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RESEARCH ARTICLE

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# Is being a leader a mixed blessing? A dual-pathway model linking leadership role occupancy to well-being

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## Summary

Recent leadership research has drawn greater attention to how the well-being of leaders influences leadership behaviors, follower performance and well-being, and overall leadership effectiveness. Yet little attention has been paid to the relationship between occupying leadership positions and job incumbents' well-being. This research addresses this question by developing and testing a dual-pathway model. Our model proposes that incumbency in leadership positions is positively related to high levels of both job demands and job control, whereas job demands and job control have offsetting effects on well-being. Results based on a longitudinal sample revealed that employees who transitioned from nonleadership positions to leadership roles showed trajectories of increasing job demands and job control, whereas such trends were weaker among those who remained in nonleadership positions. Findings from three additional samples generally demonstrated that leadership role occupancy was indirectly related to various indices of psychological and physiological well-being through job demands and job control. Because the signs of the indirect effects through job demands and job control differed in expected ways, the overall relationship between leadership role occupancy and the well-being outcomes was generally small and nonsignificant. We discuss research and practical implications of our framework and findings for organizations, employees, and leaders.

**KEYWORDS**

health, job characteristics, job demands and control, leadership role occupancy, well-being

## 1 | INTRODUCTION

Recent leadership research suggests that the well-being of leaders affects their leadership behaviors (Barnes, Lucianetti, Bhave, & Christian, 2015; Kouchaki & Desai, 2015; Lin, Ma, & Johnson, 2016; Tepper, Duffy, Henle, & Lambert, 2006), followers' performance and well-being (Roche, Haar, & Luthans, 2014; Sy, Côté, & Saavedra, 2005), and overall leadership effectiveness (Bass & Bass, 2008; Hambrick, Finkelstein, & Mooney, 2005). Yet, despite its importance, leaders' well-being has "almost escaped attention" in the leadership literature (Barling & Cloutier, 2017, p. 394). Little attention has been devoted to examining how holding a leadership position (i.e., leadership role occupancy; Arvey, Zhang, Avolio, & Krueger, 2007; Zaccaro, 2007) impacts one's own well-being (Ganster, 2005; Quick, Gavin, Cooper, Quick, & Gilbert, 2000). A deeper understanding of this question may help organizations support leaders in their efforts to cope with stressors. It may also equip employees to anticipate the longer term costs of undertaking supervisory responsibilities and make more informed career choices. As contended by Barling and Cloutier (2017), "we need to know more about the transitions into and out of leadership positions," and how they affect job incumbents' well-being (p. 400).

Scholarly treatments of leaders' well-being have largely emphasized one of two contrasting views. One view draws from the literature on managerial work stress (e.g., Burke, 1988; Cooper & Marshall, 1978; Lee & Ashforth, 1991) and suggests that being a leader is *detrimental* to one's well-being. A critical reason is that work involving supervisory responsibilities is associated with a high level of psychosocial job demands. In addition to carrying out a variety of tasks on their own, leaders must also exert considerable energy and effort in support of their followers and broad organizational aims (Mintzberg, 1971; Yukl, 2012). The relatively large scope of leaders' roles is often reflected in long working hours, heavy workloads, and continual change and uncertainty (Ganster, 2005; Quick et al., 2000). This view is consistent with popular opinion that emphasizes the importance of leaders'

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devoting themselves to the stakeholders (Shamir, House, & Arthur, 1993). However, the assumption that occupying a leadership role tends to deplete psychological resources and adversely impact well-being has received very little empirical scrutiny (Ganster, 2005; Quick et al., 2000).

A separate perspective argues that occupying leadership positions may be *beneficial* to one's well-being. Leaders likely perceive higher levels of control in their jobs because they have more decision making authority and are granted more autonomy than most nonleaders (e.g., Mintzberg, 1971; Yukl, 2012). Consistent with this perspective, Sherman et al. (2012) found that leaders reported lower levels of the stress hormone cortisol than nonleaders. They credited this difference to the leaders' high level of perceived control over others. This perspective, however, has yet to be fully articulated or comprehensively tested.

Yet posing the question of leadership role occupancy and well-being in terms of an either-or distinction is limiting. Leadership roles may have highly stressful demands while simultaneously conferring high levels of control. Such distinct pathways connecting leadership role occupancy to well-being may be mutually countervailing. Thus, determining the impact of leadership roles on one's well-being may ultimately be a question that concerns the relative strengths of the detrimental and salutary paths. We therefore sought to reconcile the two contrasting perspectives by developing and testing a dual-pathway model in which leadership role occupancy is positively related to both job demands and job control, and these constructs are in turn differentially related to a range of indices of physical and psychological well-being (Figure 1). In building our model, we drew upon research concerning the nature of leadership/supervisory work (e.g., Mintzberg, 1971; Yukl, 2012) and stress (Averill, 1973; Ganster & Rosen, 2013). Notably, we examine incumbency in formal and informal leadership roles and do not distinguish between levels of hierarchical leadership or engagement in particular activities (e.g., promoting change). Thus, although the concept of leadership role occupancy would be seen by some scholars (e.g., Zaleznik, 1977) as referring to management that involves authority over workers, we maintain an objective operationalization across studies that fits within the literature on leadership roles.

The present research contributes to the literature in two important ways. First, we provide a stringent examination of the causal relationship between leadership role occupancy and job demands and job control with a longitudinal quasi-experimental design (Sample 1). We tracked changes in job control and job demands among participants who transitioned from nonleadership into leadership roles. We also compared their trajectories with employees in the same cohort who remained in nonleadership roles. Such a design directly tests the effect of leadership role occupancy on job demands and job control.

Second, our research extends the prior work by developing a dual-pathway model of the relationship between leadership role occupancy and well-being. By simultaneously examining both beneficial and detrimental features associated with being a leader, this research provides a framework and a set of findings that may reconcile the two opposing views on the relationship between leadership role occupancy and well-being. Incumbency in a leadership position may promote well-being through effects that are related to job control and decrease well-being through its association with high job demands. The offsetting signs of these two proposed mediators complicate the overall relationship between leadership role occupancy and well-being, and thus, their relative strengths may vary depending on the context and the type of well-being outcome. Our model offers a plausible explanation for the mixed findings from previous studies that undertook less complete analyses (Sherman et al., 2012; Skakon, Kristensen, Christensen, Lund, & Labriola, 2011). It also points to specific means through which organizations may seek to enhance their leaders' well-being.

We tested the hypotheses with four samples from different cultural contexts (i.e., Switzerland, USA, China, and Japan) that used different research designs (i.e., longitudinal, cross-sectional, and lagged designs). Data for two of the studies were based on probabilistic sampling designs (Samples 2 and 4), thereby assuring a broad representation of occupations. We examined a diverse range of indicators of psychological and physiological well-being.

## 2 | THEORETICAL DEVELOPMENT AND HYPOTHESES

Some evidence suggests that serving in a leadership position enhances the risk for an individual to suffer from physical and psychological well-being problems. Such evidence has largely been collected from leaders only and thus did not compare leaders with nonleaders (e.g., Burke, 1988; Roche et al., 2014). There is also some evidence indicating the opposite, proposing that individuals' well-being may potentially benefit from serving as leaders (e.g., Sherman et al., 2012). Yet these two opposing perspectives have not been investigated jointly in an effort to determine if the effects of higher demands of leadership roles may be offset by higher job control. Thus, in proposing our dual-pathway model, we first evaluate theory and evidence in the literatures on

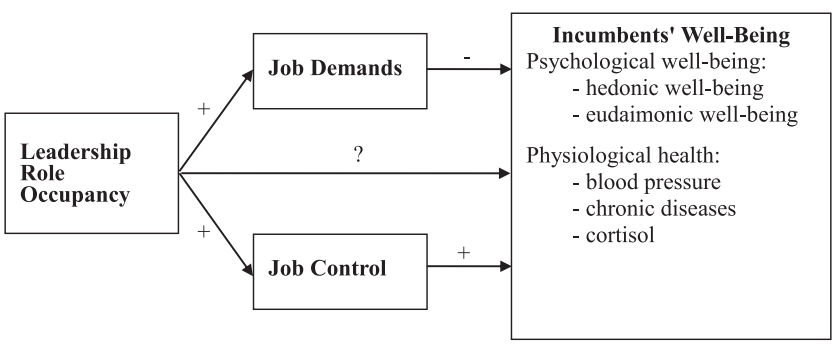



**FIGURE 1** A dual-pathway model of the relationship between leadership role occupancy and job incumbents' well-being

leadership, work stress, and work design concerning those relationships. Job demands and job control feature prominently in assessing experiences that differentiate leadership from nonleadership positions, as well in explaining individual variation in well-being. Following the work stress literature (e.g., Karasek, 1979), *job demands* refer to psychosocial demands at work, "events and work characteristics that affect individuals through a psychological stress process" (Ganster & Rosen, 2013, p. 1088). *Job control* denotes the level of discretion a job incumbent has to make decisions in terms of how, at what pace, and under what conditions he or she performs core job tasks (Smith, Tisak, Hahn, & Schmieder, 1997). As we argue below, heightened perceptions of job control and job demands are plausible avenues through which serving in a leadership role may affect one's well-being.

## 2.1 | Leadership role occupancy and job demands

*Leadership role occupancy* is defined as "formal and informal leadership role attainments of individuals in work settings" (Arvey et al., 2007, p. 696). Operationally, it is denoted by whether an individual has supervisory responsibilities or holds a supervisory position (Arvey et al., 2007; Li, Arvey, Zhang, & Song, 2012; Li, Song, & Arvey, 2011; Sherman et al., 2012). Although not all supervisory positions are the same, occupying a leadership role, or emerging as a leader, represents the "first step" in the leadership process (Ilies, Gerhardt, & Le, 2004, p. 215) and has been a central focus of leadership research (e.g., Bass & Bass, 2008; Day, Sin, & Chen, 2004; Judge, Bono, Ilies, & Gerhardt, 2002).

