behavioral sciences

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Job Autonomy and Subjective Well-Being Among University Faculty

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Abstract

University faculty frequently navigate competing demands across their professional and family roles, making job autonomy an important yet complex resource for well-being. Although prior research has established a positive association between job autonomy and employee well-being, less is known about the work–family processes through which autonomy contributes to faculty well-being and how these processes may vary by gender. Drawing on Conservation of Resources Theory, we employed a mixed-methods study to examine the relationship between job autonomy and university faculty's subjective well-being and further explored the boundary and work–family processes underlying this relationship. Study 1 used survey data from 206 university faculty members in China and tested mediation and moderated mediation models. The results showed that job autonomy was positively associated with subjective well-being, with boundary control and work–family balance serving as independent and sequential mediators. Gender further moderated the relationship between job autonomy and work–family balance, such that the positive association was stronger among female faculty. Study 2 used semi-structured interviews with ten university faculty members to further explain these quantitative findings. The qualitative findings showed that faculty used autonomy to proactively coordinate work and family demands, while autonomy could also increase work permeability and self-regulatory demands. Together, the findings demonstrate that job autonomy is both a resource for well-being and a condition that reshapes how faculty manage work–family boundaries, highlighting the importance of gender and contextual responsibilities in understanding its consequences.

Keywords: job autonomy; subjective well-being; university faculty; work–family balance; boundary control; gender

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Academic Editor: Ayşe Günsel

Received: 15 September 2026
Revised: 2 November 2026
Accepted: 3 November 2026
Published: 12 November 2026

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1. Introduction

The pursuit of well-being has long been recognized as a fundamental human goal and a key component of sustainable development, as reflected in global agendas such as the United Nations' 2030 Agenda. In higher education, faculty well-being has attracted growing attention due to increasing concerns about academic sustainability. University faculty are central to teaching and knowledge production, yet they are increasingly confronted with intensified teaching loads and competitive research expectations, and the pervasive "publish or perish" culture, all of which contribute to heightened psychological strain and burnout risks (Mosleh et al., 2022; Gunersel et al., 2016; Cheng et al., 2023).

Subjective well-being (SWB) refers to individuals' overall evaluations of their lives, including cognitive judgments of life satisfaction and affective experiences of meaning and fulfillment (Diener et al., 1999; Keyes, 2006). In academic contexts, SWB is shaped by both work-related conditions and broader life circumstances, making it a key indicator of faculty sustainability and professional functioning.

Among the various work-related factors influencing faculty well-being, job autonomy has received sustained scholarly attention. Defined as the degree of discretion individuals have over task execution and work scheduling, job autonomy is generally considered a critical job resource that supports motivation and psychological functioning (Hackman & Oldham, 1976; Thompson & Prottas, 2006). However, recent studies have revealed a more complex picture. While some scholars find a straightforward positive linear relationship, others report non-linear effects depending on the context (Clausen et al., 2022; Stiglbauer & Penz, 2025). This inconsistency suggests that the mere presence of autonomy is insufficient. Therefore, to explain this inconsistency and determine how and when autonomy is beneficial, researchers have begun to focus on the underlying mechanisms and boundary conditions.

In terms of mechanisms, prior research has explored these across two main domains. In the work domain, studies suggest that job autonomy enhances well-being by fostering work engagement or proactive job crafting, as autonomy fulfills basic psychological needs and encourages employees to actively optimize their work tasks (e.g., Malinowska et al., 2018; Kwon et al., 2016). In the family domain, research indicates that autonomy helps reduce work–family conflict (WFC) by providing the necessary flexibility to manage time and segment roles (Kelly et al., 2011; Schieman & Young, 2010).

However, while these prior mechanisms—whether focusing on work-related pathways or WFC reduction—provide valuable insights, they largely operate under a resource depletion perspective. This perspective assumes that because time and energy are finite, work and family are inherently competing domains (Hobfoll, 1989; ten Brummelhuis & Bakker, 2012). Consequently, it tends to frame employees as passive defenders who use their autonomy merely to buffer demands and prevent negative interference (Greenhaus & Beutell, 1985). What this view leaves underexplored is how individuals might proactively invest their autonomy to construct positive synergy and mutual gains, rather than merely avoiding conflict. This gap is important because autonomy merely provides external flexibility. It does not automatically equip individuals with the psychological capacity to manage it. In fact, without proactive boundary regulation, greater autonomy can intensify work–family intrusion and increase self-regulatory burdens. Therefore, translating structural autonomy into well-being hinges on individuals' agentic capacity to proactively regulate the boundaries between work and family.

This study thus draws on Conservation of Resources (COR) theory to develop a theoretical model of resource investment. We conceptualize job autonomy as an initial structural job resource. This structural resource enables individuals to develop boundary control, a process-oriented personal resource (Kossek & Lautsch, 2012). Unlike traditional views that merely focus on reducing negative interference, we propose that boundary control empowers employees to actively coordinate and integrate their work and family roles. This proactive management fosters work–family balance, an outcome-oriented resource state (Greenhaus & Allen, 2011). Ultimately, achieving this positive work–family synergy initiates a resource gain spiral that enhances subjective well-being.

Furthermore, we propose that this resource conversion process is contingent on gender. Importantly, gender difference reflects different social roles and caregiving responsibility structures (Eagly & Wood, 2012) rather than biological sex. Because female faculty often face stronger structural expectations to absorb family demands (Craig & Mullan, 2010), they are more motivated to utilize their autonomy for role integration—flexibly blending work

and family domains to cope with unequal caregiving burdens. Consequently, the practical translation of job autonomy into work–family balance is expected to be more pronounced for female faculty than for male faculty.

To test this theoretical model, we adopted a mixed-methods design comprising two complementary studies. Study 1 uses survey data from 206 university faculty members to quantitatively test a serial mediation pathway and a moderated mediation model examining the moderating role of gender. Study 2 employs semi-structured interviews with ten faculty members to qualitatively explore the micro-processes of how autonomy is experienced and negotiated in daily life.

We specifically focus on university faculty because they represent an ideal context for this process. Faculty possess a unique combination of high structural autonomy and highly permeable work–family boundaries. Unlike fixed-schedule jobs where boundaries are managed by external organizational structures (e.g., time clocks), faculty must rely heavily on personal boundary control to proactively coordinate demands. Therefore, this specific occupational context perfectly captures the dynamic transformation from structural autonomy to work–family balance.

This study makes three key theoretical contributions. First, by shifting the analytical lens from a traditional resource depletion perspective (ten Brummelhuis & Bakker, 2012) to a proactive resource investment perspective, this study extends Conservation of Resources (COR) theory and advances the work–family literature. We demonstrate that employees are active agents who invest structural autonomy to construct positive synergy, moving the field beyond merely preventing negative spillover. Second, by identifying boundary control as the core linking mechanism, this study advances research on how structural job characteristics are transformed into well-being outcomes. While prior mechanism studies often focus on defensive or buffering processes (e.g., strain reduction), our findings contribute a transformative mechanism. We demonstrate that external structural autonomy must first be internalized as a process-oriented personal resource—boundary control-before it can yield positive results, thereby opening the black box of how external job conditions are actively converted into internal harmony. Third, by conceptualizing gender (as a marker of caregiving structures) as a critical boundary condition, this study resolves inconsistencies in prior findings regarding the effect of job autonomy. Previous research has reported mixed and inconsistent effects of autonomy on well-being. Our study contributes to this debate by demonstrating that these heterogeneous outcomes are systematically shaped by unequal caregiving responsibilities. Specifically, even when possessing similar structural autonomy, female faculty are more likely to employ it for role integration (to cope with caregiving burdens), whereas male faculty may use it for work optimization. This integration provides a rigorous, theoretically grounded explanation for why the same structural resource yields different outcomes across different social contexts, thereby enriching the work–family literature with a nuanced, gendered perspective

2. Theoretical Framework and Hypotheses Development

2.1. Conservation of Resources Theory (COR)

Conservation of Resources (COR) theory provides a comprehensive framework for understanding human well-being. The core premise of COR theory is that individuals strive to obtain, retain, and protect valued resources (Hobfoll et al., 2018). Importantly, COR theory does not view resources as isolated entities. Instead, it emphasizes the resource investment principle: individuals leverage their existing resources to acquire additional resources, initiating a resource gain spiral (ten Brummelhuis & Bakker, 2012). In this process, initial structural resources enable the development of personal resources, which

can then be invested to achieve positive states, ultimately enhancing overall well-being (Hobfoll, 2001).

Therefore, this resource investment process unfolds sequentially. It begins with job autonomy as an initial structural resource, which enables individuals to develop boundary control as a personal resource (Kossek & Lautsch, 2012). This acquired personal resource is then actively invested to achieve work–family balance, representing a positive resource state (Greenhaus & Allen, 2011). Ultimately, this sequential transformation from structural conditions to personal capacities, and finally to a resource state, serves as the fundamental mechanism through which faculty subjective well-being is enhanced (ten Brummelhuis & Bakker, 2012; Kossek & Lautsch, 2012; Greenhaus & Allen, 2011).

2.2. Subjective Well-Being

Subjective well-being (SWB) refers to individuals' overall evaluations of their lives, encompassing both cognitive judgments of life satisfaction and affective experiences of meaning and fulfillment (Diener et al., 1999; Keyes, 2006). It represents a core construct in positive psychology and has been widely used in organizational and educational research as an indicator of individuals' overall quality of life.

In higher education settings, faculty subjective well-being has attracted increasing scholarly attention. University faculty play a central role in teaching and research, yet their work is characterized by growing demands, including intensified publication pressure, administrative responsibilities, and blurred boundaries between work and non-work domains (Sobral et al., 2025; Mosleh et al., 2022). These conditions make SWB an important outcome variable for understanding faculty sustainability and professional functioning in contemporary academia.

Existing research suggests that faculty SWB is shaped by multiple work-related and non-work-related factors. Organizational conditions such as workload, leadership quality, and perceived fairness have been shown to influence well-being outcomes, while work–family interface experiences also play a critical role in shaping individuals' psychological states (Greenhaus & Powell, 2006; Taris et al., 2001). Despite these insights, SWB outcomes among faculty remain unevenly explained, suggesting that existing research has not fully captured the processes through which work conditions translate into well-being.

