depletion (Wallis et al., 2023). However, principals with strong resources and support systems may be able to manage heavy workload demands and navigate unprecedented challenges more effectively; in such cases, COVID-19 can function as a challenge stressor,

fostering enhanced self-efficacy and clarified priorities (Tedeschi & Calhoun, 2004; Wallis et al., 2023). Thus, the same external stressor can contribute to both negative and positive wellbeing outcomes depending on how it is appraised and the resources available to address it.

In addition, COVID-19 stress may function as a moderator that changes the strength of relationship between working conditions and wellbeing outcomes. In other words, external stressors like the pandemic can alter the effectiveness of job resources in protecting against burnout (Demerouti et al., 2001; Zhou et al., 2022). Compared to principals experiencing no significant COVID-19 stress, principals experiencing heightened pandemic-related stress may find the protective capacity of job resources diminished or insufficient due to increased demands for stress-buffering, making job resources, such as social support, autonomy, and recognition, particularly critical for preventing burnout and maintaining job satisfaction (Cohen & Wills, 1985). In addition, this moderation effect may operate differently across wellbeing dimensions—job resources may maintain their protective effects against some aspects of burnout while being less effective against other aspects during high-stress periods between principals who experience COVID-19 stress differently.

2.4. Conceptual Framework

Despite growing attention to principal wellbeing, critical gaps remain in our understanding of how working conditions influence principal wellbeing. In particular, there is limited research on how external stressors, such as those introduced by the COVID-19 pandemic, interact with working conditions to influence principal wellbeing. To address these gaps, this study proposes a comprehensive conceptual framework that integrates the JD-R model and the Transactional Model of Stress and Coping with specific attention to the mediating and moderating roles of COVID-19 stress in the relationship between working conditions and principal wellbeing. Within this framework, working conditions are conceptualized as comprising two distinct theoretical components consistent with the JD-R model: job demands and job resources. Principal wellbeing is conceptualized as multidimensional, encompassing distinct but correlated aspects: burnout dimensions (emotional exhaustion, depersonalization, and lack of personal accomplishment) and job satisfaction. This multidimensional approach recognizes that job demands and resources, as well as COVID-19 stress, may affect different aspects of wellbeing through different mechanisms.

As illustrated in Figure 1, the framework presents both direct paths from job demands and resources to each wellbeing outcome, as well as indirect paths through COVID-19 stress (mediation) and differential effects depending on stress levels (moderation). Three sets of hypotheses were generated. First, regarding direct effects, working conditions may directly affect both burnout and job satisfaction. Consistent with the JD-R model, we hypothesize that job demands will be positively associated with burnout, while job resources will be negatively associated with burnout and positively associated with job satisfaction (H1). Second, regarding mediation, working conditions may indirectly influence wellbeing through their effects on COVID-19 stress, representing a mediation pathway. We hypothesize that principals with greater job resources will experience lower COVID-19 stress, providing additional protection against burnout, while poor working conditions, particularly heavy job demands, will increase vulnerability to experiencing pandemic-related stress, which subsequently affects their wellbeing. Depending on whether functioning as a challenge stressor or threat stressor, COVID-19 stress can contribute to both negative and positive wellbeing outcomes (H2). Third, COVID-19 stress may moderate the relationships between working conditions and wellbeing. We hypothesize that during periods of high external stress, job resources will be particularly important for maintaining wellbeing, while resource deficits may be especially detrimental (Cohen & Wills, 1985). The strength of relationships between

working conditions and wellbeing may depend on the level of external stress experienced, and the moderating effects might differ among different wellbeing dimensions (H3). Finally, the framework includes principal and school characteristics, such as principal experience, demographics, and school context, as important control variables that may influence the relationships among variables in the model.