Hambrick et al. (2005) argued that job demands are the proximal outcome of leadership roles. Scholars have posited that to perform their leadership roles effectively, incumbents must engage in a broad range of stressful challenges that fit the definition of job demands. Leadership demands are both quantitative (e.g., workload) and qualitative (e.g., interpersonal conflict) in nature (Burke, 1988; Lee & Ashforth, 1991). Yukl (2012) proposed that leadership roles in general include a large suite of duties, ranging from completing tasks, forming and maintaining relationships with subordinates, peers, and higher-level leaders, managing change, and interacting with external stakeholders. Mintzberg (1971) characterized supervisory work as being very complex, fragmented, and time urgent. Responsibility for others at work was found to be the strongest predictor of well-being in the landmark study conducted by Caplan, Cobb, French, van Harrison, and Pinneau (1975).

There is also some empirical evidence suggesting that leaders experience higher job demands than nonleaders. Skakon et al. (2011) found that the mean level of psychosocial demands reported by participants with supervisory duties was substantially higher than those reported by employees without supervisory duties. Thus, we propose the following hypothesis:

> **Hypothesis 1.** *Leadership role occupancy is positively related to job demands.*

## 2.2 | Leadership role occupancy and job control

Recent leadership research suggests ascending into leadership roles may enhance one's level of job control (Hill, 2007). Organizations typically seek to provide leaders with considerable autonomy over how they do their jobs because discretion is essential for leaders to respond decisively to the complex and fast-changing contingencies (Mintzberg, 1971; Yukl, 2012). The experience of control derives not only from the objective condition of holding a leadership position but also from the incumbent's subjective experiences (Skinner, 1996). Hill (2007) noted that new leaders quickly developed a greater sense of control after committing to efforts to manage interdependencies they faced in their positions.

Separate research suggests that feelings of having power or control, as may arise from leadership role occupancy, are linked to greater behavioral activation and lower behavioral inhibition (Anderson, John, & Keltner, 2012). Thus, leaders may not only perceive greater control because more control is conferred by their position; they may also exhibit a systematic upward "bias" in how they perceive control relative to nonleaders. Fast, Gruenfeld, Sivanathan, and Galinsky (2009) found that participants who were randomly assigned to leadership positions reported a greater sense of control over chance outcomes, such as the roll of a die, than those assigned to subordinate roles. Furthermore, Karasek et al. (1998) found that, compared with other occupational groups, employees with managerial responsibilities reported the highest levels of control. Thus, based on extant theory and empirical evidence, we propose the following:

> **Hypothesis 2.** *Leadership role occupancy is positively related to job control.*

## 2.3 | Indirect influences of leadership role occupancy on well-being through job demands

We focused a wide range of well-being indicators when examining the influences of leadership role occupancy. Danna and Griffin (1999) noted that compared with the term "health," "well-being" refers to "a more broad and encompassing concept that takes into consideration the whole person" (p. 364). Scholars have inferred well-being from a suite of psychological and physical indices, and these indices do not necessarily correlate at high levels (Sonnentag & Frese, 2012). Our study assessed well-being using a range of indices (Table 1). *Hedonic well-being* refers to well-being in terms of seeking pleasure and avoiding pain, whereas *eudaimonic well-being* pertains to deriving meaning from life experiences and achieving self-actualization (Ryan & Deci, 2001). Postulating that the same factors can be antecedents of such distinct outcome variables is suggested by the growing understanding of how human stress responses are linked to physical and psychological outcomes (McEwen, 2007).

The allostatic load model (McEwen, 2007) is widely regarded as the most complete description of the psychological and physiological processes through which stressors affect well-being (Ganster & Rosen, 2013). This model proposes that psychological and physical well-being derive from a stable state (homeostasis) of a wide range of bodily processes. Exposure to episodic stressors mobilizes adaptive bodily responses to protect the body from immediate tissue damage or death. When these stress responses recur and persist at high levels over time, various bodily parameters (e.g., stress hormones) become less able to return to their normal resting states,

**TABLE 1** Variables used in the four samples

| Variables | Definition | Source of the data |
|---|---|---|
| Independent variable | | |
| Leadership role occupancy | Whether an individual holds a supervisory position | Self-report, bio-history |
| Proposed mediators | | |
| Job demands | Psychological stressors perceived as inherent to performing one's job | Self-report |
| Job control | Perceived freedom to choose how one does work tasks | Self-report |
| Outcomes | | |
| Psychological well-being | General term referring to an individual's subjective experience of satisfaction and good health | |
| Hedonic well-being | Extent to which an individual generally perceives and attains pleasures and avoids suffering | Self-report |
| Eudaimonic well-being | Extent to which an individual generally perceives meaning and realization of his/her personal potential | Self-report |
| Physical well-being | Specific physiological symptomology | |
| Chronic diseases | Frequently recurring symptoms reflecting degraded physiological immune response and other vulnerabilities | Checklist self-report |
| Blood pressure | Pressure on arterial walls as blood is released from (systolic and returned to [diastolic]) the heart | Sphygmomanometer and self-report |
| Cortisol | A steroidal hormone associated with regulation of immune and stress response and metabolism | Blood and saliva samples |

and their relations to one another become chaotic. This chaotic state is labeled *allostatic overload* (McEwen, 2007). A wide range of pathologies result from this disturbed state. Specifically, *primary mediators* are the proximal effects of poor coping with stressors, such as chronically elevated cortisol and anxiety, which pose risks for disease and other forms of illness when they are experienced chronically. *Secondary outcomes* are stable bodily abnormalities that develop over time as a result of allostatic overload (e.g., higher blood pressure). The symptoms of such illnesses are denoted as *tertiary outcomes*.

Psychosocial job demands are consistently found to have a negative relationship with employee well-being (for meta-analytic reviews, see Crawford, LePine, & Rich, 2010; Häusser, Mojzisch, Niesel, & Schulz-Hardt, 2010; Nixon, Mazzola, Bauer, Krueger, & Spector, 2011). This relationship has also been highlighted in the job demands-control model (Karasek, 1979), the job demands-control-support model (Johnson & Hall, 1988), and the job demands-resource model (e.g., Bakker, Demerouti, & Sanz-Vergel, 2014; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Based on our rationale for Hypothesis 1, we expect that incumbency in leadership roles generally leads individuals to experience more job demands, which in turn have a negative effect on well-being outcomes.

> **Hypothesis 3.** *Leadership role occupancy is indirectly and negatively related to well-being outcomes through job demands.*

## 2.4 | Indirect influences of leadership role occupancy on well-being through job control

Psychological research and theory that spans more than half a century have highlighted the beneficial influence of perceived control for well-being (see the review by Skinner, 1996). The "experience of control" perspective derives from evidence that humans experience substantial distress when they lack a sense of control over their environment, and they thrive when they perceive control (Averill, 1973). In work settings, job control is important because it provides the individual with a sense of self-determination, which in turn precipitates high qualities of engagement with work (Ryan & Deci, 2000). When people perceive high job control, they tend to see themselves as functioning competently (Parker, 1998) and feel free to learn and develop skills (Frese & Zapf, 1994). Research has demonstrated that perceived job control is positively related to well-being over substantial periods (Bosma et al., 1997; Häusser et al., 2010).

One prevailing perspective views job control and job demands as having distinct main effects on well-being (Sonnentag & Frese, 2012). Alternative conceptualizations view job demands and job control as interacting to influence well-being (e.g., Karasek's job demands—control model). As observed from meta-analyses, however, the interaction hypothesis is infrequently supported, whereas there is considerable support for negative main effects of job demands and positive main effects of job control across psychological (Häusser et al., 2010) and physical (Nixon et al., 2011) well-being indices. Ganster and Rosen (2013) suggested that "there is strong evidence that high demands and low control each are associated with secondary and tertiary [allostatic load] outcomes, but it is less clear whether control actually shows a buffering effect for high demands" (pp. 1111–1112). Thus, high job control may promote well-being even when a worker does not perceive high job demands.

We combined our argument that leadership role occupancy promotes job control (Hypothesis 2) with the experience of control perspective and predict the following:

> **Hypothesis 4.** *Leadership role occupancy is indirectly and positively related to well-being outcomes through job control.*

### 2.5 | Toward a dual-pathway model linking leadership role occupancy and well-being

Exploring the overall relationship between leadership role occupancy and one's well-being requires integrating the proposed mediating roles of job demands and job control in a dual-pathway model (Figure 1). Potential indirect effects on well-being outcomes through job demands may be negative in sign, whereas the indirect effects through job control are expected to be positive. Therefore, the two pathways may potentially countervail one another. MacKinnon, Fairchild, and Fritz (2007) referred to such cases as "inconsistent mediation models," "where at least one mediated effect has a different sign than other mediated or direct effects in a model" (p. 602). They noted further that "although knowledge of the significance of the relation of X to Y is important for the interpretation of results, there are several examples in which an overall X to Y relation may be nonsignificant, yet mediation exists" (p. 602).

Although the two distinct mechanisms in the dual-pathway model have not been examined previously, scholars have suggested that leaders tend to experience simultaneously high levels of job demands and job control. For example, although Mintzberg (1971) contended that the typical leader "performs a great quantity of work at an unrelenting pace" (p. B-99), he also noted that the typical leaders "appears to be able to control his [or her] own affairs" (p. B-101). However, because neither previous research nor theory have predicted the relative strengths of the indirect effects through job demands and job control, the overall influence of leadership role occupancy on well-being is uncertain. Therefore, we do not advance a directional hypothesis.

It is noteworthy that previous studies have led to mixed results concerning the overall effect of leadership role occupancy on well-being outcomes. Skakon et al. (2011) reported that managers and nonmanagers did not differ on somatic complaints or two other indexes of subjective well-being ("behavioral stress" and "cognitive stress"). However, mean "emotional stress" among managers was significantly lower than the mean for nonmanagers (p. 106). In one of the two studies (Study 1) reported by Sherman et al. (2012), a significant negative relationship was found between leadership role occupancy and a midday index of cortisol. However, neither study examined whether job characteristics mediated relationships between leadership role occupancy and well-being.

## 3 | OVERVIEW OF THE PRESENT RESEARCH

We report findings from four independent samples. Using the first sample, we compared the trajectories of job demands and job control for individuals transitioning into leadership positions with those of nonleaders. In Sample 2, we examined the mediating roles of job demands and job control using a cross-sectional and a 10-year time-lagged design. Sample 3 sought to replicate part of the findings of Sample 2 using a shorter term time-lagged design. Sample 4 constructively replicated the findings of the latter two samples.