This gap highlights the need to further examine the mechanisms underlying faculty SWB, particularly those related to how work resources and boundary experiences jointly shape individuals' psychological states. Rather than being determined solely by external job conditions or stable personal traits, SWB is increasingly understood as the outcome of dynamic interactions between work structures and life-domain management.

2.3. Job Autonomy and Subjective Well-Being

Job autonomy refers to the extent to which individuals perceive discretion over how, when, and in what order their work tasks are performed, including decision-making related to scheduling and work methods (Hackman & Oldham, 1976; Breaugh, 1985). In academic contexts, job autonomy is a defining feature of faculty work, reflecting the high degree of self-direction embedded in research and teaching activities (Morgeson & Humphrey, 2006; Thompson & Prottas, 2006).

Drawing on Conservation of Resources (COR) theory, job autonomy can be understood as a key job resource that helps individuals obtain, retain, and protect valued resources (Hobfoll, 1989; Hobfoll et al., 2018). Specifically, job autonomy is an initial structural job resource embedded in the design and organization of work, which provides individuals with discretion over task execution and scheduling (Hackman & Oldham, 1976). From a COR perspective, this foundational resource is not yet a personal capacity; rather, it enables

individuals to acquire further personal resources, such as boundary control, and to manage demands more effectively (Hobfoll, 1989; Hobfoll et al., 2018). Resources that enhance perceived control are particularly important for well-being because they reduce the likelihood of resource loss and promote a sense of stability in work environments (Hobfoll, 2001). In the context of higher education, job autonomy reduces externally imposed constraints and allows faculty to experience greater control over their work processes.

Such perceived control enables faculty to organize their work in ways that are more consistent with their preferences and strengths, thereby reducing inefficiencies and enhancing work experiences. At the same time, autonomy helps prevent feelings of helplessness and resource depletion by allowing individuals to regulate work demands more effectively (Bakker & Demerouti, 2007; Skaalvik & Skaalvik, 2017). As a result, job autonomy is expected to enhance subjective well-being by strengthening individuals' sense of control and facilitating more effective use of personal resources. Accordingly, the following hypothesis is proposed:

Hypothesis 1 (H1). *Job autonomy positively affects subjective well-being among university faculty.*

2.4. The Mediating Role of Boundary Control

Boundary control refers to individuals' perceived capacity to define, maintain, and transition between work and family boundaries in accordance with personal and situational demands (Kossek et al., 2006; Kossek & Lautsch, 2012). In COR terms, boundary control constitutes a process-oriented personal resource because it reflects an individual's psychological capacity to regulate their environment. It is the means through which individuals enact boundary management. This capacity is activated and sustained by the structural discretion granted by job autonomy (Hobfoll et al., 2018). In academic contexts, where work and non-work domains are highly interwoven, boundary control is particularly relevant for managing competing role expectations and reducing inter-role interference (Hetrick et al., 2024).

Job autonomy provides important structural conditions that facilitate the development of boundary control. When individuals have greater discretion over task execution and scheduling, they are better able to organize work in ways that accommodate both professional and family responsibilities. Such flexibility enhances their ability to establish and adjust boundaries proactively, including regulating availability and managing work-related interruptions outside formal working hours (Basile & Beauregard, 2016; Clark, 2000). From a Conservation of Resources perspective, job autonomy functions as an enabling resource that supports the acquisition and use of personal resources such as boundary control (Hobfoll, 1989).

In turn, higher levels of boundary control allow individuals to reduce role interference and improve the clarity and manageability of work–family transitions. This helps to preserve personal resources and reduces strain associated with competing domain demands (ten Brummelhuis & Bakker, 2012; Lapierre et al., 2018). As a result, individuals are more likely to experience more stable and positive psychological functioning, reflected in higher subjective well-being. We thus propose hypothesis 2:

Hypothesis 2 (H2). *Boundary control mediates the relationship between job autonomy and subjective well-being among university faculty.*

2.5. The Mediating Role of Work–Family Balance

Work–family balance refers to an outcome-oriented evaluative state in which individuals perceive work and family roles as compatible and effectively coordinated, such

that functioning in one domain does not hinder functioning in the other (Frone, 2003; Greenhaus & Allen, 2011). In contrast to a conflict-based perspective, it emphasizes positive coordination and perceived harmony across life domains, rather than merely the absence of interference. It reflects the perceived result of successful role coordination across domains.

In terms of COR theory, work–family balance is not an initial resource equivalent to job autonomy or boundary control. Rather, it is an outcome-oriented resource state produced through resource investment. Once established, it functions as a resource state because it helps individuals conserve and protect valued resources against role-related depletion (Hobfoll et al., 2018).

In the context of academia, achieving work–family balance is particularly challenging due to long working hours, high cognitive demands, and blurred temporal and spatial boundaries between work and non-work life (Wei et al., 2025; Kotini-Shah et al., 2022). Job autonomy provides structural flexibility that enables faculty to better regulate how work is organized and distributed over time, thereby facilitating more effective alignment between professional and family responsibilities (Ashforth et al., 2000; Wheatley, 2017). From a Conservation of Resources perspective, such autonomy serves as a contextual resource that supports individuals in maintaining equilibrium across competing life domains (Hobfoll et al., 2018).

Higher levels of work–family balance contribute to well-being by reducing inter-role strain and preserving individuals' psychological resources. When individuals perceive that their work and family roles are compatible, they are less likely to experience chronic stress and more likely to maintain stable psychological functioning (Grzywacz & Marks, 2000; Haar et al., 2014). Accordingly, work–family balance is expected to serve as a key mechanism through which job autonomy enhances subjective well-being. Therefore, the following hypothesis is proposed:

Hypothesis 3 (H3). *Work–family balance mediates the relationship between job autonomy and subjective well-being among university faculty.*

2.6. The Serial Mediating Role of Boundary Control and Work–Family Balance

The relationship between job autonomy and subjective well-being can be conceptualized as a sequential resource process grounded in Conservation of Resources (COR) theory. In this process, job autonomy serves as an initial structural job resource, boundary control represents a personal control resource generated by job autonomy, and work–family balance represents an outcome-oriented resource state that reflects effective coordination across domains (Frone, 2003; Greenhaus & Allen, 2011). Subjective well-being is the ultimate outcome of this resource gain process.

In this sequential resource process, boundary control precedes work–family balance. This ordering reflects their distinct conceptual roles. Boundary control is a process-oriented personal resource that concerns individuals' capacity to regulate the timing, flexibility, and permeability of work–family boundaries. Work–family balance is an outcome-oriented resource state that concerns individuals' perceived compatibility and coordination between work and family roles. Thus, boundary control is the means or precondition, whereas work–family balance is the perceived result of successful boundary management.

This sequential mechanism is logically grounded and empirically supported. In academic settings, job autonomy gives faculty greater discretion over task execution and time allocation, which serves as a critical antecedent for boundary control (Kossek et al., 2006; Kossek & Lautsch, 2012). Because boundary control captures the personal capacity to regulate the timing, flexibility, and permeability of work–family boundaries, it functions as a precondition for coordinating work and family roles. Without such capacity,

individuals are less able to reduce role interference and coordinate competing demands. Empirical evidence supports this link by showing that higher boundary control is associated with lower work–family conflict (Michel et al., 2011). Enhanced boundary control, in turn, supports work–family balance by enabling more effective coordination between work and family responsibilities. Ultimately, this balanced state functions as a resource that enhances well-being, as research demonstrates that work–family balance mediates the relationship between organizational resources and overall well-being (Haar et al., 2014; ten Brummelhuis & Bakker, 2012).

From a COR perspective, this sequence reflects a resource investment process. Job autonomy enables faculty to acquire boundary control, which is then invested in managing work–family boundaries. Successful boundary management reduces role interference and promotes work–family balance, which in turn functions as a resource state that supports subjective well-being (Hobfoll et al., 2018; ten Brummelhuis & Bakker, 2012).

Taken together, job autonomy is expected to promote subjective well-being through a sequential pathway in which boundary control and work–family balance operate as consecutive mediators. Thus, the following hypothesis is proposed:

Hypothesis 4 (H4). *Boundary control and work–family balance sequentially mediate the relationship between job autonomy and subjective well-being among university faculty.*

2.7. The Moderating Role of Gender

Within Conservation of Resources theory, the effects of job-related resources are shaped by individuals' social roles and contextual demands, which influence how resources are utilized in managing work and family responsibilities (Hobfoll, 2001). Gender represents an important social structure that may shape how individuals translate job autonomy into work–family balance (Pleck, 1977; Schieman & Glavin, 2008). Thus, gender is conceptualized as a marker of different social roles and family responsibility structures, rather than a biological category.

Importantly, we posit that gender moderates the path from job autonomy to work–family balance. Even when faculty have access to similar levels of job autonomy, the ways in which they utilize this resource to achieve work–family balance may differ according to gendered role expectations. Prior research suggests that women are more likely to experience higher levels of family-related demands and structural caregiving expectations (Cinamon & Rich, 2002; Craig & Mullan, 2010). Consequently, female faculty are more likely to utilize their autonomy for role integration—flexibly blending and coordinating work and family domains to accommodate their dual roles. In contrast, male faculty tend to experience relatively lower family-role pressures and may utilize autonomy primarily for work optimization.

Therefore, we expect the positive relationship between job autonomy and work–family balance to be stronger among female faculty than among male faculty. This moderation may be explained by women's greater tendency to utilize their acquired autonomy for role integration. Accordingly, gender is expected to moderate the indirect effect of job autonomy on subjective well-being through work–family balance, such that this mediating pathway is stronger for female faculty than for male faculty.

Hypothesis 5 (H5). *Gender moderates the indirect effect of job autonomy on subjective well-being through work–family balance, such that this mediating pathway is stronger for female faculty than for male faculty.*

Based on the theoretical framework and the preceding hypotheses, Figure 1 presents the proposed research model.