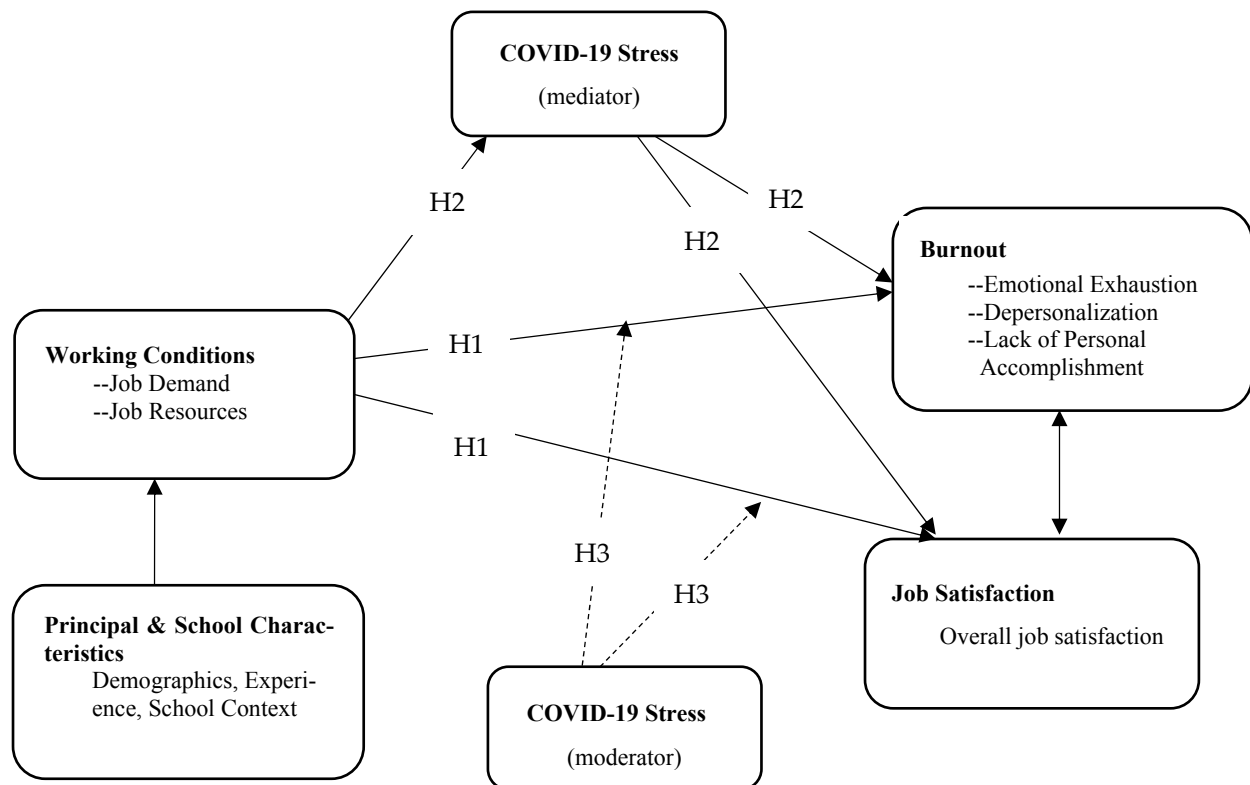


Figure 1. Conceptual Framework.

3. Data and Methods

3.1. Participants and Data Collection

Data for this study were collected via survey during the 2023–2024 school year, a period when school leaders were navigating the ongoing effects of the COVID-19 pandemic on school-based activities and leadership practices. While acute pandemic restrictions had ended, the educational landscape remained fundamentally altered from pre-pandemic conditions, making this an appropriate period for examining sustained pandemic effects on principal wellbeing. The target population consisted of all K-12 principals serving in Utah public schools. An email containing a link to a self-administered, web-based survey was sent to all elementary principals listed in the Utah School Board of Education database and each member of the Utah Association of Elementary School Principals and the Utah Association of Secondary School Principals currently serving as K-12 principals. The survey was distributed from December 2023 to January 2024. The survey guaranteed participant anonymity, with no personally identifiable information being collected. Participants were informed about the study's purpose and provided consent by completing the survey.

Of the survey links distributed, 184 principals completed the survey in full. The response rate was 17%, calculated based on the total membership of the two professional associations. As shown in Table 1, the majority of respondents were female (54.9%) and served at the elementary level (71.2%). Half of the principals were between 45 and 54 years old (50.0%), and most had relatively limited experience, with 39.1% having 0–5 years of principal experience and 35.3% having 6–10 years. The sample was predominantly White

(92.9%), with 67.9% serving in suburban schools, 18.5% in rural schools, and 13.6% in urban schools. Overall, the sample closely mirrored the population in gender, race, and age distribution, with some overrepresentation of elementary-level principals and those with 6–10 years of experience, and underrepresentation of high school principals and those with 0–5 years of experience.

Table 1. Descriptive Statistics of Principal Demographics, 2023–2024.

	Sample (%) (N = 184)	Population (N = 1075)
Women	54.9	54.8
Principals of color	7.1	4.6
Age		
44 or younger	31.0	31.5
45–54	50.0	45.7
55 and older	19.0	22.4
Principal experience		
0–5 years	39.1	51.5
6–10 years	35.3	28.3
11–15 years	14.7	13.0
16 and more years	10.9	7.2
School level		
Elementary	71.2	57.5
Middle School/Junior High	11.4	9.3
High school	11.4	26.7
Other	6.0	
Location		
Rural	18.5	14.7
Suburban	67.9	68.0
Urban	13.6	16.9
Job satisfaction		
Very unsatisfied	7.1	
Dissatisfied	22.3	
Neutral	21.2	
Satisfied	38.6	
Very satisfied	10.9	
Stress during COVID-19		
Increased	82.1	
No change or decreased	17.9	

3.2. Measures

All measures except COVID-19 stress assessed principals' current experiences at the time of the survey (2023–2024 school year). This approach allowed us to examine how perceived changes in stress since the pandemic relate to principals' current wellbeing and how these perceptions may shape the associations between current working conditions and well-being in an educational environment that continues to experience pandemic-related disruptions.

Overall job satisfaction was measured with a single item: "How would you describe your current overall job satisfaction?" Response options ranged from Very Dissatisfied (1) to Very Satisfied (5), with higher scores indicating greater satisfaction. Single-item measures of global job satisfaction demonstrate adequate reliability and validity (Wanous et al., 1997; Dolbier et al., 2005) and are widely used in large-scale educational surveys such as the Schools and Staffing Survey and the National Teacher and Principal Survey. Nearly half of principals (49.4%) reported being very satisfied or satisfied, 21.2% were neutral, and 29.4%

were dissatisfied or very dissatisfied (Table 1). *COVID-related stress* was assessed with a single item asking whether principals' job stress had increased, decreased, or remained the same since the COVID-19 outbreak. Given that few principals reported decreased stress, we collapsed responses into a binary variable (0 = decreased or remained the same; 1 = increased stress) for analysis. Consistent with the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984), this measure captures principals' subjective appraisal of whether the pandemic increased their stress. Most principals (82.1%, $n = 151$) reported increased stress during COVID-19, while 17.9% ($n = 33$) reported decreased stress or no change (Table 1).

Principal burnout was assessed using the Maslach Burnout Inventory-Educators Survey (MBI-ES), a well-established and psychometrically sound instrument for measuring burnout in educational contexts (Maslach et al., 2018). The MBI-ES, refined through more than three decades of application across diverse work settings, is specifically adapted for educators, including school administrators. As summarized in Table 2, the instrument items capture three dimensions of burnout principals currently experience: *Emotional Exhaustion*, reflecting feelings of being emotionally overextended and depleted of energy; *Depersonalization*, indicating detached or impersonal attitudes toward students and colleagues; and *Lack of Personal Accomplishment*, representing diminished perceptions of competence and achievement, with original items reverse-coded to align higher scores with greater burnout. Respondents indicated the frequency of each experience on a 7-point scale ranging from 0 (Never) to 6 (Every day). Some items were reverse coded as needed to ensure uniform directionality.