Table 1 describes the variables assessed in the study. We examine physical (chronic diseases, blood pressure, and cortisol) and psychological (hedonic and eudaimonic) well-being outcomes that broadly conform to the distinctions between primary mediators and secondary and tertiary outcomes proposed by the allostatic load model (McEwen, 2007).

## 4 | SWISS SAMPLE (SAMPLE 1)

Data were collected from a longitudinal cohort of participants who were entering the workforce. We examined how transitioning from a nonleadership position to a leadership position may affect changes in employees' perceptions of job demands and job control. Because the analyses controlled for employees' baseline data before undertaking leadership roles and those who undertook such roles were compared with individuals who did not, we were able to provide a more stringent examination of whether moving into leadership roles is related to changes in perceived job demands and job control.

## 5 | METHOD

### 5.1 | Participants and procedures

We obtained data from a Swiss cohort study (Transition to Education and Employment; Stalder, Meyer, & Hupka, 2011) that has mainly been funded by the Swiss National Science Foundation. The aim of the project was to follow the educational and occupational pathways of young employees in Switzerland. Data collection started at the end of participants' compulsory schooling in 2000. For this sample, we used data from 2003, when information on leadership position was assessed for the first time, to 2007. The annual response rate for the panel study ranged between 85% and 89%.

Participants were selected for analyses if they were employed and completed job demands and job control scales at least twice. This resulted in a sample size of 1,006. Between 2003 and 2007, 299 employees moved from a nonsupervisory position into a leadership position. We restructured their data to reflect their working conditions 1 year before, in the year of the transition, 1 year after, and 2 years after they made the transition to a leadership position. Data for 707 participants without supervisory positions were available for analyses. Participants overall had a mean age of 22.6 years ($SD$ = .65) at the last wave of measurement, 63% were female, a majority (84–86%) worked full-time (i.e., more than 38 hr per week), and they had various occupations (e.g., carpenter, mechanic, and medical assistant).

### 5.2 | Measures

#### 5.2.1 | Leadership role occupancy

Consistent with prior research on leadership (Arvey et al., 2007; Judge et al., 2002; Sherman et al., 2012), participants were asked whether they held a supervisory role or not. Responses were coded as 1 (*yes*) or 0 (*no*).

#### 5.2.2 | Job demands

Job demands were assessed with two items from the Short Questionnaire for Job Analysis (Prümper, Hartmannsgruber, & Frese,

1995). Participants indicated on a 5-point scale (1 = *all the time*, 5 = *never*) how frequently they experienced time pressure at work (i.e., "Time pressure at work is high" and "I have a lot to do"). Alpha reliabilities ranged from .62 to .66.

#### 5.2.3 | Job control

Job control was measured with three items from the Short Questionnaire for Job Analysis (Prümper et al., 1995) with a 5-point scale (1 = *Strongly Disagree*, 5 = *Strongly Agree*). The items were "I take part in decision-making about which tasks I have to do," "I can decide on my own on which way I carry out my work," and "I can decide on my own on the amount of time I will be working on a certain task." Alpha reliabilities ranged from .74 to .78.

## 6 | RESULTS

### 6.1 | Dimensionality of study variables and measurement invariance

First, we performed confirmatory factor analyses (CFAs) to test for measurement invariance. For job demands and job control separately, comparisons of a freely estimated congeneric models with models in which factor loadings were held equal over time revealed CFI differences lower than .002 and insignificant chi-square difference tests. This supports metric invariance (Meade, Johnson, & Braddy, 2008). We next examined whether job demands and job control were two distinct factors. The two-factor model showed superior model fit to the one-factor solution (see Table 2). Missing values were managed by multiple imputation using a Bayesian approach (Newman, 2009). We also conducted analyses with full information maximum likelihood and obtained similar results.

### 6.2 | Tests of hypotheses

The descriptive statistics and correlations among the study variables are presented in Table 3.

We estimated a series of multigroup latent growth models to test Hypotheses 1 and 2. We first assessed whether development over time in job demands and job control was linear or nonlinear. In both groups, the quadratic term was not significant for job control or job demands. Model fit for the quadratic solution was not superior to the linear solution (model fit for linear development: $\chi^2$ = 66.4, *df* = 44, CFI = .96, RMSEA = .03, SRMR = .06; model fit for quadratic development: $\chi^2$ = 43.1, *df* = 18, CFI = .95, RMSEA = .05, SRMR = .05; $\Delta\chi^2$ = 23.3, $\Delta df$ = 26, $p$ > .05). Therefore, we concluded that development over time was linear for both groups.

Next, we tested whether there was a significant difference between the intercepts and slopes estimates between these two groups. We compared the model in which intercepts and slopes were estimated for each group to a model in which intercepts and slopes were constrained to be equal across the two groups. The constrained model fit was significantly worse than that for the unconstrained model ($\chi^2$ = 94.6, *df* = 48, CFI = .91, RMSEA = .04, SRMR = .13; $\Delta\chi^2$ = 28.2, $\Delta df$ = 4, $p$ < .001). This indicates that leaders and nonleaders had different starting points and differing trajectories over time.

**TABLE 2** Results of confirmatory factor analyses for the four samples

| | Model fit indices | | | | | |
|---|---|---|---|---|---|---|
| | $\chi^2$ (*df*) | $\Delta\chi^2$ ($\Delta df$) | CFI | TLI | RMSEA | SRMR |
| Sample 1 | | | | | | |
| Model 1: 2-factor model (metric invariance)[a] | 249.0 (127) | — | .95 | .93 | .03 | .07 |
| Model 2: 2-factor model (free) | 235.3 (123) | 13.7 (4) | .95 | .93 | .03 | .07 |
| Model 3: 1-factor model | 393.6 (134) | 158.3 (11) | .90 | .85 | .04 | .09 |
| Sample 2 | | | | | | |
| Model 4: 4-factor model[a] | 1,073.97 (164) | — | .94 | .94 | .06 | .06 |
| Model 5: 3-factor model (items of job demands and job control combined) | 3,284.79 (167) | 2,210.82 (3) | .86 | .84 | .12 | .10 |
| Model 6: 3-factor model (items of job control and hedonic well-being combined) | 4,545.95 (167) | 3,471.98 (3) | .78 | .74 | .09 | .10 |
| Model 7: 3-factor model (items of the two well-being variables combined) | 1,477.59 (167) | 403.62 (3) | .92 | .91 | .07 | .06 |
| Model 8: 1-factor model | 8,287.48 (170) | 7,213.51 (6) | .68 | .65 | .18 | .15 |
| Sample 3 | | | | | | |
| Model 9: 2-factor model[a] | 90.94 (26) | — | .95 | .93 | .07 | .04 |
| Model 10: 1-factor model | 547.98 (27) | 457.04 (1) | .63 | .49 | .20 | .15 |
| Sample 4 | | | | | | |
| Model 11: 4-factor model[a] | 1,166.73 (203) | — | .93 | .92 | .08 | .07 |
| Model 12: 3-factor model (items of job demands and job control combined) | 1,832.72 (206) | 665.99 (3) | .88 | .87 | .12 | .10 |
| Model 13: 3-factor model (items of the two well-being variables combined) | 1,580.42 (206) | 413.69 (3) | .89 | .88 | .11 | .09 |
| Model 14: 1-factor model | 4,758.85 (209) | 3,592.12 (6) | .66 | .63 | .23 | .19 |

*Note*. Sample sizes were 1,006, 369, and 703 for Samples 1, 2 and 3, respectively.

RMSEA = root mean square error of approximation, TLI = Tucker–Lewis Index (also known as Non-Normed Fit Index), CFI = comparative fit index; SRMR = standardized root mean square residual.

[a]indicates the best-fitting model.

**TABLE 3** Means, *SD*s, and correlations for variables in Sample 1

| Variables | Mean | *SD* | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Leadership role occupancy[a] | 0.30 | 0.44 | — | | | | | | | | |
| 2. Job demands 2003 | 3.06 | 1.43 | .05 | — | | | | | | | |
| 3. Job demands 2004 | 3.19 | 1.05 | .07* | .46*** | — | | | | | | |
| 4. Job demands 2005 | 3.21 | 0.95 | .11** | .46*** | .50*** | — | | | | | |
| 5. Job demands 2006 | 3.31 | 1.11 | .13** | .32*** | .40*** | .49*** | — | | | | |
| 6. Job control 2003 | 3.63 | 1.36 | .12** | −.11* | .01 | −.09 | .10 | — | | | |
| 7. Job control 2004 | 3.71 | 0.98 | .21*** | −.01 | .01 | .04 | .07 | .57*** | — | | |
| 8. Job control 2005 | 3.69 | 0.95 | .21*** | .15** | .09* | .04 | .04 | .40*** | .52*** | — | |
| 9. Job control 2006 | 3.76 | 1.11 | .24*** | −.01 | .10* | .03 | .02 | .45*** | .48*** | .52*** | — |

*Note*. $N$ = 1,006. *SD* = standard deviation.

*$p$ < .05. **$p$ < .01. ***$p$ < .001.

[a]1 = leaders, 0 = nonleaders.

Table 4 and Figure 2 illustrate the differences. Leaders reported a higher initial level of job control and job demands. They also reported steeper trajectories over time in job control and job demands than nonleaders. These results support Hypotheses 1 and 2.

One limitation of this study is that no well-being outcomes were included. However, it provided a critical first step to test our due pathway model.

## 7 | US SAMPLE (SAMPLE 2)

This study tested the indirect relationships between leadership role occupancy and psychological (hedonic and eudaimonic well-being) and physical (self-reported blood pressure and chronic diseases) well-being through job demands and job control using a cross-sectional design. We also tested the model using a time-lagged measure of salivary cortisol.

## 8 | METHOD

### 8.1 | Participants and procedures

Data were taken from a national representative sample of US employees of the National Survey of Midlife in the United States (MIDUS), a longitudinal project about adult well-being sponsored by the MacArthur Foundation and National Institute of Aging.