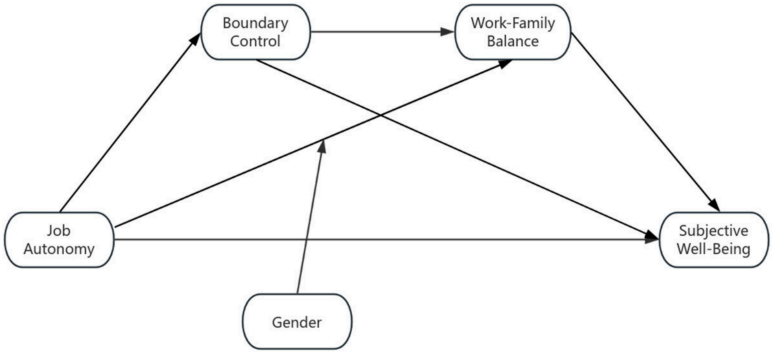


Figure 1. Integrated Theoretical Framework.

3. Study 1: Quantitative Study

3.1. Method

3.1.1. Participants

Data were collected through an online questionnaire administered from September to November 2024. A total of 220 surveys were distributed to university faculty members across China, and 206 valid responses were obtained after removing incomplete cases, yielding an effective response rate of 93.6%.

Of the respondents, 51.9% were female and 48.1% were male. The largest age group was participants aged 31–40 years (51.5%), followed by those aged 41–50 years (36.4%). Respondents aged below 30 (4.8%) and above 50 (7.3%) constituted smaller shares of the sample. In terms of marital status, 72.3% of respondents were married and 27.7% were single, and 62.1% reported having children.

With respect to disciplinary background, participants were distributed across social sciences (44.7%), science and engineering (25.7%), humanities (21.8%), and other disciplines (7.8%), demonstrating substantial disciplinary diversity.

In terms of academic rank, assistant professor made up 44.7% of the sample, associate professors 37.8%, and full professors 14.6%. Assistant lecturers and respondents without formal academic titles represented relatively minor proportions. Overall, the sample was characterised by a structure dominated by young and middle-aged core academic staff. Table 1 summarises the demographic characteristics of the sample.

Table 1. Demographic Characteristics of the Participants.

Variables	Category	Frequency	Percentage
Gender	Female	107	51.9%
	Male	99	48.1%
Age	<30	10	4.8%
	31~40	106	51.5%
	41~50	75	36.4%
	>50	15	7.3%
Marital status	Single	57	27.7%
	Married	149	72.3%
Children	Yes	128	62.1%
	No	78	37.9%

Table 1. *Cont.*

Variables	Category	Frequency	Percentage
Academic discipline	Humanities	45	21.8%
	Social sciences	92	44.7%
	Science and engineering	53	25.7%
	Other	16	7.8%
Academic rank	Professor	30	14.6%
	Associate professor	78	37.8%
	Assistant professor	92	44.7%
	Junior	4	1.9%
	No academic title	2	1%

3.1.2. Measures

Job Autonomy (JA)

Job autonomy was measured using a 3-item scale developed by Liu et al. (2007). The scale assesses employees' perceived discretion and freedom in determining how to carry out their work. Sample items include "I decide on my own how to go about doing my work" and "My job allows me to use my personal initiative or judgment." Participants responded on a 5-point Likert scale (1 = very inaccurate, 5 = very accurate), with higher scores indicating greater perceived autonomy. The scale demonstrated excellent reliability in this study (Cronbach's $\alpha = 0.934$).

Boundary Control (BC)

Boundary control was assessed using a 4-item scale adapted from Kreiner (2006), which captures individuals' perceived ability to manage and regulate the boundaries between work and family domains. Sample items include "I am able to keep work matters outside my family life when needed" and "I can quickly disengage from work and enjoy my family time." Responses were recorded on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree), with higher scores reflecting stronger perceived boundary control. The scale demonstrated good reliability (Cronbach's $\alpha = 0.890$).

Work–Family Balance (WFB)

Work–family balance has been conceptualized as a state characterized by low levels of work–family conflict and high levels of work–family facilitation (Frone, 2003). Consistent with this conceptualization, Lu et al. (2009) examined the work–family interface in terms of both conflict and facilitation. Following this approach, and drawing on the measures used by Wayne et al. (2004), we assessed WFB using two components: work-to-family conflict and work-to-family facilitation, each comprising four items. Conflict items reflect the extent to which work interferes with family responsibilities (e.g., "My job makes me too tired to do the things that need attention at home"), whereas facilitation items assess the extent to which work enhances family functioning (e.g., "The things I do at work help me deal with personal and practical issues at home"). All items were rated on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Conflict items were reverse-coded and combined with facilitation items to form a composite score, with higher values indicating greater work–family balance. The composite measure demonstrated good internal consistency (Cronbach's $\alpha = 0.856$).

Subjective Well-Being (SWB)

Subjective well-being was measured by combining global life satisfaction and job satisfaction, two domain-specific evaluative components of SWB. Global life satisfaction was

assessed with the 5-item Satisfaction with Life Scale (SWLS; Diener et al., 1985; sample item: "In most ways, my life is close to my ideal"). Job satisfaction was measured using a 6-item scale developed by Tsui et al. (1992; sample item: "All in all, I am satisfied with my job"). All items were rated on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree). Consistent with theoretical frameworks that conceptualize SWB as including both general life evaluation and satisfaction within salient life domains, we created a composite SWB index by averaging the unstandardized scores of life satisfaction and job satisfaction. Higher composite scores indicate greater subjective well-being. The composite scale exhibited satisfactory internal consistency (Cronbach's $\alpha = 0.924$).

Control Variables

Control variables included demographic and occupational characteristics that may influence subjective well-being. Gender was coded as a binary variable, with female = 0 and male = 1.

Among demographic variables, age was treated as a continuous variable. Marital status was coded as a binary variable (0 = single, 1 = married). Children was also operationalized as a binary variable (0 = no children, 1 = having children).

Regarding occupational characteristics, academic rank, academic discipline, workload, and job difficulty were included. Academic rank was coded as an ordinal variable reflecting hierarchical career stages. Academic discipline was recoded into a binary variable: science, engineering, and other fields were coded as 0, whereas social sciences and humanities were coded as 1. Both workload and job difficulty were rated on a 1–5 scale, with higher scores indicating greater workload and higher job difficulty, respectively.

3.2. Data Analysis and Results

3.2.1. Data Analysis

Data analysis proceeded in several steps. Descriptive statistics, reliability analyses, and Pearson correlations were first computed using SPSS 27.0. We then examined potential common method bias (CMB) via two preliminary approaches: Harman's single-factor test and a single-factor confirmatory factor analysis (CFA). The exploratory factor analysis extracted four factors with eigenvalues greater than 1. The first unrotated factor explained 38.37% of the total variance, which was below the conventional cutoff of 40%. In addition, the single-factor CFA demonstrated inadequate model fit ($\chi^2/df = 4.794$, RMSEA = 0.193, CFI = 0.646, TLI = 0.615). Taken together, these results suggest that CMB was not a major threat to the present study.

Confirmatory factor analysis was then conducted to evaluate the measurement model. The proposed four-factor structure included job autonomy, boundary control, work–family balance, and subjective well-being. This model demonstrated acceptable fit ($\chi^2/df = 1.615$, RMSEA = 0.055, GFI = 0.848, IFI = 0.944, TLI = 0.938, CFI = 0.944). Comparison with a single-factor model confirmed discriminant validity, as the four-factor model showed substantially better fit.

Hypothesized mediation and moderated mediation effects were tested using Hayes' PROCESS macro for SPSS. Specifically, Model 6 was applied to test the sequential mediation of boundary control and work–family balance. Model 7 was independently applied to test the moderating effect of gender on the path from job autonomy to work–family balance. These two models were conducted as separate analyses rather than a single integrated model. Indirect effects were estimated with 5000 bootstrap samples, and 95% bias-corrected confidence intervals were reported. Finally, robustness checks using robust regression were conducted to assess the stability of key relationships and examine whether the findings were sensitive to heteroscedasticity.

3.2.2. Descriptive Statistics and Correlations

Table 2 presents the descriptive statistics and intercorrelations among the study variables. Job autonomy was positively correlated with boundary control ($r = 0.39$, $p < 0.01$), work–family balance ($r = 0.46$, $p < 0.01$), and subjective well-being ($r = 0.71$, $p < 0.01$). Boundary control was also positively associated with work–family balance ($r = 0.39$, $p < 0.01$) and subjective well-being ($r = 0.41$, $p < 0.01$). Furthermore, work–family balance showed a significant positive relationship with subjective well-being ($r = 0.54$, $p < 0.01$). These results provide preliminary support for the hypothesized relationships, suggesting that higher levels of job autonomy are linked to greater boundary control and work–family balance, which in turn correspond to higher subjective well-being. The pattern of correlations aligns with the proposed mediation framework based on the Conservation of Resources theory, indicating that autonomy functions as an initiating resource that facilitates further resource gains across domains.

Table 2. Descriptive Statistics and Correlations among Variables.

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11
Subjective Well-Being	3.48	0.96	1										
Job Autonomy	3.24	0.92	0.71 **	1									
Boundary Control	3.89	1.31	0.41 **	0.39 **	1								
Work–Family Balance	2.61	0.68	0.54 **	0.46 **	0.39 **	1							
Gender	0.48	0.50	−0.00	0.12	−0.00	−0.12	1						
Age	39.94	6.97	−0.14 *	−0.08	0.05	−0.16 *	0.13	1					
Marital Status	0.72	0.45	−0.01	0.02	−0.02	−0.11	0.05	0.32 **	1				
Children	0.62	0.49	−0.10	−0.03	−0.04	−0.16 *	0.13	0.48 **	0.43 **	1			
Academic Discipline	0.67	0.47	−0.17 *	−0.10	−0.07	−0.22 **	0.20 **	0.25 **	0.06	0.14 *	1		
Academic Rank	2.64	0.79	0.16 *	0.20 **	0.07	0.00	0.23 **	0.52 **	0.12	0.26 **	−0.30 **	1	
Workload	3.87	0.80	−0.29 **	−0.21 **	−0.07	−0.40 **	0.26 **	0.27 **	0.01	0.17 *	0.15 *	0.20 **	1
Job difficulty	3.57	0.77	−0.31 **	−0.25 **	−0.12	−0.42 **	0.12	0.20 **	0.09	0.13	0.14	0.07	0.47 **

Notes. * $p < 0.05$ and ** $p < 0.01$.