Table 2. Descriptive Statistics, Factor Loadings, and Reliability for Burnout Measures (MBI-ES).

	Mean	SD	Factor Loading
Emotional Exhaustion ($\alpha = 0.92$)	3.70	1.29	
I feel emotionally drained from my work	4.43	1.36	0.79
I feel used up at the end of the workday	4.82	1.31	0.74
I feel fatigued when I get up in the morning and have to face another day on the job	4.01	1.68	0.76
I feel burned out from my work	3.79	1.76	0.90
I feel frustrated by my job	3.92	1.55	0.84
I feel I'm working too hard on my job	4.07	1.81	0.73
Working with people directly puts too much stress on me	2.03	1.60	0.55
I feel like I'm at the end of my rope	2.53	1.89	0.79
Lack of Personal Accomplishment ($\alpha = 0.83$)	1.63	0.98	
I deal very effectively with the problems of my recipients (R)	0.90	0.91	0.50
I feel I'm positively influencing other people's lives through my work (R)	1.45	1.30	0.75
I feel very energetic (R)	2.23	1.54	0.64
I can easily create a relaxed atmosphere with my recipients (R)	1.51	1.33	0.64
I feel exhilarated after working closely with my recipients (R)	1.89	1.37	0.69
I have accomplished many worthwhile things in this job (R)	1.80	1.48	0.81
Depersonalization ($\alpha = 0.77$)	3.07	1.56	
I've become more callous toward people since I took this job	2.64	1.84	0.84
I worry that this job is hardening me emotionally	2.98	2.06	0.94
I feel recipients blame me for some of their problems	3.59	1.71	0.46

Work conditions were assessed using the Areas of Worklife Survey (AWS), a widely used instrument that has been extensively validated internationally across multiple occupational sectors, including education. The AWS measures six organizational domains influencing employee wellbeing: workload, control, reward, community, fairness, and values (Leiter & Maslach, 2011). Within the JD-R framework, these domains function as either job demands or job resources, with some potentially serving as both depending on context. In this study, workload—the quantity and intensity of required work—was treated as the primary job demand, whereas control (autonomy, decision-making authority, and access to

resources), reward (monetary and social recognition), community (quality of workplace relationships), fairness (perceived equity and justice), and values (alignment between personal and organizational values) were categorized as job resources. Principals rated their current agreement with each item on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Negatively worded items were reverse coded prior to analysis.

3.3. Analytical Strategies

All statistical analyses were conducted using structural equation modeling (SEM) in Stata 18. The analytical approach proceeded in two main stages: measurement model estimation followed by structural model estimation. First, a confirmatory factor analysis (CFA) was performed as the measurement model to examine the factor structure of the MBI-ES and AWS and to generate factor scores for all latent variables. The resulting latent variables were then incorporated into the structural model to address the study's research questions.

To address Research Question 1, we estimated a structural model examining the direct relationships between working conditions and the two principal wellbeing outcomes: burnout and job satisfaction. Burnout dimensions (emotional exhaustion, depersonalization, and lack of personal accomplishment) and job satisfaction were specified as correlated dependent variables, with job resources and workload as predictors. Principal gender and experience were included as control variables predicting working conditions. Other principal and school characteristics (e.g., age, race, school level, and school location) were excluded from the final models due to lack of statistical significance.

For Research Question 2, we conducted mediation analysis to test whether COVID-19 stress mediated the relationships between working conditions and wellbeing outcomes. The mediation model included (1) paths from working conditions (job resources and workload) to COVID-19 stress, (2) paths from COVID-19 stress to wellbeing outcomes (burnout dimensions and job satisfaction), and (3) direct paths from working conditions to wellbeing outcomes. Although COVID-19 stress was measured as a binary variable, SEM can accommodate categorical indicators when modeling latent variable relationships.

To address Research Question 3, we employed multi-group SEM to test whether COVID-19 stress moderates the relationships between working conditions and wellbeing outcomes. COVID-19 stress was operationalized as a categorical grouping variable, comparing principals who reported increased stress ($n = 151$) versus those who reported decreased or no change in stress ($n = 33$). This approach is specifically designed for categorical moderators and tests whether the effects of working conditions on principal wellbeing differ significantly between groups.

All SEM analyses used maximum likelihood estimation with robust standard errors (MLR). Model fit was evaluated using multiple indices including χ^2 , comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). Conventional cutoff criteria were applied: CFI and TLI ≥ 0.92 , RMSEA ≤ 0.08 , and SRMR ≤ 0.08 indicate good model fit.

4. Results

4.1. CFA Results and Descriptive Statistics

The initial CFA on MBI-ES and AWS revealed that several items had factor loadings below 0.40. These items were removed and the model was re-estimated. The final measurement model demonstrated good fit to the data, $\chi^2 (944) = 1315.95$, $p < 0.001$, CFI = 0.920, TLI = 0.916, RMSEA = 0.046, SRMR = 0.059. All retained factor loadings exceeded 0.45 and ranged from 0.45 to 0.94, as shown in Tables 2 and 3. Internal consistency reliability was

acceptable to excellent for all scales, with Cronbach's α ranging from 0.72 (Values) to 0.92 (Emotional Exhaustion). All subsequent analyses included only the retained items.

Table 3. Descriptive Statistics, Factor Loadings, and Reliability on Six Dimensions of Working Conditions (AWS).