The leadership data were from the first wave of the MIDUS study collected from the main sample from January 1995 to January 1996. All data were based on a national representative sample of English-speaking participants aged 25 to 74, randomly selected from U.S. telephone directories. Questionnaires that sought information concerning job demands, job control, eudaimonic well-being, and chronic diseases were sent by mail. Data on leadership role occupancy, blood pressure, and hedonic well-being were collected through phone interviews, at approximately the same time the mail data were collected. Our analyses included only working participants during the period of the MIDUS I cross-sectional study. This reduced the sample size to 1,409 (715 leaders, 775 male, $M_{age}$ = 42.49) for the cross-sectional data. The participants' self-reported ethnicities were distributed as follows: White (85.2%), Black (7.1%), Asian (1.5%), multiracial (0.7%), Native American (0.6%), and other (e.g., Hispanic, 4.9%). Educational levels ranged from a bachelor's to a PhD degree (35.2%), some college but no bachelor's degree (32.5%), and high school diploma or lower (32.3%). Respondents represented 285 occupations and 182 industries.

Data on saliva cortisol were collected through the biomarker project, MIDUS II study, from July 2004 to May 2009. In analyses that include cortisol ($N$ = 427; 208 leaders, 213 male, $M_{age}$ = 45.21), most participants were White (91.8%), and the remaining were Black (3.5%), Asian (0.7%), multiracial (0.2%), Native American (0.7%), and other (3.1%). Education levels ranged from high school graduate or lower (28.4%) to bachelor's degree to PhD (41.9%).

### 8.2 | Measures

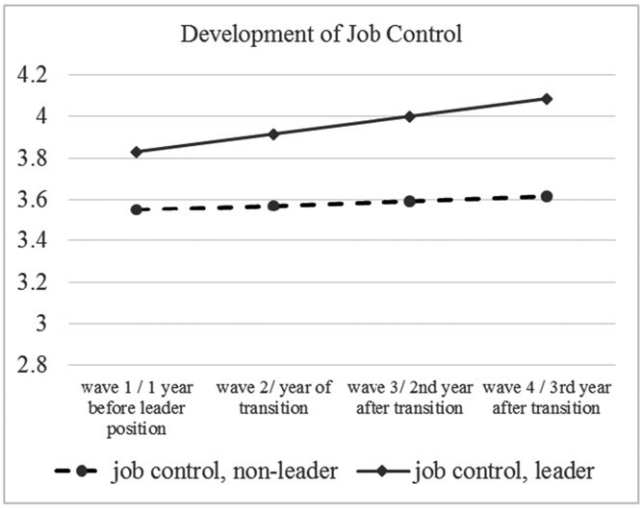
#### 8.2.1 | Leadership role occupancy

The measure of leadership occupancy was a question from the phone interviews: "Do you supervise anyone on this [current] job?" Responses were coded 1 (*yes*) to represent leaders and 0 (*no*) for nonleaders. We also used an alternative coding method, the number of subordinates one supervised, and obtained similar results.

**TABLE 4** Means and standard errors for intercepts and slopes of job demands and job control among nonleaders and leaders (Sample 1)

| | Intercept for job control | Slope for job control | Intercept for job demands | Slope for job demands |
|---|---|---|---|---|
| Nonleaders ($n$ = 707) | 3.55*** (.05) | .02 (.02) | 3.05*** (.05) | .06** (.02) |
| Leaders ($n$ = 299) | 3.83*** (.06) | .09** (.03) | 3.14*** (.06) | .12*** (.03) |

*$p$ < .05. **$p$ < .01. ***$p$ < .001.



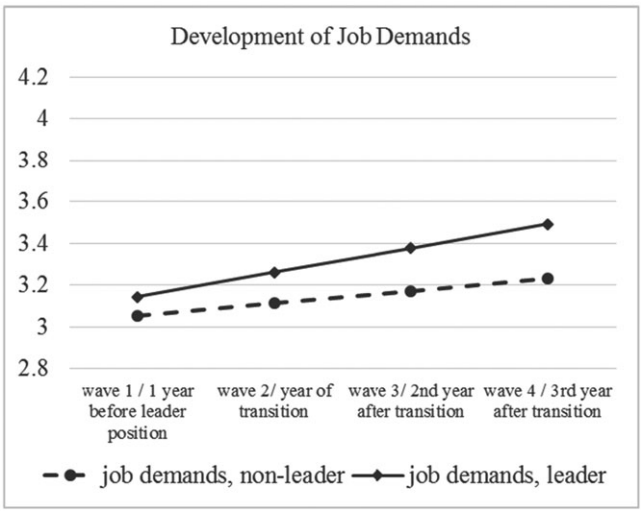




**FIGURE 2** Change over time in job control and job demands for employees transitioning from nonleadership positions into leadership positions ($n$ = 299) and for employees who remain in nonleadership positions ($n$ = 707)

### 8.2.2 | Job demands

Job demands were assessed with the 5-item scale ($\alpha$ = .75) from the Job Content Questionnaire (Karasek et al., 1998). Participants indicated on a 5-point Likert-type scale (1 = *all the time*, 5 = *never*) how frequently they experienced job demands such as workload, time pressure, interruptions, and task conflicts (e.g., "How often do you have too many demands made on you?").

### 8.2.3 | Job control

Job control was measured with the 6-item scale from the Job Content Questionnaire ($\alpha$ = .87). This scale indexes job incumbents' decision-making authority in various work activities, including initiating work, organizing the work environment, deciding what tasks to do, how to perform tasks, the amount of time spent at work, and a general sense of control at work (e.g., "How often do you have a choice in what tasks you do at work?").

### 8.2.4 | Hedonic well-being

Hedonic well-being was measured using the 3-item scale ($\alpha$ = .73) by Weiss, Bates, and Luciano (2008). Participants were interviewed three questions that were scored on a 4-point scale (1 = *a lot*, 4 = *not at all*) about their life satisfaction, life control, and satisfaction with themselves (e.g., "How satisfied are you with your life?").

### 8.2.5 | Eudaimonic well-being

Eudaimonic well-being was assessed using Ryff's (1989) 18-item Psychological Well-Being scale on a 7-point scale (1 = *strongly agree*, 7 = *strongly disagree*). A sample item is "For me, life has been a continuous process of learning, changing, and growth" ($\alpha$ = .81).

### 8.2.6 | Chronic diseases

Consistent with previous research (Kessler, Greenberg, Mickelson, Meneades, & Wang, 2001), chronic diseases were assessed by asking participants to indicate whether, in the last 12 months, they had experienced or been treated for each of a wide range of 29 chronic medical conditions. Examples are lung problems, bone problems, skin trouble, hay fever, urinary problems, emotional disorder, trouble with teeth, diabetes, stroke, ulcer, rupture, and sleeping problems. We summed the total number of diseases respondents affirmed and then applied the natural logarithm transformation after adding the value of one to avoid log0 cases.

### 8.2.7 | Blood pressure

Following previous research (e.g., Turiano et al., 2012), interviews elicited participants' reports of their diastolic and systolic blood pressure from their most recent blood pressure test. Such measures of blood pressure were found to be significantly correlated with independently assessed blood pressure (Okura, Urban, Mahoney, Jacobsen, & Rodeheffer, 2004). They have also been associated with measures of perceived job demands and job control (Fox, Dwyer, & Ganster, 1993) in a manner consistent with blood pressure assessed by other means. We used the natural logarithm transformation of these two blood pressure measures.

### 8.2.8 | Salivary cortisol

Cortisol is a stress hormone that has been widely used as a physiological indicator of well-being (Ganster & Rosen, 2013, p. 1091). The cortisol data were collected from the MIDUS cross-sectional study participants' saliva samples, over a period of 4 days, approximately 10 years later. For each of four consecutive days, participants provided four saliva samples: at waking (before getting out of bed), 30 min after getting out of bed, immediately before lunch, and immediately before bed. They were instructed to collect saliva samples before eating but not after consuming any caffeinated products. Participants kept a log on the exact time each saliva sample was provided, which was verified via nightly telephone interviews. They sent the 16 tubes via a provided courier package to the MIDUS researchers for analyses.

We used data on the measurements of cortisol and the exact time of the four cortisol collections for each day to compute the area under the curve (AUC), an indicator routinely used in endocrinological research and the neurosciences to assess overall cortisol secretion

(Pruessner, Kirschbaum, Meinlschmid, & Hellhammer, 2003). Following previous research (Piazza, Charles, Stawski, & Almeida, 2013), we used the natural logarithm transformation of the mean AUC across the 4 days obtained from each participant to reduce data skewness.

#### 8.2.9 | Control variables

In all analyses, we controlled for participants' gender, age, race, and level of education, because they are likely to affect both leadership and well-being (Ganster & Rosen, 2013; McEwen, 2007; Pampel, Krueger, & Denney, 2010) and could confound interpretations of their relationships. We controlled for neuroticism for the same reason. Notably, performing the various analyses separately without controlling for neuroticism did not change our results and conclusions. We controlled for income because it is an index of socioeconomic status, which is regarded as a potential confounding factor in studies on the relationship between work characteristics and well-being (Bosma et al., 1997). Participants reported their personal, before-tax earnings for the past 12 months. We used its natural logarithm transformation of income in the analyses. Gender was coded as a single categorical variable, whereas race was coded with multiple dummies, with White serving as the reference group. Age was coded according to participants' age in the MIDUS I cross-sectional study. Level of education was coded as 1 = some grade school to some high school; 2 = graduated from high school; 3 = some college but no bachelor's degree; and 4 = bachelor's degree or higher. Neuroticism was measured using the scale (four items, $\alpha$ = .80) from Lachman and Weaver (1997).

## 9 | RESULTS

### 9.1 | Dimensionality of study variables

We conducted CFAs to test whether the study variables, job demands, job control, hedonic well-being, and eudaimonic well-being represent distinct constructs. Items served as the indicators of each factor, except for eudaimonic well-being in which the mean scores across items for each of its six constituent components served as indicators. A four-factor model (Model 1, Table 2) fits the data well. This model fits the data better than four alternative models. Specifically, poorer indices of fit were obtained for a three-factor model in which the two sets of work characteristics indicators (demands and control) loaded on a single factor (Model 2), a three-factor model (Model 3) in which all the items of job control and hedonic well-being loaded on a single factor, another three-factor model (Model 4) in which all the indicators of the two well-being variables loaded on a single factor, and a one-factor model (Model 5) in which all indicators loaded on the same factor. These results suggest the four measures represent distinct constructs.