Significant associations were also observed among demographic variables. Academic discipline was negatively related to work–family balance ($r = -0.22$, $p < 0.01$), indicating that faculty in humanities and social sciences reported poorer work–family balance compared with their peers in science, engineering and other fields. Age was negatively associated with subjective well-being ($r = -0.14$, $p < 0.05$) and work–family balance ($r = -0.16$, $p < 0.05$), suggesting older faculty experienced lower subjective well-being and worse work–family balance. Consistent with expectations, age was positively correlated with marital status, having children, and academic rank, reflecting the life-course progression of academic faculty.

3.2.3. Testing the Mediation Model

To examine the hypothesized relationships, regression analyses were conducted using the PROCESS macro (Model 6) with 5000 bootstrap samples. As shown in Table 3, job autonomy positively predicted subjective well-being ($b = 0.536$, $SE = 0.060$, 95% CI [0.417, 0.654], $p < 0.001$), supporting Hypothesis 1 and indicating that higher perceived autonomy in work is associated with greater well-being among faculty members. In line with the mediation hypotheses, job autonomy also significantly predicted boundary control ($b = 0.605$, $SE = 0.101$, 95% CI [0.405, 0.804], $p < 0.001$) and work–family balance ($b = 0.202$, $SE = 0.048$, 95% CI [0.108, 0.296], $p < 0.001$). Boundary control positively predicted subjective well-being ($b = 0.092$, $SE = 0.039$, 95% CI [0.016, 0.169], $p = 0.018$), and work–family balance was also positively associated with subjective well-being ($b = 0.253$, $SE = 0.086$,

95% CI [0.084, 0.423], $p = 0.004$). As detailed in Table 4, the indirect effect of job autonomy on subjective well-being through boundary control was 0.056 (95% CI [0.002, 0.125]), accounting for 8.46% of the total effect, whereas the indirect effect via work–family balance was 0.051 (95% CI [0.011, 0.106]), representing 7.70% of the total effect. These results indicate that both boundary control and work–family balance independently mediate the positive association between job autonomy and subjective well-being, supporting Hypotheses 2 and 3.

Table 3. Regression Coefficients for the Serial Mediation Model.

Path	*b*	*SE*	95% CI	*p*
JA → BC	0.605	0.101	[0.405, 0.804]	<0.001
JA → WFB	0.202	0.048	[0.108, 0.296]	<0.001
BC → WFB	0.123	0.031	[0.062, 0.184]	<0.001
JA → SWB	0.536	0.060	[0.417, 0.654]	<0.001
BC → SWB	0.092	0.039	[0.016, 0.169]	0.018
WFB → SWB	0.253	0.086	[0.084, 0.423]	0.004

Notes. *b* = unstandardized regression coefficient; *SE* = standard error; 95% CI = 95% confidence interval. JA = Job Autonomy; BC = Boundary Control; WFB = Work–Family Balance; SWB = Subjective Well-Being.

Table 4. Total, Direct, and Indirect Effects of Job Autonomy on Subjective Well-Being.

Effect Type	Pathway	Effect	*SE*	Boot 95% CI	% of Total
Total Effect	JA → SWB	0.662	0.055	[0.553, 0.770]	100%
Direct Effect	JA → SWB	0.536	0.060	[0.417, 0.654]	80.97%
Total Indirect Effect		0.126	0.034	[0.065, 0.196]	19.03%
Ind1	JA → BC → SWB	0.056	0.031	[0.002, 0.125]	8.46%
Ind2	JA → WFB → SWB	0.051	0.024	[0.011, 0.106]	7.70%
Ind3	JA → BC → WFB → SWB	0.019	0.010	[0.004, 0.042]	2.87%

Notes. JA = Job Autonomy; BC = Boundary Control; WFB = Work–Family Balance; SWB = Subjective Well-Being. Number of bootstrap samples = 5000. Ratio = proportion of the total effect. Boot 95% CI = Bootstrap 95% confidence interval.

The serial mediation pathway from job autonomy to subjective well-being through boundary control and work–family balance was also examined to test Hypothesis 4. Consistent with expectations, boundary control positively predicted work–family balance ($b = 0.123$, $SE = 0.031$, 95% CI [0.062, 0.184], $p < 0.001$), and the serial indirect effect of job autonomy on subjective well-being via boundary control and work–family balance was 0.019 (95% CI [0.004, 0.042]), accounting for 2.87% of the total effect (Table 4). Taken together, the total indirect effect of job autonomy on subjective well-being was 0.126 (95% CI [0.065, 0.196]), representing 19.03% of the total effect, while the direct effect accounted for the remaining 80.97%, indicating that both direct and serial mediation pathways contribute meaningfully to faculty members' subjective well-being.

To provide a visual overview of these relationships, Figure 2 presents the serial mediation model with the estimated path coefficients. The figure illustrates that all hypothesized paths were significant, consistent with the regression results reported in Tables 3 and 4, and clearly depicts how job autonomy influences subjective well-being both directly and indirectly through boundary control and work–family balance. These findings provide empirical support for the proposed model, highlighting the central role of boundary control and work–family balance in the mechanism linking job autonomy to faculty well-being.

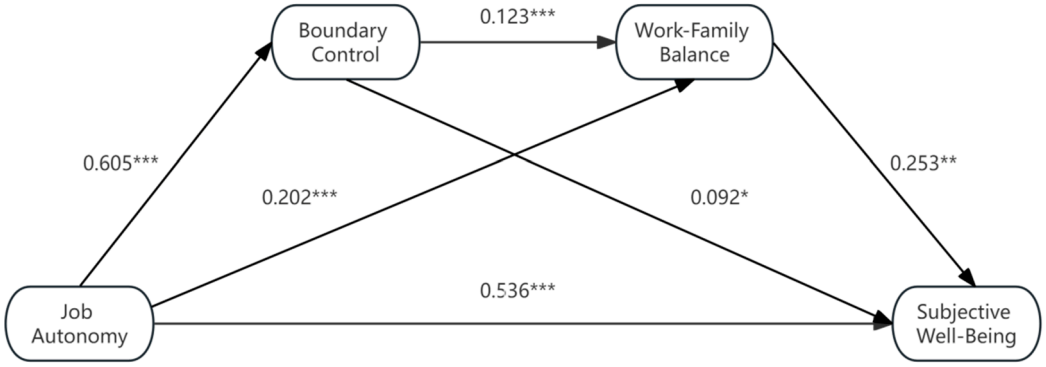


Figure 2. Serial Mediation Model of Job Autonomy on Subjective Well-Being via Boundary Control and Work–Family Balance. Note. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

3.2.4. Testing the Moderating Role of Gender

To test Hypothesis 5, we conducted a moderated mediation analysis using PROCESS Model 7. This model was selected to align with our theoretical framework, which posits that gender moderates exclusively the first stage of the indirect pathway linking job autonomy to subjective well-being via work–family balance. All covariates included in the prior mediation analysis were controlled for, alongside boundary control, to isolate the direct association between job autonomy and work–family balance and exclude the influence of the universal cross-gender mediating mechanism established in prior analyses.

The regression model predicting work–family balance was significant, $F(11, 194) = 13.86$, $p < 0.001$, $R^2 = 0.440$. As shown in Table 5, job autonomy was a significant positive predictor of work–family balance ($b = 0.27$, $p < 0.001$), and gender also had a significant main effect ($b = 0.693$, $p = 0.019$). The interaction between job autonomy and gender was significant ($b = -0.236$, $p = 0.007$, $\Delta R^2 = 0.022$), indicating that gender moderated the first-stage path.

Table 5. Moderated Regression Analysis Predicting Work–Family Balance.

Predictor	*b*	*SE*	*t*	*p*	95% CI
Job Autonomy	0.270	0.053	5.068	<0.001	[0.165, 0.375]
Gender (0 = female, 1 = male)	0.693	0.294	2.362	0.019	[0.115, 1.272]
JA × Gender	−0.236	0.086	−2.729	0.007	[−0.406, −0.065]
Boundary control	0.132	0.031	4.286	<0.001	[0.071, 0.192]
Age	−0.005	0.007	−0.738	0.461	[−0.020, 0.009]
Marital status	−0.115	0.093	−1.239	0.217	[−0.299, 0.068]
Presence of children	−0.033	0.092	−0.365	0.715	[−0.214, 0.147]
Academic discipline	0.031	0.087	0.350	0.726	[−0.142, 0.203]
Academic rank	0.051	0.058	0.865	0.388	[−0.065, 0.166]
Workload	−0.183	0.055	−3.302	0.001	[−0.293, −0.074]
Job difficulty	−0.179	0.055	−3.257	0.001	[−0.287, −0.070]

Note. $N = 206$. Overall model: $F(11, 194) = 13.86$, $p < 0.001$, $R^2 = 0.440$. ΔR^2 for the interaction term = 0.022.

Simple slope analyses revealed that the positive association between job autonomy and work–family balance was significant for female faculty ($b = 0.27$, $p < 0.001$, 95% CI [0.165, 0.375]), but not for male faculty ($b = 0.034$, $p = 0.662$, 95% CI [–0.119, 0.187]). As illustrated in Figure 3, higher job autonomy was linked to greater work–family balance primarily among women.