Latent Variables/Individual Items	Mean	SD	Factor Loading
Workload ($\alpha = 0.81$)	3.88 ^a	0.83	
I do not have time to do the work that must be done.	4.02	1.09	0.79
I work intensely for prolonged periods of time.	4.24	0.89	0.80
I have so much work to do on the job that it takes me away from my personal interests.	4.02	1.09	0.81
I have enough time to do what's important in my job. (R)	3.49	1.15	0.66
I leave my work behind when I go home at the end of the workday. (R)	3.60	1.26	0.50
Control ($\alpha = 0.76$)	3.38	0.74	
I have control over how I do my work.	3.42	0.98	0.55
I can influence management to obtain the equipment and space I need for my work.	3.28	1.05	0.61
I have professional autonomy/independence in my work.	3.44	0.92	0.66
I have influence in the decisions affecting my work.	3.36	0.93	0.74
Community ($\alpha = 0.83$)	3.72	0.69	
People trust one another to fulfill their roles.	3.52	0.92	0.64
I am a member of a supportive work group.	4.02	0.77	0.83
Members of my work group cooperate with one another.	3.92	0.75	0.80
Members of my work group communicate openly.	3.61	0.93	0.74
I don't feel close to my colleagues. (R)	3.53	1.05	0.57
Reward ($\alpha = 0.88$)	2.96	0.94	
I receive recognition from others for my work.	3.03	1.15	0.84
My work is appreciated.	3.28	1.06	0.84
My efforts usually go unnoticed. (R)	2.86	1.09	0.81
I do not get recognized for all the things I contribute. (R)	2.65	1.12	0.61
Fairness ($\alpha = 0.84$)	2.95	0.81	
Resources are allocated fairly here.	3.15	1.09	0.59
Opportunities are decided solely on merit.	2.41	0.95	0.45
There are effective appeal procedures available when I question the fairness of a decision.	2.98	1.06	0.72
Management treats all employees fairly.	3.22	1.10	0.85
Favoritism determines how decisions are made at work. (R)	3.14	1.13	0.72
It's not what you know but who you know that determines a career here. (R)	2.81	1.19	0.69
Values ($\alpha = 0.72$)	3.84	0.57	
My values and the Organization's values are alike.	3.73	0.80	0.75
My personal career goals are consistent with the Organization's stated goals.	3.72	0.78	0.66
The Organization is committed to quality.	3.98	0.80	0.62

^a: Means on latent variables are calculated as the average of individual items. (R) means reversed coded to make calculations.

Descriptive statistics in Table 2 reveal important patterns in principals' burnout levels, measured by MBI-ES. Utah principals experience moderate to high levels of emotional exhaustion ($M = 3.70$, $SD = 1.29$), suggesting frequent feelings of being emotionally drained and overextended. Personal accomplishment was high, as evidenced by low scores on the lack of personal accomplishment scale ($M = 1.63$, $SD = 0.98$), suggesting principals in general feel competent and successful in their work. Depersonalization levels were moderate ($M = 3.07$, $SD = 1.56$), indicating some tendency toward cynical attitudes toward their work recipients.

Regarding working conditions measured by AWS, principals reported significant challenges in several key areas, as shown in Table 3. Workload demands were notably high ($M = 3.88$, $SD = 0.83$), reflecting considerable strain from excessive work demands. Fairness received relatively moderate ratings ($M = 2.95$, $SD = 0.81$), suggesting some concerns about equitable treatment and transparent decision-making. In contrast, principals reported high levels of values alignment ($M = 3.84$, $SD = 0.57$) and positive community relationships ($M = 3.72$, $SD = 0.69$), indicating strong alignment between personal and organizational

values alongside supportive workplace social interactions. Control received moderate to high ratings ($M = 3.38$, $SD = 0.74$) while reward received moderate ratings ($M = 2.96$, $SD = 0.94$).

We further examined the zero-order correlations between all six AWS dimensions. As Table 4 shows, all five subscales of job resources showed moderate to strong positive correlations, with the strongest associations observed between control and community ($r = 0.732$), control and values ($r = 0.693$), and values and fairness ($r = 0.719$), and community and reward ($r = 0.716$). These findings suggest that principals who experience greater autonomy tend to work in environments characterized by stronger collegial relationships, greater recognition, and clearer alignment between personal and organizational values. In contrast, each of the five job resources dimensions exhibited only weak to moderate negative correlations with workload, indicating that workload represents a distinct construct from the job resource measures. Because of these results and consistent with the JD-R framework, we created a job resources composite by combining five AWS dimensions (control, reward, community, fairness, and values) while treating workload as a separate job demands measure. To ensure equal weighting, each of the five job resources dimensions was first standardized, then averaged to create the composite score.

Table 4. Zero-order correlations between AWS dimensions.

	1	2	3	4	5
1. Workload					
2. Control	−0.460				
3. Community	−0.237	0.732			
4. Fairness	−0.241	0.667	0.471		
5. Reward	−0.224	0.624	0.716	0.484	
6. Values	−0.147	0.693	0.514	0.719	0.501

All correlation coefficients are statistically significant at $p < 0.01$.

Appendix A Table A1 presents zero-order correlations among key study variables. Consistent with expectations, job resources correlated negatively with burnout dimensions ($r = -0.354$ to -0.548) and positively with job satisfaction ($r = 0.636$), while workload showed the opposite pattern. Burnout dimensions were intercorrelated ($r = 0.454$ to 0.765) and negatively related to job satisfaction ($r = -0.586$ to -0.757). Principals reporting increased COVID-19 stress exhibited higher workload, lower job resources, higher burnout, and lower job satisfaction. These patterns support our hypothesized relationships.

4.2. SEM Results

To examine how working conditions influence principal wellbeing directly, and through both mediating and moderating pathways involving COVID-19 stress, we conducted three SEM analyses corresponding to our research questions: the direct relationships between working conditions and wellbeing (RQ1), the mediating role of COVID-19 stress (RQ2), and the moderating role of COVID-19 stress (RQ3). As demonstrated in Tables 5–7, all three SEM models demonstrated good to excellent fit across multiple indices. CFI and TLI values for all models surpass the 0.95 standard for excellent fit. RMSEA values were acceptable (all < 0.08) and the SRMR values were well below the 0.08 cutoff across all models.

Table 5. SEM Results: Main Effects of Work Conditions on Burnout and Job Satisfaction.