### 9.2 | Tests of hypotheses

The descriptive statistics and correlations among the study variables are presented in Table 5. We used the PROCESS program (Preacher & Hayes, 2008) to test the model.

Leadership role occupancy was positively related to job demands (see Model 1, Table 6) and job control (see Model 2). These findings support Hypotheses 1 and 2. Table 7 shows the indirect, direct, and total effects. As predicted by Hypotheses 3 and 4, the indirect effects of leadership role occupancy via job demands and job control on eudaimonic well-being were significant. The direct effect of leadership role occupancy on eudaimonic well-being was nonsignificant, and thus, the opposing signs, and comparable sizes, of the two indirect effects produced a nonsignificant total effect (see Model 5). Likewise, whereas there was no overall relationship between leadership role occupancy and hedonic well-being (see Model 3), the indirect effects through demands and control were significant (Table 7).

The indirect effect of leadership role occupancy via job demands on self-reported chronic diseases was significant, but the indirect effect through job control was not. The total effect of leadership role occupancy was not significant (Model 7 in Table 6). The same applied to self-reported systolic blood pressure. The only significant indirect effect was that through job demands. Neither the indirect effect via job control nor the total effect of leadership role occupancy was significant. There was also a significant indirect effect through job

**TABLE 5** Means, *SD*s, and correlations for variables in Sample 2

| Variables | Mean | *SD* | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Leadership role occupancy[a] | 0.50 | 0.50 | — | | | | | | | | |
| 2. Job demands | 3.17 | 0.63 | 0.21*** | — | | | | | | | |
| 3. Job control | 3.65 | 0.73 | 0.31*** | 0.17** | — | | | | | | |
| 4. Hedonic well-being | 3.57 | 0.48 | 0.07** | −0.14** | 0.22** | — | | | | | |
| 5. Eudaimonic well-being | 5.56 | 0.77 | 0.07** | −0.13** | 0.25** | 0.45** | — | | | | |
| 6. Systolic blood pressure [b] | 4.80 | 0.17 | 0.07 | 0.04 | −0.02 | −0.04 | −0.06 | — | | | |
| 7. Diastolic blood pressure [b] | 4.35 | 0.16 | −0.04 | −0.06 | −0.06 | −0.08* | −0.08** | 0.19*** | — | | |
| 8. Chronic diseases[b] | 0.92 | 0.71 | −0.03 | 0.13** | −0.06* | −0.22** | −0.28** | 0.14*** | 0.11** | — | |
| 9. Salivary cortisol: AUC[b] | 3.83 | 0.62 | −0.02 | 0.14** | −0.03 | −0.04 | −0.02 | 0.08 | −0.02 | −0.02 | — |
| 10. Neuroticism | 2.23 | 0.66 | −0.04 | 0.18*** | −0.13*** | −0.31*** | −0.46*** | −0.05 | −0.01 | 0.26*** | 0.04 |

*Note*. $N$ = 1,409 for cross-sectional data and $N$ = 427 for lagged cortisol data. Chronic diseases and blood pressure were self-reported. AUC = area under the curve; SD = standard deviation.

*$p$ < .05. **$p$ < .01. ***$p$ < .001.

[a]1 = leader, 0 = nonleader. [b]natural logarithm transformed.

**TABLE 6** Results of regression analyses for sample 2

| Variables | Model 1<br>Job demands<br>*B* | Model 2<br>Job control<br>*B* | Model 3<br>Hedonic well-being<br>*B* | Model 4<br>Hedonic well-being<br>*B* | Model 5<br>Eudaimonic well-being<br>*B* | Model 6<br>Eudaimonic well-being<br>*B* | Model 7<br>Chronic diseases<br>*B* | Model 8<br>Chronic diseases<br>*B* | Model 9<br>Systolic blood pressure<br>*B* | Model 10<br>Systolic blood pressure<br>*B* | Model 11<br>Diastolic blood pressure<br>*B* | Model 12<br>Diastolic blood pressure<br>*B* | Model 13<br>Salivary cortisol: AUC<br>*B* | Model 14<br>Salivary cortisol: AUC<br>*B* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gender | 0.15*** | 0.02 | 0.00 | 0.02 | 0.06 | 0.08* | 0.14*** | 0.12*** | −0.09*** | −0.09*** | −0.07*** | −0.07*** | −0.03 | −0.05 |
| Age | −0.00 | 0.00 | 0.00 | 0.01* | −0.01* | −0.01** | 0.01*** | 0.01*** | 0.01*** | 0.01*** | 0.01** | 0.01** | 0.01* | 0.01* |
| Race_African American | −0.27*** | −0.07 | 0.00 | −0.02 | 0.08 | 0.05 | −0.09 | −0.06 | 0.03 | 0.03 | 0.07* | 0.07* | 0.01* | 0.08 |
| Race_Native American | −0.14 | 0.04 | 0.29 | 0.27 | 0.10 | 0.08 | 0.21 | 0.23 | 0.05 | 0.06 | 0.02 | 0.02 | 0.28 | 0.37 |
| Race_Asian | −0.29* | −0.27 | −0.22* | −0.22* | −0.15 | −0.13 | 0.03 | 0.05 | 0.08 | 0.08 | 0.03 | 0.03 | −1.41*** | −1.33*** |
| Race_Other race | −0.04 | 0.23* | −0.00 | −0.04 | 0.18 | 0.13 | −0.15 | −0.13 | 0.01 | 0.02 | −0.05 | −0.05 | −0.12 | −0.09 |
| Race_Multiracial | 0.03 | 0.18 | 0.02 | 0.00 | −0.02 | −0.06 | 0.34 | 0.35 | −0.23** | −0.25*** | 0.05 | 0.05 | 0.53 | 0.36 |
| Education | 0.03*** | 0.03*** | −0.01 | −0.00 | 0.04*** | 0.04*** | −0.01 | −0.01 | −0.01* | −0.01* | −0.01 | −0.01 | 0.02 | 0.02 |
| Income | 0.05** | 0.06** | 0.02* | 0.02* | 0.04* | 0.03 | −0.02 | −0.02 | −0.01 | −0.01 | −0.01 | −0.01 | −0.01 | −0.01 |
| Neuroticism | 0.18*** | −0.12*** | −0.22*** | −0.18*** | −0.53*** | −0.48*** | 0.29*** | 0.27*** | 0.04*** | 0.03** | 0.01 | 0.01 | 0.09 | 0.06 |
| Leadership role occupancy | 0.21*** | 0.38*** | 0.04 | 0.02 | 0.03 | −0.02 | 0.01 | −0.01 | 0.02 | 0.02 | −0.02 | −0.02 | −0.06 | −0.08 |
| Job demands | — | — | — | −0.11*** | — | −0.14*** | — | 0.11*** | — | 0.03** | — | 0.01 | — | 0.14* |
| Job control | — | — | — | 0.12*** | — | 0.20*** | — | −0.04 | — | −0.01 | — | −0.01 | — | −0.04 |
| *F* | 18.86*** | 19.35*** | 16.28*** | 19.70*** | 39.69*** | 41.03*** | 19.00*** | 17.30*** | 9.41*** | 8.47*** | 3.73*** | 3.26*** | 3.10*** | 3.20*** |
| $R^2$ | 0.129 | 0.132 | 0.113 | 0.154 | 0.237 | 0.276 | 0.129 | 0.138 | 0.147 | 0.156 | 0.064 | 0.066 | 0.075 | 0.091 |

*Note*. $N$ = 1,409 for cross-sectional data and $N$ = 427 for lagged cortisol data.

Gender: 0 = male and 1 = female. Coefficients were unstandardized. Race: White was used as the reference group for other race variables. Chronic diseases and blood pressure were self-reported.

*$p$ < .05. **$p$ < .01. ***$p$ < .001.

**TABLE 7** Indirect, direct, and total effects of leadership role occupancy on health and well-being outcomes (Samples 2–4)

| Sample | Dependent variable | Total effect | 95% bias-corrected bootstrap CI | Direct effect | 95% bias-corrected bootstrap CI | Mediating variable | Indirect effect | 95% bias-corrected bootstrap CI |
|---|---|---|---|---|---|---|---|---|
| 2 | Hedonic well-being | 0.04 | (−0.005, 0.092) | 0.02 | (−0.029, 0.070) | Job demands<br>Job control | −0.02**<br>0.04** | (−0.035, −0.013)<br>(0.032, 0.063) |
| 2 | Eudaimonic well-being | 0.02 | (−0.047, 0.099) | −0.02 | (−0.097, 0.052) | Job demands<br>Job control | −0.03**<br>0.07** | (−0.046, −0.015)<br>(0.054, 0.105) |
| 2 | Chronic diseases | 0.01 | (−0.067, 0.076) | −0.00 | (−0.077, 0.072) | Job demands<br>Job control | 0.02**<br>−0.02 | (0.010, 0.039)<br>(−0.035, 0.004) |
| 2 | Systolic blood pressure | 0.02 | (−0.003, 0.051) | 0.02 | (−0.004, 0.051) | Job demands<br>Job control | 0.004*<br>−0.003 | (0.001, 0.009)<br>(−0.009, 0.002) |
| 2 | Diastolic blood pressure | −0.02 | (−0.045, 0.009) | −0.02 | (−0.042, 0.012) | Job demands<br>Job control | 0.001<br>−0.003 | (−0.003, 0.003)<br>(−0.009, 0.002) |
| 2 | Cortisol | −0.06 | (−0.179, 0.067) | −0.08 | (−0.210, 0.053) | Job demands<br>Job control | 0.04*<br>−0.02 | (0.001, 0.113)<br>(−0.062, 0.026) |
| 3 | Systolic blood pressure | −0.01 | (−0.055, 0.027) | −0.02 | (−0.062, 0.021) | Job demands<br>Job control | 0.01*<br>−0.001 | (0.001, 0.020)<br>(−0.008, 0.006) |
| 3 | Diastolic blood pressure | −0.01 | (−0.057, 0.042) | −0.02 | (−0.070, 0.031) | Job demands<br>Job control | 0.01*<br>−0.002 | (0.001, 0.022)<br>(−0.006, 0.011) |
| 3 | Cortisol | −0.17 | (−0.388, 0.056) | −0.21 | (−0.434, 0.018) | Job demands<br>Job control | 0.06**<br>−0.01 | (0.017, 0.117)<br>(−0.060, 0.021) |
| 4 | Hedonic well-being | 0.26** | (0.065, 0.458) | 0.19 | (−0.016, 0.390) | Job demands<br>Job control | −0.06*<br>0.13** | (−0.128, −0.025)<br>(0.077, 0.217) |
| 4 | Eudaimonic well-being | 0.18** | (0.090, 0.270) | 0.08 | (−0.010, 0.166) | Job demands<br>Job control | −0.04*<br>0.13** | (−0.062, −0.017)<br>(0.095, 0.192) |
| 4 | Chronic diseases | −0.02 | (−0.113, 0.081) | −0.03 | (−0.128, 0.074) | Job demands<br>Job control | 0.03*<br>−0.02 | (0.014, 0.064)<br>(−0.057, 0.004) |
| 4 | Cortisol | 0.09 | (−0.020, 0.202) | 0.09 | (−0.023, 0.208) | Job demands<br>Job control | 0.02*<br>−0.02 | (0.001, 0.057)<br>(−0.060, 0.009) |