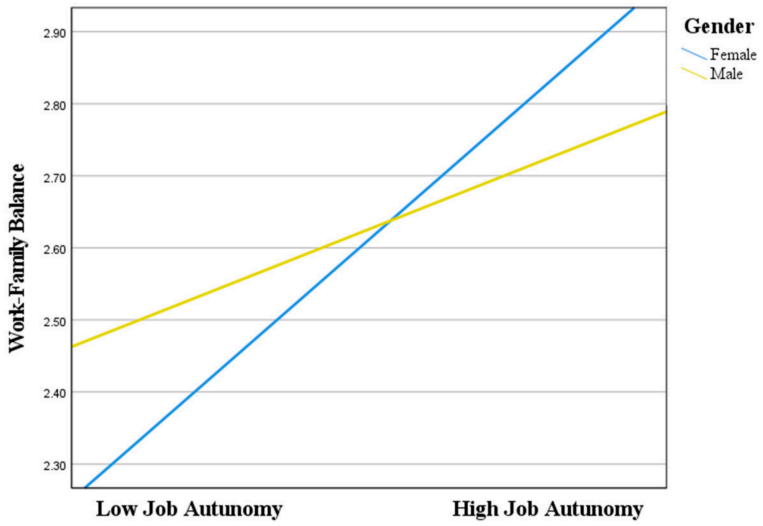


Figure 3. Moderating Effect of Gender on the Relationship Between Job Autonomy and Work–Family Balance.

We then examined the conditional indirect effects. The bootstrap results (5000 samples) are summarized in Table 6. The indirect effect of job autonomy on subjective well-being via work–family balance was significant for female faculty (Effect= 0.069, Boot *SE* = 0.030, 95% CI [0.018, 0.135]) but not for male faculty (Effect = 0.009, Boot *SE* = 0.023, 95% CI [–0.032, 0.062]). The index of moderated mediation was –0.061 (Boot *SE* = 0.034, 95% CI [–0.135, −0.005]). Because this bootstrap confidence interval excludes zero, it supports a significant difference between the conditional indirect effects for female and male faculty.

Table 6. Conditional Indirect Effects of Job Autonomy on SWB via WFB by Gender.

Gender	Effect	Boot *SE*	95% CI
Female	0.069	0.030	[0.018, 0.135]
Male	0.009	0.023	[−0.032, 0.062]
Index of moderated mediation	−0.061	0.034	[−0.135, −0.005]

Overall, the findings suggest that the indirect effect of job autonomy on subjective well-being through work–family balance is stronger for female faculty than for male faculty. Although this indirect effect was statistically significant for female faculty, it did not reach statistical significance for male faculty. These findings support Hypothesis 5 and highlight the role of gender in shaping how job autonomy contributes to subjective well-being through work–family balance.

Lines indicate predicted work–family balance across levels of job autonomy: blue = female faculty, yellow = male faculty. The positive association between job autonomy and work–family balance is stronger for women.

3.2.5. Robustness Checks and Disaggregated Analyses

To ensure the robustness of our main findings, the regression models were re-estimated using ordinary least squares with heteroskedasticity-robust standard errors. The dependent variable remained subjective well-being, and the independent variables were identical to those in the primary moderated mediation analysis. The results show that job autonomy retained a significant positive association with subjective well-being ($\beta = 0.531$, $p < 0.001$), boundary control remained positively significant ($\beta = 0.092$, $p = 0.047$), and work–family balance continued to be positively related to subjective well-being ($\beta = 0.256$,

$p = 0.007$). Overall, these findings indicate that the core relationships are robust and not sensitive to potential heteroskedasticity, further supporting the stability and reliability of the empirical conclusions.

Beyond these robustness checks, we conducted additional disaggregated analyses to examine whether the findings were influenced by the use of composite scores for work–family balance and subjective well-being. Specifically, we re-estimated the serial mediation models by examining the two components of work–family balance (work–family conflict and work–family facilitation) and the two components of subjective well-being (job satisfaction and life satisfaction) separately.

The results revealed some differences across dimensions. When work–family conflict was used as the second mediator, the serial indirect effect was small and not statistically significant (effect = 0.003, 95% Boot CI [−0.003, 0.015]). Similarly, the serial indirect effect was not statistically significant when job satisfaction was used as the outcome (effect = 0.010, 95% Boot CI [−0.002, 0.029]). In contrast, the serial indirect effects remained statistically significant when work–family facilitation was examined as the second mediator (effect = 0.020, 95% Boot CI [0.004, 0.047]) or life satisfaction was used as the outcome (effect = 0.028, 95% Boot CI [0.006, 0.061]). The complete results of these disaggregated analyses are presented in Table 7.

Table 7. Indirect Effects Across Disaggregated Serial Mediation Models.

Model	Indirect Effect	Effect	Boot *SE*	95% Boot CI	Significance
Model 1: Original model (M2 = WFB, Y = SWB)	Ind1: JA → BC → SWB	0.056	0.031	[0.002, 0.125]	Significant
	Ind2: JA → WFB → SWB	0.051	0.024	[0.011, 0.106]	Significant
	Ind3: JA → BC → WFB → SWB	0.019	0.010	[0.004, 0.042]	Significant
Model 2: Work–family conflict (M2 = WFC, Y = SWB)	Ind1: JA → BC → SWB	0.072	0.032	[0.018, 0.142]	Significant
	Ind2: JA → WFC → SWB	0.008	0.013	[−0.008, 0.041]	Not significant
	Ind3: JA → BC → WFC → SWB	0.003	0.004	[−0.003, 0.015]	Not significant
Model 3: Work–family facilitation (M2 = WFF, Y = SWB)	Ind1: JA → BC → SWB	0.054	0.031	[0.003, 0.123]	Significant
	Ind2: JA → WFF → SWB	0.053	0.023	[0.012, 0.101]	Significant
	Ind3: JA → BC → WFF → SWB	0.020	0.011	[0.004, 0.047]	Significant
Model 4: Life satisfaction (M2 = WFB, Y = LS)	Ind1: JA → BC → LS	0.078	0.046	[0.001, 0.178]	Significant
	Ind2: JA → WFB → LS	0.075	0.035	[0.018, 0.155]	Significant
	Ind3: JA → BC → WFB → LS	0.028	0.014	[0.006, 0.061]	Significant
Model 5: Job satisfaction (M2 = WFB, Y = JS)	Ind1: JA → BC → JS	0.033	0.023	[−0.009, 0.085]	Not significant
	Ind2: JA → WFB → JS	0.027	0.020	[−0.005, 0.074]	Not significant
	Ind3: JA → BC → WFB → JS	0.010	0.008	[−0.002, 0.029]	Not significant

Note. All models were estimated using Hayes' PROCESS macro (Model 6) with 5000 bootstrap samples. Statistical significance was determined based on whether the 95% bootstrap confidence interval excluded zero.

Taken together, these findings suggest that the proposed serial mediation mechanism is more consistently supported in relation to work–family facilitation and life satisfaction than to work–family conflict and job satisfaction. This pattern suggests that the contribution of job autonomy to subjective well-being may operate more clearly through the facilitation

of positive interactions between work and family roles and the enhancement of overall life satisfaction.

Study 1 provided quantitative evidence that job autonomy is positively associated with university faculty's subjective well-being and that this relationship operates through boundary control and work–family balance, both independently and sequentially. The moderating effect of gender further suggested that the association between job autonomy and work–family balance may depend on the context in which autonomy is enacted. However, these quantitative findings do not fully reveal how faculty use autonomy in their everyday work and family lives, how they navigate the opportunities and demands associated with greater discretion, or why the practical consequences of autonomy may differ across gendered contexts. To further contextualize and deepen the quantitative findings, Study 2 therefore used semi-structured interviews with university faculty to explore how autonomy is experienced and utilized in managing work and family demands. Particular attention was given to the ways in which faculty actively coordinate these demands, the potential costs associated with greater discretion, and the role of gendered family responsibilities in shaping the use of autonomy.

4. Study 2: Qualitative Study

4.1. Method

Building on the quantitative findings of Study 1, Study 2 adopted a qualitative approach to further explore how university faculty experience and utilize job autonomy in their everyday work and family lives. While Study 1 established the relationships among job autonomy, boundary control, work–family balance, and subjective well-being, the qualitative study sought to provide contextual insight into how these relationships are experienced and negotiated in practice. Semi-structured interviews were conducted with ten university faculty members to complement and extend the findings of Study 1, with particular attention to how faculty use autonomy to coordinate work and family demands, the potential challenges associated with greater discretion, and the role of gendered family responsibilities.

The qualitative investigation served three purposes. First, it captured faculties' experiences of managing academic work and family responsibilities, providing contextual insights that may not be fully captured through standardized measures. Second, it examined how the job autonomy identified in Study 1 unfold in everyday practice, particularly how job autonomy facilitates boundary management and how boundary control contributes to work–family balance. Third, it explored aspects that could not be fully addressed by the quantitative design, including the potentially double-edged nature of job autonomy, the dynamic strategies through which faculty manage work–family boundaries, and gendered patterns in the use of autonomy to accommodate family-related demands. In this way, Study 2 provides a more contextualized explanation of the mechanisms underlying the moderated serial mediation model identified in Study 1.

This study followed the thematic analysis approach of Braun and Clarke (2006), analyzing the interview data through an iterative process of coding, comparison, and thematic synthesis. Through repeated comparison within and across cases, four core themes emerged: (1) job autonomy as a source of subjective well-being; (2) job autonomy as an enabler of work–family balance; (3) hidden self-regulatory costs of job autonomy; and (4) gender differences in the exercise of autonomy. These themes not only provide qualitative support for the central relationships established in Study 1, but also extend the quantitative findings by revealing how these relationships are experienced and enacted in faculty members' everyday lives. Specifically, the qualitative data illustrate the mechanisms through which autonomy translates into well-being, uncover the potential costs of autonomy that were not captured in the survey, and demonstrate how divergent outcomes emerge across genders—

together offering a more nuanced and contextualized understanding of the moderated serial mediation model identified in Study 1.

A total of ten university faculty members were interviewed for Study 2 in August 2026. As shown in Table 8, the sample comprised six female and four male faculty, aged between 32 and 45 years. Most participants were married with children (n = 9), with only one unmarried participant without children. Participants varied in their institutional affiliations (Project 985, Project 211, and Non-985/211 universities), academic ranks (from Lecturer to Professor), and disciplines (Humanities and Science & Engineering). This diverse yet focused sample allowed us to capture a wide range of experiences regarding job autonomy and work–family boundaries.