Outcome Variable	Predictor	β (SE)
Emotional Exhaustion	Job Resources	−0.439 (0.061) ***
	Workload	0.543 (0.051) ***
Lack of Personal Accomplishment	Job Resources	−0.635 (0.077) ***
	Workload	0.046 (0.064)
Depersonalization	Job Resources	−0.359 (0.084) ***
	Workload	0.164 (0.070) *
Job Satisfaction	Job Resources	0.657 (0.067) ***
	Workload	−0.220 (0.056) ***
Job Resources	Woman	−0.109 (0.123)
	Principal 6–10 years	−0.032 (0.137)
	Principal 11–15 years	−0.379 (0.182) *
	Principal 16+ years	−0.281 (0.211)
Workload	Woman	0.457 (0.145) **
	Principal 6–10 years	0.169 (0.161)
	Principal 11–15 years	0.279 (0.214)
	Principal 16+ years	−0.028 (0.249)

Model Fit Statistics: $\chi^2(16) = 31.54, p = 0.011$; CFI = 0.979; TLI = 0.950; RMSEA = 0.071. N = 184. All coefficients are standardized. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 6. COVID-19 Stress as Mediator: Direct, Indirect, and Total Effects of Work Conditions on Wellbeing Outcomes.

Outcome Variable	Predictor	Direct Effect	Indirect Effect	Total Effect
		β (SE)	β (SE)	β (SE)
Emotional Exhaustion	Job Resources	−0.406 (0.063) ***	−0.033 (0.018) †	−0.439 (0.062) ***
	Workload	0.519 (0.052) ***	0.024 (0.014) †	0.543 (0.052) ***
	COVID-19 Stress	0.288 (0.139) *	-	0.288 (0.139) *
Lack of Personal Accomplishment	Job Resources	−0.679 (0.080) ***	0.045 (0.024) †	−0.635 (0.079) ***
	Workload	0.079 (0.066)	−0.033 (0.018) †	0.046 (0.066)
	COVID-19 Stress	−0.392 (0.176) *	-	−0.392 (0.176) *
Depersonalization	Job Resources	−0.303 (0.088) **	−0.055 (0.027) *	−0.359 (0.087) ***
	Workload	0.124 (0.073)	0.040 (0.021) †	0.164 (0.072) *
	COVID-19 Stress	0.485 (0.193) *	-	0.485 (0.193) *
Job Satisfaction	Job Resources	0.643 (0.070) ***	0.013 (0.018)	0.657 (0.068) ***
	Workload	−0.211 (0.058) ***	−0.010 (0.013)	−0.220 (0.057) ***
	COVID-19 Stress	−0.115 (0.154)	-	−0.115 (0.154)
COVID-19 Stress	Job Resources	−0.114 (0.032) ***	-	−0.114 (0.032) ***
	Workload	0.083 (0.027) **	-	0.083 (0.027) **

Table 6. Cont.

Outcome Variable	Predictor	Direct Effect	Indirect Effect	Total Effect
		β (SE)	β (SE)	β (SE)
Job Resources	Woman	−0.114 (0.128)	-	−0.114 (0.128)
	Principal 6–10 years	−0.043 (0.144)	-	−0.043 (0.144)
	Principal 11–15 years	−0.390 (0.189) *	-	−0.390 (0.189) *
	Principal 16+	−0.294 (0.219)	-	−0.294 (0.219)
Workload	Woman	0.478 (0.151) **	-	0.478 (0.151) **
	Principal 6–10 years	0.177 (0.169)	-	0.177 (0.169)
	Principal 11–15 years	0.287 (0.223)	-	0.287 (0.223)
	Principal 16+	−0.012 (0.257)	-	−0.012 (0.257)

Model Fit Statistics: $\chi^2(20) = 33.24$, $p = 0.032$; CFI = 0.983; TLI = 0.958; RMSEA = 0.060; SRMR = 0.042. Note: N = 184. All coefficients are standardized. † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 7. Moderating role of COVID-19 Stress: Work Conditions and Wellbeing Outcomes.

Outcome Variable	Predictor	Decreased or No Change in Stress During COVID-19 (n = 33)	Increased Stress During COVID-19 (n = 151)	Group Difference
		β (SE)	β (SE)	
Emotional Exhaustion	Job Resources	−0.730 (0.206) ***	−0.376 (0.067) ***	0.354 †
	Workload	0.428 (0.108) ***	0.529 (0.060) ***	0.101
Lack of Personal Accomplishment	Job Resources	−1.316 (0.272) ***	−0.619 (0.082) ***	0.697 *
	Workload	0.079 (0.143)	0.040 (0.074)	−0.039
Depersonalization	Job Resources	−0.811 (0.253) ***	−0.256 (0.094) **	0.555 *
	Workload	0.029 (0.133)	0.123 (0.085)	0.094
Job Satisfaction	Job Resources	0.860 (0.229) ***	0.624 (0.074) ***	−0.136
	Workload	−0.134 (0.120)	−0.223 (0.067) ***	−0.089
Job Resources	Woman	0.154 (0.210)	−0.115 (0.137)	−0.269
	Principal 6–10 years	−0.065 (0.237)	0.011 (0.154)	0.076
	Principal 11–15 years	0.117 (0.287)	−0.489 (0.205) *	0.606
	Principal 16+ years	0.707 (0.338) *	−0.498 (0.236) *	−1.205 **
Workload	Woman	0.103 (0.372)	0.481 (0.151) ***	0.378
	Principal 6–10 years	0.128 (0.419)	0.131 (0.169)	0.003
	Principal 11–15 years	0.176 (0.508)	0.296 (0.225)	0.120
	Principal 16+ years	−1.635 (0.597) **	0.333 (0.260)	1.968 **

Model Fit Statistics: $\chi^2(32) = 42.48$, $p = 0.102$; CFI = 0.985; TLI = 0.963; RMSEA = 0.060; SRMR = 0.059. N = 184. All coefficients are standardized. † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

4.2.1. Main Effects of Work Conditions on Burnout and Job Satisfaction

The structural model examining the relationships between work conditions and well-being outcomes revealed several key patterns (see Table 5). Job resources were strongly related to lower levels across all burnout dimensions and positively associated with job satisfaction. Specifically, job resources showed significant negative associations with lack of personal accomplishment ($\beta = -0.635$, $p < 0.001$), emotional exhaustion ($\beta = -0.439$, $p < 0.001$), and depersonalization ($\beta = -0.359$, $p < 0.001$). Additionally, job resources

were positively related to job satisfaction ($\beta = 0.657, p < 0.001$). These findings indicate that principals with greater access to control, reward, community, fairness, and values alignment experience substantially lower levels of burnout across all dimensions while reporting higher job satisfaction.