*Note*. AUC = area under the curve; CI = confidence interval. Chronic diseases and blood pressure were self-reported in Samples 2 and 4.

demands on cortisol, yet there was no corresponding indirect effect through job control. Finally, indirect effects on self-reported diastolic blood pressure were not significant. In sum, the results support the dual-pathway model for eudaimonic and hedonic well-being, whereas the only significant indirect effects of leadership role occupancy through job demands were for self-reported chronic diseases, self-reported systolic blood pressure, and cortisol.[1]

The results from this sample were somewhat mixed. Whereas all hypotheses were supported for the psychological well-being outcomes (hedonic and eudaimonic), support for hypothesized indirect effects on physiological well-being was found only through job demands, with respect to self-reported chronic diseases, self-reported systolic blood pressure, and cortisol. Notably, the cortisol data were collected 10 years after the job information. From the perspective of the allostatic load model (McEwen, 2007), the influences of work demands may accumulate over an extended period before resulting in disequilibrium among primary mediators. Prospective studies of job demands and job control are consistent with this perspective. For example, significant influences of job demands on coronary heart disease symptoms (Netterstrøm, Kristensen, & Sjøl, 2006) and blood pressure levels (Landsbergis, Schnall, Pickering, Warren, & Schwartz, 2003) have been reported over lags of 20 years or more. Friedman, Karlamangla, Almeida, and Seeman (2012) observed effects of social life stressors on cortisol lagged over a 10-year period. Nevertheless, one may question whether the results pertaining to cortisol can be generalized to shorter durations. In addition, despite evidence noted above for our method of collecting blood pressure, it is preferable to assess blood pressure mechanically. Therefore, we tested the robustness of the blood pressure findings by using the mechanical measurements of blood pressure collected in Samples 3 and 4. These samples also enabled additional tests of relationships with cortisol.

[1]To assess statistical suppression, we performed two additional analyses that examined each mediator separately in each of the three samples. The coefficients were similar to those in which both mediators were tested simultaneously, indicating a lack of suppression.

## 10 | CHINA SAMPLE (SAMPLE 3)

We sought to replicate the results of Sample 2 regarding blood pressure and cortisol with data collected from an organization in China. We used a time-lagged design. Blood pressure and cortisol data were measured 2 years and 1 week, respectively, after job demands and job control.

## 11 | METHOD

### 11.1 | Participants and procedures

The data drawn from a larger study examining job characteristics and well-being in a large state-owned manufacturing company in China (Xie, Schaubroeck, & Lam, 2008). The data were collected yearly from 1999 through 2001. Of the 369 participants, 42 were leaders and 259 were male ($M_{age}$ = 38.25). On average, participants had 11.70 years of education. They were incumbents from seven families of positions

ranging from managers to production workers. Brislin's (1980) translation–back translation approach was used in developing the survey questionnaire.

## 11.2 | Measures

### 11.2.1 | Leadership role occupancy

Information on whether participants held management positions (11.4% leaders) was used to identify their status on leadership role occupancy (1 = *leader*, 0 = *non-leader*). This information was obtained from organizational records.

### 11.2.2 | Job demands

Job demands ($\alpha$ = .84) were assessed with a 4-item scale developed by Caplan et al. (1975). Response options ranged from 1 (*a little*) to 5 (*a great deal*). A sample item is "To what extent you are responsible for the morale of others?".

### 11.2.3 | Job control

Job control ($\alpha$ = .75) were evaluated with a 5-item measure by Smith et al. (1997). Participants indicated the extent to which they had control over work pace, work methods, work quality, and so forth on a 5-point scale (1 = *a little*, 7 = *a great deal*). A sample item is "How much control do you have over how fast your work?".

### 11.2.4 | Blood pressure

Medical professionals who served in the infirmary of the company measured blood pressure. These data were collected approximately 2 years after participants' job characteristics were gathered. Each participant's blood pressure was measured three times using a sphygmomanometer, with resting intervals of at least 20 min. The three measures of systolic ($\alpha$ = .91) and diastolic ($\alpha$ = .92) blood pressure were averaged, and we used the natural logarithm transformations of these averages in the analyses.

### 11.2.5 | Cortisol

Levels of cortisol were measured from assays of 12 cc of blood drawn from each participant by the company's medical professionals, 1 week after participants finished the questionnaire survey. The blood samples were then transferred to a medical university in China for assay and conversion to specific indexes. The natural logarithm transformation of level of cortisol was used in the analyses.

### 11.2.6 | Control variables

We controlled for gender, age, job tenure, and level of education.

# 12 | RESULTS

## 12.1 | Dimensionality of study variables

We performed CFAs to test whether job demands and job control were distinct from each other. Table 2 shows the results of CFAs on the job demands and job control. The two-factor model (Model 9) fit the data well and better than an alternative measurement model in which all the items were specified to load on a single factor (Model 10).

## 12.2 | Tests of hypotheses

Table 8 displays the descriptive statistics and correlations for the study variables. We again used PROCESS (Preacher & Hayes, 2008) to test the hypotheses. Although correlations of leadership role occupancy with systolic blood pressure and cortisol were statistically significant ($p$ < .05), they were small in magnitude (−.10 and −.16, respectively). Regression analyses (Table 9) show that these relations were nonsignificant after controlling for demographic variables.

In support of Hypotheses 1 and 2, leadership role occupancy was positively related to job demands (see Model 1, Table 9) and job control (see Model 2). The indirect effect of leadership role occupancy through job demands was significant for systolic blood pressure (see

**TABLE 8** Means, *SD*s, and correlations for variables in sample 3

| Variables | Mean | *SD* | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Leadership role occupancy [a] | 0.11 | 0.32 | — | | | | | | | | |
| 2. Job demands | 2.13 | 1.03 | 0.23** | — | | | | | | | |
| 3. Job control | 2.76 | 0.85 | 0.21** | 0.18** | — | | | | | | |
| 4. Systolic blood pressure[a] | 4.80 | 0.12 | −0.10* | 0.14** | −0.12 | — | | | | | |
| 5. Diastolic blood pressure[a] | 4.35 | 0.15 | −0.08 | 0.16** | 0.02 | 0.86** | — | | | | |
| 6. Cortisol[a] | 5.11 | 0.63 | −0.16** | −0.08 | −0.06 | 0.16** | 0.16** | — | | | |
| 7. Gender[c] | 0.30 | 0.44 | 0.01 | −0.23** | 0.00 | −0.35** | −0.31** | −0.24** | — | | |
| 8. Age | 38.25 | 6.30 | 0.11* | 0.18** | 0.10 | 0.09 | 0.12* | −0.20** | 0.09 | — | |
| 9. Education | 11.70 | 2.49 | 0.40** | 0.09 | 0.11* | −0.15** | −0.16** | −0.06 | 0.08 | −0.17** | — |
| 10. Tenure | 10.09 | 7.02 | 0.22** | 0.02 | 0.02 | 0.24** | 0.23** | 0.05 | −0.01 | 0.55** | −0.33** |

*Note*. $N$ = 369. *SD* = standard deviation

*$p$ < .05. **$p$ < .01. ***$p$ < .001.

[a]1 = leader, 0 = nonleader. [b]natural logarithm transformed. [c]0 = male, 1 = female.

**TABLE 9** Results of regression analyses for Sample 3

| Variables | Model 1<br>Job demands<br>*B* | Model 2<br>Job control<br>*B* | Model 3<br>Systolic blood pressure<br>*B* | Model 4<br>Systolic blood pressure<br>*B* | Model 5<br>Diastolic blood pressure<br>*B* | Model 6<br>Diastolic blood pressure<br>*B* | Model 7<br>Cortisol<br>*B* | Model 8<br>Cortisol<br>*B* |
|---|---|---|---|---|---|---|---|---|
| Gender | −0.58*** | −0.01 | −0.09*** | −0.08*** | −0.10*** | −0.09*** | −0.29*** | −0.24** |
| Age | 0.03*** | 0.01 | 0.01 | −0.01 | 0.01 | 0.01 | −0.03*** | −0.03*** |
| Education | 0.02 | 0.02 | −0.01 | −0.01 | −0.01 | −0.01 | −0.01 | −0.01 |
| Job tenure | −0.01 | 0.01 | 0.01** | 0.01** | 0.01* | 0.01* | 0.02** | 0.02** |
| Leadership role occupancy | 0.64*** | 0.52*** | −0.01 | −0.02 | −0.01 | −0.02 | −0.17 | −0.21 |
| Job demands | — | — | — | 0.01* | — | 0.02* | — | 0.09*** |
| Job control | — | — | — | −0.01 | — | −0.01 | — | −0.03 |
| *F* | 12.65*** | 4.22*** | 16.36*** | 12.23*** | 13.55*** | 10.51*** | 10.22*** | 8.43*** |
| $R^2$ | 0.148 | 0.055 | 0.172 | 0.179 | 0.147 | 0.158 | 0.123 | 0.141 |

*Note*. *N* = 369.