Table 8. Demographic Profile of Interviewees.

ID	Gender	Age	Marital Status	Children	University Type	Academic Title	Discipline
ID1	Female	38	Married	Yes	Project 985	Associate Professor	Humanities
ID2	Female	38	Married	Yes	Non-985/211	Lecturer	Humanities
ID3	Female	34	Married	Yes	Project 211	Lecturer	Humanities
ID4	Male	43	Married	Yes	Project 985	Professor	Humanities
ID5	Female	32	Unmarried	No	Project 211	Lecturer	Science & Engineering
ID6	Male	37	Married	Yes	Project 985	Associate Professor	Science & Engineering
ID7	Female	37	Married	Yes	Project 211	Associate Professor	Humanities
ID8	Female	45	Married	Yes	Non-985/211	Professor	Humanities
ID9	Male	39	Married	Yes	Non-985/211	Professor	Science & Engineering
ID10	Male	40	Married	Yes	Non-985/211	Professor	Science & Engineering

4.1.1. Participants and Recruitment

Participants were recruited through purposive and snowball sampling. We contacted faculty members via email and professional networks, and also asked initial participants to recommend eligible colleagues. The inclusion criterion was being a current university faculty member. Ultimately, ten faculty members (six women and four men) participated in the interviews.

4.1.2. Data Collection

Semi-structured interviews were conducted in August 2026. Each interview lasted approximately 30–40 min. With participants' consent, all interviews were audio-recorded and transcribed verbatim. The interview guide covered experiences of job autonomy, work–family boundary management, work–family balance, gendered responsibilities, and subjective well-being.

4.1.3. Data Analysis and Coding

Following Braun and Clarke (2006), we conducted thematic analysis through an iterative process of familiarization, initial coding, focused coding, and theme development. Two researchers independently coded the transcripts. Coding disagreements were resolved through discussion until consensus was reached. When consensus could not be achieved, a third researcher was consulted to arbitrate.

4.1.4. Saturation

We continuously compared new interview data with existing themes to assess whether data saturation had been reached. The final two interviews yielded no new themes or conceptual insights. Therefore, ten interviews were considered sufficient for the purposes

of this study. Given the exploratory and contextual aim of Study 2, this sample size was appropriate for an in-depth qualitative understanding rather than statistical generalization.

4.2. Findings

4.2.1. Autonomy as a Source of Well-Being

University faculty generally enjoy a high degree of job autonomy. Respondents consistently agreed that, apart from fixed teaching schedules and mandatory administrative meetings, they have considerable discretion over when, where, and how to accomplish their work tasks. ID1 noted, "Except for teaching, which must be done in the classroom, and administrative meetings that you may need to attend, the rest of the work is not constrained by when or where it needs to be completed." ID10 similarly stated, "Deciding when, where, and how to complete work tasks—this is autonomous, completely autonomous." ID7 estimated the degree of autonomy as "at least 70%," while ID6 described that "most things can be arranged autonomously." ID5 regarded this temporal and spatial flexibility as "an advantage of being a university teacher." Overall, university faculty's job autonomy remains at a relatively high level.

At the same time, job autonomy brings positive well-being experiences and is widely regarded by faculty as an important source of well-being. ID1 commented, "Being able to handle work flexibly and freely, overall it's quite good... Autonomy is still a very important factor affecting well-being." ID2 rated the satisfaction brought by job autonomy highly, and ID7 and ID8 also reported relatively high levels of satisfaction derived from autonomy. This well-being stems not only from control over work rhythms, but also from the possibility autonomy affords to integrate work and personal life—as ID6 put it, being able to "better balance family and life."

Conversely, without such job autonomy, faculty generally believe that their life experience would significantly decline and their well-being would be substantially undermined. ID1 expressed this judgment through a counterfactual comparison: "If I had to clock in and out at fixed times every day—even though I haven't experienced it—it sounds quite draining." ID9 also noted from the perspective of choice that autonomy allows him to "choose family" when work and family conflict—a choice that fixed-hour work schedules cannot provide. This statement reveals that external rigid constraints not only deprive work of flexibility but also generate psychological exhaustion, thereby directly impairing faculty well-being. Therefore, faculty well-being largely depends on the presence and effective exercise of occupational autonomy. These accounts provide qualitative support for Study 1's finding that job autonomy is positively associated with subjective well-being, confirming that autonomy is indeed beneficial and conducive to faculty well-being.

4.2.2. Job Autonomy as an Enabler of Work–Family Balance

Finding 1 reveals that job autonomy is a primary source of well-being among university faculty. At the same time, most respondents also noted that the value of this autonomy extends far beyond work itself—it also helps faculty better coordinate responsibilities between work and family. As ID1 summarized, autonomy "helps us do a better job of balancing work and family, and better arranging family affairs." ID6 similarly emphasized that it is precisely because he can "autonomously decide when to do" work that he can "better balance family and life." Respondents' accounts reveal two layers of mechanisms through which autonomy facilitates work–family balance.

First, autonomy allows faculty to flexibly allocate time and energy between work and family roles. On the one hand, faculty can proactively adjust work arrangements according to changing family needs. ID8 can decide "when to do housework and when to do research," thereby gaining active choice in time allocation; ID3 coordinated with her spouse during the

grant application period—her husband took on more childcare responsibilities, allowing her to "go to campus every day, leaving as early as 6:30 in the morning"; ID10 stays home in the morning to drop off his child at school, buy groceries, and prepare lunch, then goes to the office in the afternoon and works until evening, thus managing both family and work. On the other hand, autonomy also enables faculty to flexibly adjust family involvement according to the urgency of work tasks. ID6 tried to minimize work that needs to be taken home and completing it as quickly as possible, before returning to normal family life; ID7 concentrated teaching from Monday to Wednesday, setting aside one or two full days for research to optimize overall time allocation. This capacity for bidirectional adjustment means that faculty are no longer forced to make trade-offs between work and family, but can dynamically allocate energy according to specific circumstances.

Second, beyond enabling coordination of dual responsibilities, autonomy empowers faculty to dynamically regulate the boundary between work and family, this constitutes the deeper mechanism through which autonomy facilitates work–family balance. ID1 articulated this process clearly: "During busy periods, I can proactively separate the boundaries by going to the office more often and coming home later. When work is less intense, I can blur the boundaries by choosing to work from home and taking on more family responsibilities." In this account, the boundary between work and family is not fixed, but flexibly adjustable. ID8 similarly described this dynamic boundary regulation: "If I particularly want to separate, the simplest way is spatial separation," she would choose to leave home and work at the office to draw clear boundaries; when family needs arise, she can work from home and use her dedicated workspace to switch roles. ID2 also mentioned that she would "extend time at the office as much as possible, trying not to bring work home," but when work is less demanding, he would also "work from home and take on more family responsibilities."

Together, these accounts reveal a core mechanism: autonomy transforms faculty from passive recipients of established boundaries into active boundary constructors. It is precisely this capacity to adjust work–family boundaries according to one's own will that constitutes the deep mechanism through which autonomy promotes work–family balance. These accounts provide qualitative support for the mediating roles of boundary control and work–family balance identified in Study 1. At the same time, they extend the quantitative findings by revealing a more dynamic and agentic process than the survey could capture: faculty do not simply possess boundary control as a static resource but actively construct, adjust, and renegotiate boundaries in response to changing work and family demands.

4.2.3. Hidden Self-Regulatory Costs of Job Autonomy

While the preceding finding illustrates how autonomy can enhance faculty well-being and enable them to proactively coordinate work and family demands, it also suggests that autonomy may entail costs. Autonomy gives faculty greater discretion over when, where, and how they work; however, this discretion transfers greater responsibility for managing work and family boundaries to individuals themselves. As boundary management became increasingly individualized, two interrelated consequences became apparent: greater intrusion of work into non-work domains and a heightened need for self-regulation.

First, autonomy can make it more difficult for faculty to psychologically and behaviorally disengage from work. Academic work lacks a clear endpoint in time or completion and continuously occupies attention, making psychological disengagement difficult even when faculty are physically away from the workplace. ID3 recalled that while preparing an NSFC proposal, "I was thinking about whether the perspective was appropriate even when taking a shower—how could I possibly block it out?" Similarly, ID8 described how this persistent cognitive involvement could extend into everyday activities: "When you're

doing housework, you're thinking about unfinished research, which brings anxiety and stress; when you're doing research, you're thinking about all the things at home, so you can't fully devote yourself either." As ID1 explained, "a person is a whole—you can't have one brain for work and a completely different brain when you get home."

Autonomy may further contribute to this permeability because academic work is no longer necessarily confined to a particular place or period of the day. As ID1 observed, "Autonomy means we can do work anytime, anywhere, which leads to the blurring of boundaries between work and daily leisure, family, and everything else." The flexibility that allows faculty to respond to work demands when convenient can therefore also make work more readily accessible during non-work time. In this sense, autonomy does not simply remove constraints; it can also weaken the external structures that ordinarily separate work from other domains of life.

Second, the freedom provided by autonomy imposes a self-regulatory burden that is psychologically costly and detrimental to productivity. Because faculty have greater discretion over how they organize their work, they must also determine when to work, when to stop, and how to prioritize competing demands. Several participants described this responsibility as psychologically demanding. ID1 noted, "If we want to do well in this profession, we need extreme self-discipline, but controlling oneself is not easy… so this autonomy also brings psychological internal friction." ID2 similarly acknowledged that "everything needs to be planned by oneself, and sometimes I may not have strong self-control," while ID8 observed that "too much freedom leads to procrastination." ID6 further emphasized the efficiency costs of relying primarily on internal motivation: "Without external pressure, relying solely on willpower, there will still be procrastination… relying only on internal drive, efficiency is just not that high."