Workload showed a more nuanced pattern of effects. As expected, workload was negatively associated with job satisfaction ($\beta = -0.220, p < 0.001$). It was also a strong predictor of emotional exhaustion ($\beta = 0.543, p < 0.001$), demonstrating that heavy work demands directly contribute to energy depletion and exhaustion, consistent with the JD-R model's emphasis on workload as a primary job demand. Workload also significantly predicted depersonalization ($\beta = 0.164, p < 0.05$). However, workload did not significantly predict lack of personal accomplishment ($\beta = 0.046, p > 0.10$), suggesting that feelings of professional efficacy are more strongly influenced by available resources than by work demands.

4.2.2. COVID-19 Stress as Mediator

Table 6 shows the results of the mediation analysis. As expected, COVID-19 stress was positively related to workload ($\beta = 0.083, p < 0.01$), while negatively related to job resources ($\beta = -0.114, p < 0.001$). These indicate that principals with better organizational support were less vulnerable to experiencing pandemic-related stress, while those facing heavier work demands were more susceptible to COVID-19 stress.

COVID-19 stress functioned as a significant partial mediator linking working conditions to burnout outcomes, though with different patterns across dimensions and predictors. As expected, increased COVID-19 stress was positively related to depersonalization ($\beta = 0.485, p < 0.05$) and emotional exhaustion ($\beta = 0.288, p < 0.05$), suggesting that pandemic stress contributed to principals feeling emotionally drained and developing cynical attitudes and emotional detachment from their work. Interestingly, the mediation effect of COVID-19 stress was negative for lack of personal accomplishment ($\beta = -0.392, p < 0.05$). In other words, COVID-19 stress was positively related to personal accomplishment, indicating that stress during crisis periods actually led to a heightened sense of professional efficacy and accomplishment even while facing other aspects of burnout.

Notably, COVID-19 stress did not significantly predict job satisfaction ($\beta = -0.115, p > 0.10$). The absence of this relationship indicates that job satisfaction appears to be directly influenced by working conditions rather than being affected by pandemic-related stress.

4.2.3. COVID-19 Stress as Moderator

The multi-group structural equation model examining COVID-19 stress as a moderator compared principals who experienced increased COVID-19 stress ($n = 151, 82.1\%$) with those who experienced decreased or no change in stress ($n = 33, 17.9\%$). As shown in Table 7, the analysis revealed striking differences in how working conditions affect principal wellbeing depending on principal perceived COVID-19 stress levels, providing strong evidence for differential job resources effectiveness during crisis periods.

Job resources demonstrated significantly stronger protective effects for principals who reported no change or reduced stress during COVID-19 compared to those who reported increased pandemic-related stress across multiple burnout outcomes. The most dramatic differences were observed for personal accomplishment, where job resources provided over twice the protection among principals who perceived no change or decreased COVID-19 stress ($\beta = -1.316, p < 0.001$) compared to those who perceived increased pandemic-related stress ($\beta = -0.619, p < 0.001$). Similarly, job resources were over three times more effective at preventing depersonalization among principals with no change or decreased COVID-19 stress ($\beta = -0.811, p < 0.001$) compared to those with increased pandemic-related stress

($\beta = -0.256, p < 0.001$). For emotional exhaustion, job resources showed nearly twice the protection among principals who perceived no change or decreased COVID-19 stress ($\beta = -0.730, p < 0.001$) versus those who perceived increased stress ($\beta = -0.376, p < 0.001$), with this difference marginally statistically significant. Job satisfaction showed a different pattern. While job resources enhanced satisfaction in both groups, the difference between groups was not statistically significant.

In terms of workload, the moderating effects of COVID-19 stress showed different patterns than those observed for job resources. Workload consistently predicted emotional exhaustion regardless of principals' perceived stress changes during the pandemic, with similar effect sizes for both stress groups, indicating no significant moderation effect. Workload effects on depersonalization and personal accomplishment also showed no significant differences between groups. However, for job satisfaction, workload showed a more negative impact among principals who perceived increased COVID-19 stress ($\beta = -0.223, p < 0.001$) compared to those with no change or decreased stress ($\beta = -0.134, p > 0.10$), though this difference was not statistically significant.

4.2.4. Control Variable Effects

Several demographic characteristics showed significant relationships with working conditions and wellbeing outcomes across the models. Female principals consistently reported higher workload than their male counterparts ($\beta = 0.457, p < 0.01$ in Table 5 the main effects model; $\beta = 0.478, p < 0.01$ in Table 6 the mediation model), suggesting that women principals perceive disproportionate work demands. However, gender was not significantly associated with perceptions on job resources in any of the models. Principal experience showed notable patterns, particularly for those with 11–15 years of experience, who consistently reported lower job resources compared to those with 0–5 years of experience ($\beta = -0.379, p < 0.05$ in Table 5 the main effects model; $\beta = -0.390, p < 0.05$ in Table 6 the mediation model). This suggests that mid-career principals may face particular challenges in accessing organizational support and resources.