Gender: 0 = male and 1 = female. Coefficients were unstandardized.

*$p$ < .05. **$p$ < .01. ***$p$ < .001.

Table 7; also see Model 4 in Table 9), diastolic blood pressure (also see Model 6 in Table 9), and cortisol (also see Model 8 in Table 9). These results support Hypothesis 3. The indirect effect of leadership role occupancy through job control was not statistically significant for any of the outcome variables. Thus, Hypothesis 4 was not supported. None of the total effects of leadership role occupancy on the well-being variables was significant.

In summary, this sample replicated the results of Sample 2 using cortisol data that was separated from the measures of job demands and job control by a shorter time lag than that in Sample 2. It also used multiple resting measures of blood pressures obtained from sphygmomanometers under controlled conditions rather than via self-report as in Sample 2. A noteworthy limitation, however, is that the study was not based on a probabilistic sample. Another limitation is that cortisol was measured with a single observation (see also Sherman et al., 2012). These two limitations are addressed in Sample 4.

## 13 | JAPAN SAMPLE (SAMPLE 4)

We tested the dual-pathway model using a probability sample from Tokyo, Japan. We employed cross-sectional data on hedonic well-being, eudaimonic well-being, and chronic diseases, as well as cortisol data collected across three consecutive days, approximately one and a half years after the cross-sectional data were gathered.

## 14 | METHOD

### 14.1 | Participants and procedures

Data were drawn from Survey of Midlife Development in Japan (MIDJA) for comparative analyses with Midlife Development in the United States. MIDJA was a probability sample of 1,027 Japanese adults in the Tokyo metropolitan area aged 30 to 79. We examine the first wave cross-sectional MIDJA data collected from April to September 2008 and salivary cortisol data collected in a follow-up study from January 2009 to April 2010.

The cross-sectional analyses used the data (*N* = 703, 236 leaders) on leadership role occupancy, job demands, job control, and three self-reported outcome variables including hedonic well-being, eudaimonic well-being, and chronic diseases. The mean age of participants was 50.86 years, 66% were female, and education levels ranged from bachelors' to PhD (37.0%), some college but no bachelor's degree (2.8%), two-year college graduate (8.5%), vocational school graduate (15.1%), high school graduate (27.5%), and some high school or lower (9.1%).

The time-lagged analyses used data (total *N* = 254, 82 leaders) on leadership role occupancy, the two job characteristics, and salivary cortisol. The mean age of participants in this subsample was 50.64 years; 52% were women, and education levels ranged from bachelor to PhD (38.5%), some college but no bachelor's degree (2.4%), 2-year college graduate (11.8%), vocational school graduate (12.2%), high school graduate (28.0%), and some high school or lower (7.1%).

### 14.2 | Measures

#### 14.2.1 | Leadership role occupancy

Leadership role occupancy was measured by the question "Are you in a supervisory position?" (1 = *Yes*, 0 = *No*).

#### 14.2.2 | Job demands and job control

Job demands ($\alpha$ = .76) and job control ($\alpha$ = .88) were assessed using the same scales as in Sample 2.

#### 14.2.3 | Hedonic well-being

Hedonic well-being was measured using a widely adopted 5-item measure ($\alpha$ = .89) developed by Diener, Emmons, Larsen, and Griffin (1985). Participants answered questions about their life in general on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). A sample item is "I am satisfied with my life."

#### 14.2.4 | Eudaimonic well-being and chronic diseases

Eudaimonic well-being ($\alpha$ = .72) and chronic diseases were measured using the same scales as in Sample 2. We again utilized the natural logarithm transformation of number of chronic diseases (after adding the value of one to avoid log0 cases) in the analyses.

#### 14.2.5 | Salivary cortisol

Levels of salivary cortisol were assessed in a manner similar to Sample 2. The only difference was that in this sample, participants provided saliva samples three times (morning, midday, and evening) a day across three consecutive days. Using data on the level of cortisol and the exact collection time each day, we first computed the AUC for each day. The cortisol score used in the analyses is the average AUC across the 3 days. We used the natural logarithm transformation of this variable in the analyses.

#### 14.2.6 | Control variables

We controlled for participants' gender, age, level of education, and neuroticism. We used the same measure of neuroticism ($\alpha$ = .72) as in Sample 2.

## 15 | RESULTS

### 15.1 | Dimensionality of study variables

We performed CFAs to test whether job demands, job control, hedonic well-being, and eudaimonic well-being measured distinct constructs. Except eudaimonic well-being, the items of each scale served as the factor indicators. The six dimensional means served as indicators of eudaimonic well-being. The four-factor model fit the data well (see Table 2).

### 15.2 | Tests of hypotheses

Table 10 provides the descriptive statistics and correlations. We used PROCESS (Preacher & Hayes, 2008) to test the hypotheses.

As predicted by Hypotheses 1 and 2, leadership role occupancy was positively related to both job demands (see Model 1, Table 11) and job control (Model 2). In support of Hypotheses 3 and 4, leadership role occupancy had significant negative indirect effects through job demands and positive indirect effects through job control, on hedonic well-being and eudaimonic well-being (see Table 7). Indirect effects of leadership role occupancy through job demands were significant only for self-reported chronic diseases and salivary cortisol.

## 16 | GENERAL DISCUSSION

Leaders' well-being is a critical determinant of their effectiveness (Bass & Bass, 2008; Hambrick et al., 2005) and the performance and well-being of their followers (Roche et al., 2014; Sy et al., 2005). Yet there is little theoretical or evidentiary basis to consider whether engaging in leadership promotes or undermines well-being among those who attain leadership positions. We drew from the literature on leadership, work stress, and related topics to address this question. We proposed a dual-pathway model in which influences of leadership role occupancy on well-being are mediated by job demands and job control. The results based on the first sample indicated that as individuals moved from nonleader roles into leader roles, their perceptions of both job control and job demands increased and remained elevated, both in comparison with baseline and compared with the perceptions of employees who remained in nonleader roles, across 4 years of observation. This suggests that leadership role occupancy may enhance job control and demands. It provided confidence for testing the dual-pathway model. We tested this model across a range of well-being indicators in three independent samples. Our research provided an important first step in assessing how distinct work characteristics may explain the relationship between leadership role occupancy and job incumbents' well-being.

We found small relationships between leadership role occupancy and well-being indexes, and the identified relationships, when significant, were in the direction of leaders having greater well-being than nonleaders. Such findings are consistent with previous research (Sherman et al., 2012; Skakon et al., 2011). We also found that leaders reported both high job demands and high job control. In line with a

**TABLE 10** Means, *SD*s, and correlations for variables in sample 4

| Variables | Mean | *SD* | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| 1. Leadership role occupancy[a] | 0.34 | 0.47 | — | | | | | | |
| 2. Job demands | 2.67 | 0.74 | 0.21** | — | | | | | |
| 3. Job control | 3.32 | 0.90 | 0.34** | 0.38** | — | | | | |
| 4. Hedonic well-being | 3.99 | 1.22 | 0.13** | −0.08* | 0.17** | — | | | |
| 5. Eudaimonic well-being | 4.71 | 0.59 | 0.19** | −0.01 | 0.37** | 0.45** | — | | |
| 6. Chronic diseases[b] | 0.98 | 0.59 | −0.06 | 0.06 | −0.06 | −0.16** | −0.07 | — | |
| 7. Salivary cortisol: AUC[b] | 4.43 | 0.39 | 0.11 | 0.12* | −0.02 | 0.10 | 0.06 | −0.03 | — |
| 8. Neuroticism | 2.13 | 0.56 | −0.08* | 0.18** | −0.02 | −0.27** | −0.34** | 0.19** | −0.08 |

*Note*. $N$ = 703 for cross-sectional data and $N$ = 254 for lagged cortisol data. *SD* = standard deviation.

[a]1 = leader, 0 = nonleader. [b]natural logarithm transformed. Chronic diseases were self-reported.

*$p$ < .05. **$p$ < .01. ***$p$ < .001.

**TABLE 11** Results of regression analyses for Sample 4

| Variables | Model 1<br>Job demands<br>*B* | Model 2<br>Job control<br>*B* | Model 3<br>Hedonic well-being<br>*B* | Model 4<br>Hedonic well-being<br>*B* | Model 5<br>Eudaimonic well-being<br>*B* | Model 6<br>Eudaimonic well-being<br>*B* | Model 7<br>Chronic diseases<br>*B* | Model 8<br>Chronic diseases<br>*B* | Model 9<br>Salivary cortisol: AUC<br>*B* | Model 10<br>Salivary cortisol: AUC<br>*B* |
|---|---|---|---|---|---|---|---|---|---|---|
| Gender | −0.10 | −0.12 | 0.22* | 0.23* | 0.13** | 0.15*** | 0.15** | 0.15*** | −0.03 | −0.03 |
| Age | −0.01*** | −0.01 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01*** | 0.01*** | −0.01 | 0.01 |
| Education | 0.02* | 0.06*** | 0.08*** | 0.07** | 0.05*** | 0.04*** | 0.00 | −0.00 | −0.01 | −0.01 |
| Neuroticism | 0.16** | −0.03 | −0.51*** | −0.47*** | −0.34*** | −0.32*** | 0.25*** | 0.23*** | −0.07 | −0.08 |
| Leadership role occupancy | 0.31*** | 0.56*** | 0.26** | 0.19 | 0.18*** | 0.08 | −0.02 | −0.03 | 0.09 | 0.01 |
| Job demands | — | — | — | −0.20*** | — | −0.12*** | — | 0.11** | — | 0.08* |
| Job control | — | — | — | 0.25*** | — | 0.25*** | — | −0.04 | — | −0.04 |
| *F* | 30.30*** | 24.01*** | 15.73*** | 14.92*** | 30.98*** | 41.36*** | 10.85** | 9.38*** | 1.47 | 1.97* |
| $R^2$ | 0.179 | 0.148 | 0.102 | 0.131 | 0.182 | 0.294 | 0.072 | 0.086 | 0.029 | 0.048 |

*Note*. $N$ = 703 for cross-sectional data and $N$ = 254 for lagged cortisol data. AUC = area under the curve.

Gender: 0 = male and 1 = female. Coefficients were unstandardized. Chronic diseases were self-reported.