These accounts suggest that the benefits of autonomy depend partly on faculty's ability to regulate their own time, attention, and boundaries in an environment where external regulations are relatively weak. The same flexibility that enables faculty to arrange work around family responsibilities can therefore also make work more difficult to contain and place greater demands on individual self-management. Rather than negating the enabling effects of autonomy documented above, these accounts expose its double-edged nature: autonomy expands faculty's agency, yet it simultaneously devolves onto individuals the responsibility for governing the boundaries and risks that this expanded agency generates. Thus, these findings extend Study 1's conclusion. Although autonomy grants faculty greater discretion over when, where, and how they work, this discretion also shifts the responsibility for managing work–family boundaries onto individuals themselves. Two interrelated costs emerge: greater intrusion of work into non-work domains and a heightened demand for self-regulation.

4.2.4. Gender Differences in the Exercise of Autonomy

The consequences of autonomy were not uniform across genders. Although male and female faculty generally described similar access to temporal and spatial flexibility, their accounts differed in the purposes to which this flexibility was directed. For female faculty, particularly those with children, autonomy more often served to accommodate family and caregiving demands. For male faculty, autonomy more commonly served to organize work according to personal preferences and preserve discretionary time. Thus, the same degree of autonomy could translate into different practical experiences, depending on the responsibilities faculty were expected to assume.

The most salient of these responsibilities concerned family and caregiving. Female faculty frequently described flexibility as a means of responding to household and caregiving demands. ID3 captured this tension: "Because you' re a free person, family members

think you should arrange things freely; and because you're a woman, you are expected to invest more in children." Similarly, ID8 noted that family members interpreted her flexible schedule as an opportunity to undertake more household responsibilities, while the demands of academic work were less visible to them. ID2 explicitly connected this pattern to gendered expectations: "Women invest more in children and household chores… The traditional male view is that it's normal to pursue careers, so male teachers have fewer family constraints." These accounts suggest that women's flexibility was not merely experienced as additional personal discretion. Instead, it often increased their capacity and expectation to absorb family demands, indicating that autonomy could be redirected toward meeting responsibilities beyond work.

The contrast with male faculty was evident in how they described the purposes of flexibility. Male participants more often framed autonomy in terms of arranging their work rhythms, reducing unnecessary commuting, or maintaining preferred ways of working. ID6, for example, described going to campus only three days a week, presenting flexibility primarily as a way to organize his work. ID10 similarly emphasized the ability to adjust his working rhythm according to his own preferences, without foregrounding childcare or household coordination. ID9 explicitly pointed to a broader gender difference in family involvement: "Compared with women, men take less care of family matters… Women may feel that research can take a back seat—doing it when there's time and skipping it when there's not. They don't have a strong desire for promotion, so when research, family, and children conflict, they prioritize family." These accounts do not suggest that male faculty were free from family responsibilities, but rather that family demands appeared less central to the ways in which they described and utilized autonomy. Their accounts therefore positioned autonomy more strongly as a resource for organizing work and maintaining control over their own time.

Parenthood further shows that the practical meaning of autonomy is shaped by the intersection of gender and caregiving responsibilities. ID5, the only childless female respondent, described autonomy much as male faculty did: primarily as a resource for organizing work. Female faculty with children, by contrast, described flexibility as intertwined with childcare and household demands, and family members often treated their flexible time as an opportunity for more caregiving and domestic work (ID3, ID8). Male faculty with children also described family responsibilities, but these were less central to their accounts of autonomy, which remained mainly tied to work organization. Thus, it is not gender alone but the intersection of gender and caregiving responsibilities that shapes how autonomy is experienced and what purposes it serves.

Taken together, these accounts suggest that autonomy is not a gender-neutral resource in practice. Although male and female faculty may be granted similar levels of formal autonomy. For women, particularly mothers, autonomy may expand the capacity to accommodate family demands while simultaneously reducing the amount of time that remains genuinely discretionary. For men, autonomy is more often experienced as discretion over the organization of work itself. Gender therefore appears to shape not simply the availability of autonomy, but the purposes to which autonomy can realistically be put and the responsibilities that accompany its use. This pattern aligns with the moderating role of gender hypothesized in Study 1: the indirect effect of autonomy on well-being through work–family balance was stronger for female faculty. The qualitative data extend this finding by showing why the pathway is stronger—not because women use autonomy more effectively, but because their autonomy is more readily absorbed by family demands, making work–family balance both more consequential and more precarious for them (Table 9).

Table 9. Data analysis of semi-structured interviews.

Aggregate Dimensions	Second-Order Themes	First-Order Concepts & Evidence
Job Autonomy as a Source of Well-being	High perceived job autonomy	ID1: "Except for teaching, which must be done in the classroom, and administrative meetings that you may need to attend, the rest of the work is not constrained by when or where it needs to be completed."
		ID10: "Deciding when, where, and how to complete work tasks—this is autonomous, completely autonomous."
		ID7: estimated the degree of autonomy as "at least 70%".
		ID6: "most things can be arranged autonomously."
		ID5: "an advantage of being a university teacher."
	Positive well-being experiences from autonomy	ID1: "Being able to handle work flexibly and freely, overall it's quite good… Autonomy is still a very important factor affecting well-being."
		ID6: being able to "better balance family and life".
	Counterfactual loss and exhaustion without autonomy	ID1: "If I had to clock in and out at fixed times every day—even though I haven't experienced it—it sounds quite draining."
		ID9: "choose family" when work and family conflict—a choice that fixed-hour work schedules cannot provide.
Job Autonomy as an Enabler of Work–Family Balance	Flexible allocation of time and energy	ID8: "can decide when to do housework and when to do research."
		ID3: husband took on more childcare responsibilities, allowing her to "go to campus every day, leaving as early as 6:30 in the morning".
		ID10: "stays home in the morning to drop off his child at school, buy groceries, and prepare lunch, then goes to the office in the afternoon and works until evening."
		ID6: "tried to minimize work that needs to be taken home and completing it as quickly as possible, before returning to normal family life."
		ID7: "concentrated teaching from Monday to Wednesday, setting aside one or two full days for research to optimize overall time allocation."
	Dynamic boundary regulation and active boundary construction	ID1: "During busy periods, I can proactively separate the boundaries by going to the office more often and coming home later. When work is less intense, I can blur the boundaries by choosing to work from home and taking on more family responsibilities."
		ID8: "If I particularly want to separate, the simplest way is spatial separation."
		ID2: would "extend time at the office as much as possible, trying not to bring work home," but when work is less demanding, he would also "work from home and take on more family responsibilities."

Table 9. *Cont.*

Aggregate Dimensions	Second-Order Themes	First-Order Concepts & Evidence
Hidden Self-regulatory Costs of Job Autonomy	Increased work permeability	ID8: When you're doing housework, you're thinking about unfinished research, which brings anxiety and stress; when you're doing research, you're thinking about all the things at home, so you can't fully devote yourself either.
		ID1: "a person is a whole—you can't have one brain for work and a completely different brain when you get home."
		ID3: "I was thinking about whether the perspective was appropriate even when taking a shower—how could I possibly block it out?"
		ID1: Autonomy means we can do work anytime, anywhere, which leads to the blurring of boundaries between work and daily leisure, family, and everything else.
	Heightened self-regulatory demands	ID2: "everything needs to be planned by oneself, and sometimes I may not have strong self-control."
		ID1: "If we want to do well in this profession, we need extreme self-discipline, but controlling oneself is not easy… so this autonomy also brings psychological internal friction."
		ID8: "too much freedom leads to procrastination."
		ID6: "Without external pressure, relying solely on willpower, there will still be procrastination… relying only on internal drive, efficiency is just not that high."
Gender Differences in the Exercise of Autonomy	Female faculty: caregiving-oriented use of autonomy	ID3: "Because you're a free person, family members think you should arrange things freely; and because you're a woman, you are expected to invest more in children."
		ID8: "family members interpreted her flexible schedule as an opportunity to undertake more household responsibilities."
		ID2: "Women invest more in children and household chores… The traditional male view is that it's normal to pursue careers, so male teachers have fewer family constraints."
		ID5 (no children): "I have relatively few family matters; I'm not married and don't have kids, so autonomy works quite well for me."
	Male faculty: work-oriented use of autonomy	ID9: "Compared with women, men take less care of family matters… Women may feel that research can take a back seat—doing it when there's time and skipping it when there's not. They don't have a strong desire for promotion, so when research, family, and children conflict, they prioritize family."
		ID6: described going to campus only three days a week, presenting flexibility primarily as a way to organize his work.
		ID10: emphasized the ability to adjust his working rhythm according to his own preferences.
	Parenthood and the gendered meaning of autonomy	ID5 (female, no children): autonomy works well because family matters are few.
		ID3, ID8 (female, with children): flexibility closely intertwined with childcare and household responsibilities.

5. General Discussion

By integrating the quantitative and qualitative findings, this mixed-methods study provides a comprehensive understanding of how job autonomy contributes to faculty well-being. Based on our analyses, we draw three primary conclusions.

First, job autonomy produces well-being both directly and through a sequential resource investment mechanism. The quantitative findings from Study 1 established this core pathway, demonstrating that job autonomy not only directly enhances subjective well-being, but also operates sequentially by initiating boundary control, which in turn fosters work–family balance. Complementing this, the qualitative findings from Study 2 dynamically validated this mechanism, revealing that faculty do not possess boundary control as a static asset. Instead, they actively construct, adjust, and renegotiate their boundaries in daily practice to manage their roles effectively.

Second, the practical utilization of this autonomy and its translation into work–family balance is contingent on gender. While Study 1 revealed that the mediating pathway was more pronounced among female faculty, Study 2 clarified the underlying nature of this divergence. By contrasting the experiences of childless female faculty with those of mothers, the qualitative data demonstrated that this gender difference is not driven by biological sex. Rather, it is the unequal distribution of caregiving responsibilities that fundamentally shapes how autonomy is utilized—prompting women to engage in role integration to balance dual demands.