The multi-group analysis also revealed interesting patterns around principal experience, as shown in Table 7. Most notably, principals with 16+ years of experience showed opposite patterns depending on their perceived changes in COVID-19 stress: those who perceived no change or decreased pandemic-related stress reported higher job resources ($\beta = 0.707, p < 0.05$) compared to the reference group of principals with 5 or fewer years of experience, while those who perceived increased COVID-19 stress reported lower job resources ($\beta = -0.498, p < 0.05$). Similarly, the most experienced principals showed dramatically different workload patterns, with those who perceived no change or decreased COVID-19 stress reporting substantially lower workload ($\beta = -1.635, p < 0.01$) while those who perceived increased pandemic-related stress reported similar workload as principals with 5 or fewer years of experience ($\beta = 0.333, p > 0.10$). These findings suggest that the most experienced principals may be particularly vulnerable to the differential effects of external stressors, with perceived increases in COVID-19 stress potentially undermining the typical advantages of experience and seniority.

5. Discussion

This study examined the relationship between working conditions and principal wellbeing, exploring both direct pathways and indirect pathways involving COVID-19 stress. Using structural equation modeling with data from 184 Utah principals during the pandemic, we found evidence for complex relationships between job demands and resources, external stressors, and multiple dimensions of principal wellbeing. Our findings contribute to understanding principal wellbeing as a multifaceted phenomenon that can

be influenced through different mechanisms, with important implications for supporting school leaders during crisis periods.

5.1. Main Findings

Three primary findings emerged from our analysis. First, working conditions demonstrated strong direct relationships with all dimensions of principal wellbeing, providing robust support for the JD-R model in educational leadership contexts. Job resources (control, reward, community, fairness, and values) were consistently associated with lower burnout and higher job satisfaction. Workload, as the primary job demand, showed the expected pattern of being negatively associated with job satisfaction while being positively related to emotional exhaustion and depersonalization. These findings align with previous research identifying the importance of job resources in protecting against burnout and workload as a primary driver of occupational stress and burnout among principals (Friedman, 2002; Rogers et al., 2025; Wang et al., 2018). One notable finding is that workload was not significantly related to personal accomplishment. This pattern, while initially counterintuitive, is actually consistent with previous findings that principal efficacy is more strongly related to organizational support than to work demands (Friedman, 2002). Feelings of professional competence depend primarily on having adequate resources to accomplish tasks rather than on the quantity of work demands (Jimenez & Dunkl, 2017).

Second, COVID-19 stress functioned as a significant mediator in the relationship between working conditions and burnout outcomes, but not job satisfaction, with distinct patterns emerging for job resources versus workload. Principals with greater job resources were less vulnerable to pandemic-related stress, which provided additional protection against all burnout dimensions beyond the strong direct effects of organizational support. In contrast, heavy work demands were associated with energy depletion both directly and through psychological stress. Notably, COVID-19 stress was positively associated with principals' sense of professional efficacy. This pattern aligns with challenge stressor theory, suggesting that successfully navigating unprecedented challenges can enhance principals' professional competence and sense of accomplishment, even while contributing to other aspects of burnout (Yang & Li, 2021).

Third, COVID-19 stress moderated the relationships between job resources and burnout outcomes, but not those for job satisfaction. This suggests that job resources consistently promote satisfaction regardless of perceived changes in external stress levels, whereas their protective effects against burnout are diminished among principals who experience increased stress during crisis periods. In addition, COVID-19 stress does not moderate the relationship between workload and all wellbeing dimensions. These findings suggest that unlike job resources, workload operates through more direct pathways that remain relatively consistent regardless of external stress conditions, reflecting the fundamental energy-depleting nature of excessive work demands (Bakker et al., 2003).

In summary, these findings extend our theoretical understanding of the JD-R model in several important ways. First, the differential patterns across wellbeing dimensions suggest that burnout and job satisfaction represent distinct constructs that respond to environmental factors through different pathways. The lack of mediating and moderating effects of COVID-19 stress on the relationship between working conditions and job satisfaction indicates that heavy workload is uniformly associated with lower job satisfaction and job resources are associated with higher job satisfaction, regardless of whether these relationships occur during crisis periods or normal times, and irrespective of principals' pandemic-related stress levels (Afshari et al., 2022; Wang et al., 2018). In contrast, the effectiveness of job resources in preventing burnout is context-dependent, with external stressors creating conditions where traditional organizational support, including control, community support,

fairness, reward, and values alignment, may be insufficient, suggesting that standard approaches to preventing burnout may need to be intensified during times of high external stress (Mijakoski et al., 2023).

Most notably, external stress creates both opportunities and vulnerabilities for principals' sense of personal accomplishment. On the one hand, COVID-19 stress was associated with enhanced personal accomplishment—suggesting that successfully navigating pandemic challenges boosted principals' sense of professional competence (Tedeschi & Calhoun, 2004; Yang & Li, 2021). On the other hand, job resources were significantly less effective at preventing feelings of inefficacy among high-stress principals. This suggests that while crisis navigation can enhance professional identity, principals experiencing high external stress require substantially more organizational support to achieve the same levels of professional accomplishment as their lower-stress counterparts (Kaufman et al., 2022; Upadaya et al., 2021). In other words, the “challenge stressor” benefits of successfully managing crises do not eliminate the need for enhanced organizational resources during high-stress periods.

This study has several limitations that suggest directions for future research. First, the cross-sectional design restricts causal inference, even though structural equation modeling enabled testing of theoretical pathways. Longitudinal studies are needed to capture the dynamic development of burnout and to assess whether the positive effects of challenge stressors on professional accomplishment persist across principals' careers. Second, the use of a binary measure for COVID-19 stress, while appropriate for multi-group moderation analysis, limits the precision of mediation effect estimates and our ability to capture variation in stress intensity or specific dimensions of pandemic-related stressors (e.g., health concerns, work disruptions, family impacts). Third, reliance on self-reports also raises concerns about common method bias and social desirability, as principals may have underreported burnout or unfavorable working conditions. Future work should integrate multiple informants, objective measures of working conditions, and behavioral indicators of burnout.