*$p$ < .05 **$p$ < .01 ***$p$ < .001.

large body of other work (Ganster & Rosen, 2013; Häusser et al., 2010; Nixon et al., 2011), we also found that higher job demands were associated with lower well-being whereas higher job control was associated with greater well-being (e.g., hedonic and eudaimonic well-being).

When two pathways explain all or a substantial portion of a relationship between two variables, opposing signs of their indirect effects can render the overall relationship, small or nonsignificant (James & Brett, 1984; MacKinnon et al., 2007). We had conjectured that indirect effects through job control offset indirect effects through job demands to produce uncertain overall effects of leadership role occupancy on well-being. Across Samples 2, 3, and 4, the overall effects of leadership role occupancy were quite small by conventional standards. For indexes of hedonic and eudaimonic well-being, there were significant indirect effects through both job demands and job control. For physiological well-being, however, indirect effects were chiefly through job demands. Relationships between perceived job control and physical symptoms tend to be small (Nixon et al., 2011), and weighting these further by the moderate-sized relationship between leadership role occupancy and job control produces a very small indirect effect. Notably, leadership role occupancy had no significant direct effects to complicate these comparisons. Thus, offsetting effects of job demands and job control contributed to a small overall influence of leadership role occupancy on well-being. Such findings may potentially reconcile the mixed findings from previous studies (Sherman et al., 2012; Skakon et al., 2011).

We suggest two possible reasons for the nonsignificant mediating role of job control in the relationship between leadership role occupancy and physiological well-being indicators, though weak relationships between job control and physiological outcomes are common in previous research (Nixon et al., 2011). For example, Sonnentag and Frese (2012) argued that job control might be better studied as a multidimensional construct. It is also possible that other work characteristics (e.g., knowledge and physical characteristics and working hours) played a role. Future research should examine this issue in greater depths.

## 16.1 | Implications for research and practice

Although we found consistent support for indirect effects of leadership role occupancy through job demands irrespective of the outcome measure, corresponding indirect effects through job control (Hypothesis 3) were limited to hedonic and eudaimonic well-being (Samples 2 and 4). To interpret this difference, it is important to consider both the first and second stages of the indirect effect. Leadership role occupancy was positively related to both job demands and job control in all four samples. Except in Sample 3, the relationship between leadership role occupancy and job demands was weaker than its relationship with job control. Yet, for physical well-being outcomes, job demands exhibited stronger influences (though not large in magnitude) than job control. Meta-analytic evidence indicates that job control tends to have moderately strong relationships with indexes of psychological well-being (Häusser et al., 2010) and a small relationship with physical well-being outcomes (Nixon et al., 2011). Our findings indicate that indirect effects of leadership role occupancy are dependent on the magnitude of relationships between job demands and control and outcomes, and they differ depending on the type of outcome, research design, and contextual factors. Population-based sampling, as in our Samples 2 and 4, is important because relationships between leadership role occupancy and other variables logically vary in strength depending on the extent to which the referent nonleader sample is representative of the occupational distribution of nonleaders in the population. This is a limitation in Sherman et al.'s (2012) study that used a small convenience sample. Thus, discrepancies in leadership role occupancy—cortisol effect sizes might arise from differences in the extent to researchers used an occupationally heterogeneous population.

Qualitative studies of employees transitioning into supervisory positions have noted that many job incumbents struggle with managing their dependency on followers (Hill, 2007). These studies reported that some new leaders perceived they were less in control of their jobs than they were as nonleaders, but this changed quickly

after they learned how to manage these relationships. Findings based on Sample 1 showed that in the sample of new leaders overall, control perceptions increased during the first year of the transition. A key difference was that our study surveyed employees annually, whereas the qualitative studies queried new leaders during the initial weeks following the transitions. Irrespective of whether a sense of lost control in the short term preceded the increase in job control we observed, it is certain that new leaders face a very challenging period of adjustment.

Our research on the relationship between leadership role occupancy and well-being has important implications for leadership theory and research. Much recent research is predicated on the assumption that when leaders cope poorly with their roles and/or they suffer diminished emotional, behavioral, or energetic capacity, they are less likely to exhibit effective leader behaviors (e.g., Hambrick et al., 2005; Lin et al., 2016). Ineffective and destructive behaviors that derive from leaders' compromised states adversely influence their followers' well-being (Sy et al., 2005). Thus, a great deal of phenomena concerning leaders and their connections to individual followers and task groups may be contingent on leaders' levels of well-being. The allostatic load model of stress (McEwen, 2007) would suggest that leaders who chronically experience high levels of job demands (and/or low levels of control) tend to eventually reach a point at which they cross the allostatic threshold and experience diminished capacities that compromise their abilities to lead effectively. Our findings show that levels of job demands experienced by leaders tend to be very high, and thus, leaders' job demands may be a crucial unmeasured variable in studies of leaders' behaviors directed toward followers and groups. Although job control also tends to be high among leaders, given the high levels of uncertainty leaders face on a daily basis and the acute need for their discretion, very high levels of perceived control may often be essential for effective leadership. Thus, in addition to considering job demands, when studying leadership behaviors, it is also critical for researchers to consider the antecedent role of leaders' job control perceptions.

In terms of practical implications, organizations should seek to ensure that their investment in leaders is not compromised by low levels of leader well-being that may discourage nascent leaders from continuing in their careers as leaders. Our finding that, on average, job control offsets the adverse influence of leadership role occupancy on well-being implies that providing opportunities for leaders to have decision latitude is critically important. In addition, the higher levels of job demands reported by leaders in this study suggests that it may be useful for organizations to ensure that leaders are not over-burdened and that they have ample opportunities for rest and recovery (Sonnentag, 2003). Recovery periods may be critical to ensuring that demands do not precipitate the chronically elevated physiological states that precipitate poor physical well-being (Sonnentag & Frese, 2012). Most organizations invest a great deal in selecting, training, and developing leaders at various hierarchical levels (Barling & Cloutier, 2017). Identifying and implementing means to limit leaders' job demands and foster their recovery is critical to obtaining a sizable return on these investments.

## 16.2 | Limitations and future research directions

Our research has several limitations. First, we did not directly test the causal direction of the relationship between leadership role occupancy and well-being, and thus, we relied on our theoretical rationale for the tested causal order. It is conceivable, for example, that high levels of well-being play some role in predisposing individuals to seek, accept, and remain in leadership roles. However, Sample 1 provided quite reliable evidence of changes in job control and job demands that persisted for years after employees undertook leadership positions.

Second, although consistent with previous research, our measure of leadership role occupancy did not distinguish differences in hierarchical leadership levels. Measures of leadership role occupancy may be deficient in terms of the capturing the range of activities and responsibilities associated with leadership roles. Sample 2 included an alternative measure of leadership role occupancy that differentiated managers according to their direct and indirect span of control, but the findings for this measure were essentially the same as those for the binary measure. Future research might extend this by purposively sampling for hierarchical levels and/or occupational domains.

Third, we controlled for neuroticism in analyses of data from Samples 2 and 4. This did not materially attenuate the observed relationships. However, we cannot be certain that there were no other unmeasured variables that might help to explain the relationship between leadership role occupancy and well-being. Future research can further address this possibility. Relatedly, personality variables may moderate the relationships of job characteristics and well-being. We examined the moderating role of neuroticism in Samples 2 and 4 but did not observe significant results, but future research may examine moderating effects of other personality traits.

Fourth, in some cases, we used different scales in capturing the same job characteristics and well-being constructs. Different measures of job demands may tap into various aspects of demands (Hambrick et al., 2005). Although the scales used in our research have been adopted in previous research, the differences in scales might explain subtle differences in our findings across samples, such as the relative size of the effects of leadership role occupancy on job demands and job control, respectively, in Sample 3 as compared with Samples 2 and 4. In addition, we did not control for other variables such as job types and other stressors.

Fifth, the effect size we recorded in the current research was small according to conventional standards. This may be because of the binary measure of leadership role occupancy used in this study. That said, a small effect size does not necessarily mean that such research has no significant practical implications (Prentice & Miller, 1992). Considering the significant influence of leaders on the performance of teams and organizations (Barling & Cloutier, 2017; Bass & Bass, 2008), we believe our findings have important practical implications.

Our findings were generally consistent across Samples 2, 3, and 4 despite their substantially different societal contexts. Although this is evidence of robustness, future research may further examine how cultural values may shape the influence of leadership role occupancy on well-being (Taylor, Li, Shi, & Borman, 2008). In our exploratory

[2]We are indebted to one of our anonymous reviewers for this suggestion.

analyses,[2] we found that the indirect effect of leadership role occupancy on eudaimonic well-being through job control was significantly larger in the Japan sample than in the US sample, and the difference in the indirect effect through job demands was not different across the two samples. This may be because in Japan, there is stronger endorsement of power distance as a value than in USA. Thus, gaining control at work may have more pronounced effect for individuals' well-being in Japan than for people in the USA (House, Hanges, Javidan, Dorfman, & Gupta, 2004).

Our supplementary analyses indicated that the influences of leadership role occupancy through demands and control were not qualified by demands—control interactions. Specifically, we tested whether the indirect relationships between leadership role occupancy and well-being through job demands were weaker among individuals who report higher levels of control (i.e., a moderated mediation model in which job control moderated the indirect effects of leadership role occupancy on well-being through job demands). Across the 13 tests on all the outcome variables in the three samples, only two yielded significant coefficients for the interaction between job demands and job control. Such limited support for demands × job control interactions in predicting well-being outcomes is consistent with the literature (Ganster & Rosen, 2013). However, Karasek's (1979) model and its derivatives remain influential, and interactive formulations of demands and control have been supported in some studies. Therefore, future studies on the relationship between leadership role occupancy and well-being should continue to examine the interactive effects of job demands and job control.

## 17 | CONCLUSIONS

This research extends the line of research on leaders' well-being by examining the relationship between leadership occupancy and well-being. Our findings suggest that leadership roles tend to be associated with higher levels of job demands and job control, which in turn have countervailing influences on well-being. This study serves as the first step toward reconciling the conflicting views and mixed findings on this relationship. Although our findings are not definitive, they provide a starting point of evidence accumulation and a potential template for future research and theory development.

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