Third, by integrating both studies, we reveal the "double-edged sword" nature of autonomy that was not fully captured by the quantitative model. While autonomy provides the flexibility necessary to facilitate work–family balance, it simultaneously increases work permeability and imposes hidden self-regulatory burdens. This indicates that autonomy is not unambiguously positive; its benefits are accompanied by the requirement for individuals to invest additional cognitive and regulatory resources to manage the very freedom it creates.

5.1. Theoretical Implications

This study offers several theoretical implications for understanding job autonomy and faculty well-being.

First and foremost, this study fundamentally advances Conservation of Resources (COR) theory by shifting the analytical lens from a traditional resource depletion perspective (Work–Family Conflict) to a proactive resource investment perspective (Work–Family Balance). Traditional WFC research often views employees as passive recipients who merely buffer the negative spillover of work demands on family life. By contrast, our findings demonstrate that employees are active agents who invest structural resources (job autonomy) to generate positive gains. Study 1 quantitatively confirmed that job autonomy does not directly produce well-being, but rather initiates a resource investment process through boundary control and work–family balance. Study 2 provided qualitative depth to this perspective shift, illustrating how faculty actively mobilize their autonomy to construct and rearrange boundaries in daily life, rather than merely defending against interference. This highlights that the true value of autonomy lies not just in the absence of constraints, but in the resource gain spiral it triggers—allowing individuals to proactively allocate and regulate resources across domains. Consequently, our study extends COR theory from explaining "how to prevent resource loss" to explaining "how individuals proactively construct resource synergy."

Second, by identifying boundary control as the core linking mechanism, this study advances research on the specific resource transformation pathway from structural conditions to subjective well-being. Unlike prior literature that often focuses directly on reducing work–family conflict or improving time management, our sequential mediation model

reveals that structural autonomy must first be internalized as a process-oriented personal resource—boundary control. Furthermore, our qualitative findings extend this by showing that boundary control is not a static trait, but a dynamic, agentic process in which employees actively construct, adjust, and renegotiate boundaries in daily life. It is this precise capacity to negotiate boundaries that bridges external work conditions and internal work–family harmony, demonstrating how structural autonomy triggers a resource gain spiral.

Third, by establishing gender as a critical boundary condition, this study contributes to resolving the ongoing debate regarding the inconsistent effects of job autonomy. While previous research has yielded mixed findings, our integration of quantitative moderation and qualitative evidence demonstrates that this inconsistency is fundamentally shaped by unequal caregiving responsibility structures, rather than biological sex. The nuanced qualitative contrasts between childless female faculty and mothers clarify why the same structural resource yields heterogeneous outcomes: for women—particularly mothers—autonomy is often absorbed by family demands, whereas for men, it functions more as work optimization. This integration provides a rigorous, theoretically grounded explanation of gender as a social structure in the work–family literature, moving beyond merely describing gender differences to explaining the underlying responsibility mechanisms.

5.2. Practical Implications

The findings also have implications for higher education institutions seeking to promote faculty well-being.

First, institutions should recognize that providing job autonomy can be an important means of supporting faculty well-being, particularly when faculty face competing work and family demands. Flexible scheduling and greater discretion over when and where work is performed can give faculty greater capacity to coordinate professional and personal responsibilities. However, the findings from Study 2 indicate that autonomy is unlikely to be sufficient on its own. Because greater discretion can also increase work permeability and self-regulatory demands, institutions should provide autonomy together with organizational structures that help faculty establish sustainable work patterns and boundaries.

Second, universities should consider policies and practices that support effective boundary management. Clear expectations regarding work availability, reasonable workload allocation, and respect for non-work time may help faculty benefit from flexibility without allowing work to become continuously accessible. Institutions may also provide resources that reduce the cognitive and practical burden of coordinating work and family responsibilities, such as family-supportive policies and childcare resources. Such measures can complement individual autonomy by ensuring that responsibility for managing work–family boundaries does not fall entirely on individual faculty members.

Third, the gendered findings highlight the importance of ensuring that flexible work arrangements do not unintentionally reinforce unequal family responsibilities. Study 2 suggests that female faculty, particularly mothers, may use autonomy to accommodate caregiving and household demands, which can make flexibility valuable while simultaneously absorbing much of their discretionary time. Universities should therefore avoid treating flexibility as a substitute for broader family-supportive arrangements or assuming that faculty with greater schedule control have unlimited availability. Organizational policies that normalize shared caregiving responsibilities and provide meaningful support for employees with family demands may help ensure that autonomy functions as a genuine resource rather than becoming an additional mechanism through which existing inequalities are reproduced.

Overall, the practical implication is not simply that universities should provide faculty with more autonomy, but that autonomy should be embedded within supportive organiza-

tional conditions. Combining discretion with manageable workloads, boundary-supportive practices, and family-supportive resources may allow faculty to convert autonomy more effectively into work–family balance and, ultimately, greater well-being.

5.3. Limitations and Future Research

Despite its contributions, several limitations should be acknowledged, which also suggest directions for future research.

First, Study 1 employed a cross-sectional survey design, which limits the extent to which causal relationships can be inferred. Although the proposed model was theoretically grounded and the robustness analysis provided additional support for the positive association between job autonomy and subjective well-being, the temporal ordering among job autonomy, boundary control, work–family balance, and subjective well-being cannot be established definitively from cross-sectional data. Future research could adopt longitudinal or experience-sampling designs to examine how changes in job autonomy influence boundary management and work–family experiences over time. Such designs could also capture short-term fluctuations in how faculty use autonomy across different work and family situations.

Second, the sample of Study 1 was drawn from university faculty in China, which may limit the generalizability of the findings to other occupational and cultural contexts. Faculty work is characterized by relatively high levels of professional discretion but also by distinctive demands related to teaching, research, evaluation, and academic performance. Moreover, work–family expectations and gendered responsibility structures may vary across institutional and cultural settings. Future research could therefore examine the proposed model across different types of organizations, occupations, and national contexts. Comparative studies could be particularly valuable for investigating whether the role of autonomy in work–family management depends on institutional arrangements and culturally embedded expectations concerning work and family responsibilities.

Third, although the qualitative study provided contextual insight into how faculty experience and utilize autonomy, the interview sample was relatively small and relied on participants' self-reported experiences. The qualitative findings therefore should be understood as an interpretive account of how autonomy is enacted in everyday work–family contexts rather than as evidence that the identified patterns apply uniformly across faculty populations. Future research could recruit more diverse samples in terms of academic discipline, career stage, family status, and institutional context. Longitudinal qualitative studies could further examine how the meaning and use of autonomy change as faculty encounter different career and family transitions.

Finally, although we conceptualized gender as reflecting social role structures, this study did not directly measure caregiving burden or household division of labor. Future research should directly measure variables such as family responsibilities, caregiving burden, or division of household labor to more accurately examine whether this mechanism operates through gender itself or through actual caregiving roles. Such measurement would make conclusions related to gender more rigorous and theoretically grounded.

Taken together, these limitations point to several directions for future research. Rather than treating job autonomy as a uniformly beneficial job characteristic, future studies could examine autonomy as a resource whose effects depend on how it is enacted, the demands surrounding it, and the resources available for managing it. Integrating longitudinal quantitative designs with qualitative or experience-based approaches may be particularly useful for capturing the dynamic process through which autonomy is converted into boundary control and work–family balance, while also identifying when greater discretion becomes accompanied by additional regulatory demands. Such research would further clarify the

conditions under which job autonomy can function as a sustainable resource for faculty well-being.

6. Conclusions

This study examined how job autonomy contributes to university faculty's subjective well-being and how this relationship unfolds through work–family processes and varies across gendered contexts. Integrating quantitative and qualitative evidence, the findings show that job autonomy is an important resource for faculty well-being, partly because it enables greater boundary control and facilitates work–family balance.

Study 1 demonstrated that boundary control and work–family balance independently and sequentially mediated the relationship between job autonomy and subjective well-being, while gender moderated the association between job autonomy and work–family balance. Study 2 complemented these findings by illustrating how faculty actively use autonomy to coordinate work and family demands in everyday life.

At the same time, autonomy was not experienced as an uncomplicated benefit: greater discretion could increase work permeability and self-regulatory demands, placing additional responsibility on individuals to manage the freedom that autonomy provides. The qualitative findings further showed that the practical use of autonomy was shaped by gendered family responsibilities, particularly among faculty with children.

Taken together, the two studies suggest that the value of job autonomy lies not simply in having greater discretion, but in whether faculty have sufficient resources and supportive conditions to translate that discretion into effective boundary management and sustainable work–family balance. These findings contribute to a more nuanced understanding of job autonomy as both a resource for well-being and a condition that reshapes how work and family demands are managed.

Author Contributions: Conceptualization, Y.L., Z.Z. and X.W.; Methodology, X.W. and Y.X.; Formal Analysis, Y.X.; Investigation, Y.L. and W.D.; Resources, Z.Z. and W.D.; Data Curation, Y.L. and X.W.; Writing—Original Draft Preparation, X.W.; Writing—Review & Editing, X.W., Y.X. and Z.Z.; Visualization, Y.X.; Project Administration, Y.L. All authors have read and agreed to the published version of the manuscript.

Funding: This work was supported by China's Ministry of Education (Grant No. 25YJC880058).

Institutional Review Board Statement: This study was conducted in accordance with the Declaration of Helsinki and applicable local ethical regulations. Ethical review and approval were waived in accordance with Article 32 of the Ethical Review Measures for Life Sciences and Medical Research Involving Humans (2023), which permits exemption from ethical review for research using anonymized human information data when the research does not cause harm to human participants and does not involve sensitive personal information or commercial interests. The present study involved anonymous survey data and semi-structured interviews conducted on a voluntary basis, and no sensitive personal information was collected. Accordingly, the study met the conditions for exemption from ethical review under the applicable regulations.

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

Data Availability Statement: The raw data supporting the conclusions of this study are not publicly available due to privacy restrictions. De-identified data are available from the corresponding author upon reasonable request.

Acknowledgments: The authors would like to thank all participants who voluntarily took part in this survey.

Conflicts of Interest: The authors declare no conflicts of interest. The sponsors had no role in the design, execution, interpretation, or writing of the study.

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