In addition, our response rate among principals was relatively low, which may raise concerns about non-response bias. Principals experiencing higher stress and burnout may have been less likely to respond, potentially leading to underestimation of burnout prevalence. While the sample broadly reflected Utah's principal population overall, the overrepresentation of elementary principals and those with 6–10 years of experience may limit generalizability and reduce power for subgroup analyses. Broader samples across school levels, career stages, and contexts would strengthen external validity. Finally, because data were collected during the post-acute phase of the COVID-19 pandemic, the findings may reflect a unique moment of adaptation rather than general patterns of stress and coping. Future studies should examine whether the dual pathways of direct effects and stress mediation observed here also hold across other types of crises and more typical educational conditions.

5.2. Policy and Practice Implications

Despite these limitations, the findings have several important implications for educational policy and practice. First, our results on the relationships among working conditions and multiple dimensions of wellbeing suggest that principal wellbeing can be supported by systematically enhancing job resources while managing workload demands. The strong effects of job resources indicate that investments in principal autonomy, recognition systems, community building, fair treatment, and values alignment can provide substantial protection against burnout through both direct mechanisms and indirect stress-reduction pathways (Leiter & Maslach, 2011; Bakker & Demerouti, 2017).

Second, during periods of high external stress, standard organizational supports may be insufficient to maintain principal wellbeing. The mediation findings reveal that job resources become less effective during crisis periods the moderation findings show that this effectiveness varies significantly between principals experiencing different stress levels. This suggests that school districts should develop enhanced support protocols that recognize the diminished effectiveness of typical resources during high-stress times. Notably, while crisis navigation can enhance principals' sense of professional accomplishment, principals experiencing high external stress require substantially more organizational support to achieve the same levels of efficacy as their lower-stress counterparts (Tedeschi & Calhoun, 2004). This might include additional staffing, more intensive mentoring or coaching, enhanced communication and recognition systems, and temporary reduction in non-essential demands (Leksy et al., 2023).

Third, the mediation findings suggest that helping principals manage external stressors should be an important component of burnout prevention efforts, while recognizing that external stress can have both positive and negative effects, depending on how individuals appraise and cope with stressful demands (Lazarus & Folkman, 1984; Wallis et al., 2023). Districts might consider providing stress management training, mental health resources, and structured peer support networks to help principals develop resilience in facing external pressures while also capitalizing on the potential for professional growth during challenging periods. However, our findings also caution against overreliance on individual-level interventions, as the strong direct effects of working conditions indicate that organizational factors remain important drivers of principal wellbeing. Finally, workload management emerged as a critical area for consistent intervention. Since workload effects remain stable regardless of external stress conditions, districts should maintain steady focus on reducing administrative burdens and providing adequate staffing support to prevent exhaustion across all contexts (Friedman, 2002; Maslach et al., 2018).

6. Conclusions

This study contributes to research recognizing that principal wellbeing involves multiple dimensions that can be simultaneously affected in different ways by the same factors. By demonstrating these complex pathways through which working conditions and external stressors influence different aspects of principal wellbeing, including the finding that pandemic stress enhanced professional accomplishment while simultaneously contributing to exhaustion and cynicism, our findings provide both theoretical insights and practical guidance for supporting school leaders. The evidence for both mediation and moderation effects of COVID-19 stress reveals that external stressors operate through multiple mechanisms, with job resources becoming less effective during crisis periods while workload effects remain consistent across contexts.

Importantly, these significant effects emerged during the 2023–2024 school year, after the acute pandemic phase ended, revealing that major educational disruptions create lasting impacts on principal wellbeing that persist years into recovery. The finding that 82% of principals still reported increased stress and that job resources remained significantly less effective for high-stress principals underscores the long-term nature of crisis-related vulnerabilities in educational leadership. Most critically, while crisis navigation can enhance principals' sense of professional efficacy, principals experiencing high external stress require substantially more organizational support to realize these benefits, suggesting that districts must invest in enhanced and sustained resources rather than simply relying on the growth potential of challenging situations. As educational systems continue to face complex challenges and external pressures, understanding these nuanced relationships will remain essential for developing targeted interventions that effectively support school leaders

during both normal and crisis periods and throughout the extended recovery that follows major disruptions.

Author Contributions: Conceptualization, Y.N. and A.K.R.; methodology, Y.N. and A.K.R.; validation, Y.N. and D.S.C.; formal analysis, Y.N.; investigation, Y.N. and D.S.C.; data curation, Y.N. and D.S.C.; writing—original draft, Y.N. and A.K.R.; writing—review and editing, Y.N., D.S.C., A.K.R. and A.A.E.; supervision, D.S.C.; project administration, D.S.C.; funding acquisition, D.S.C. All authors have read and agreed to the published version of the manuscript.

Funding: Utah State Board of Education, G00000299.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Review Board of Utah Valley University on 13 October 2023 (Protocol #1425 2023-10-13).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The original contributions presented in this study are included in the article. Further inquiries can be directed to the corresponding author.

Acknowledgments: The authors extend their appreciation to Meghan Everette, who in her capacity as ULEAD Director at the Utah State Board of Education, provided feedback on this study and collaboration throughout this shared inquiry and supported the quality, relevance, and dissemination of this research.

Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A

Table A1. Zero-order correlations between key variables.

	1	2	3	4	5	6
1. Workload						
2. Job Resources	−0.335 **					
3. COVID-19 Stress	0.306 **	−0.328 **				
4. Emotional Exhaustion	0.666 **	−0.548 **	0.378 **			
5. Lack of Personal Accomplishment	0.223 **	−0.545 **	0.063	0.537 **		
6. Depersonalization	0.264 **	−0.354 **	0.303 **	0.765 **	0.454 **	
7. Job Satisfaction	−0.414 **	0.636 **	−0.291 **	−0.757 **	−0.688 **	−0.586 **

** $p < 0.01$.

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