The interaction effects of scheduling control and work–life balance programs on job satisfaction and mental health

Jang SJ, Park R, Zippay A. The interaction effects of scheduling control and work–life balance programs on job satisfaction and mental health

The demands of balancing employment and family responsibilities strain the health and welfare of many employees worldwide, and social welfare policy analysts are increasingly attending to the factors that can alleviate such stress. The present study examined associations between the availability of work–life balance programs, employees’ authority to arrange their own work hours, job satisfaction, and mental health among 1,293 employees in 50 companies in South Korea. The study is unique in its use of multilevel analysis in examining individual- and company-level variables. The results add to the evidence regarding the positive relationship between the availability of scheduling control and work–life balance policies on the one hand, and job satisfaction and mental wellbeing, on the other.

Introduction
As the number of dual-earner families has risen in recent decades, there have been growing demands from working parents, employers, and various advocacy groups for policies that can support dual-earner households as they manage family life and employment (Barnett, 2004; Barnett & Hyde, 2001; Duxbury & Higgins, 1994; Gerson, 2002; Jacobs & Gerson, 2004; Lewis, Noden, & Sarre, 2008). In recent years, policy makers and employers have investigated and implemented a variety of “work–life balance” (Kang, Bae, & Jeong, 2006: 3) programs and strategies to ease work–family stress and conflicts, including extended family leave, job-sharing, and flexible work schedules (Bird, 2006; Gerson, 2002; Kang et al., 2006). Of particular interest to researchers have been the effects of employee scheduling control and flexible work schedules on job satisfaction and wellbeing (Hill, Hawkins, Ferris, & Weitzman, 2001; Saltzstein, Ting, & Saltzstein, 2001; Scandura & Lankau, 1997).

The present study examined the associations between employees’ ability to control their work schedules, the availability of work–life balance programs, job satisfaction, and mental health among 1,293 employees of 50 companies located in South Korea. The study is unique in its use of multilevel analysis in examining individual and company-level variables, and in its investigation of the interaction effects of the independent variables of scheduling control and the availability of work–life balance programs. Most studies of work control and work–life balance issues have involved samples from the United States and Europe; this study extended that research to include experiences among South Korean workers. The results add to the evidence regarding the association between the availability of scheduling control and work–life balance programs, on the one hand, and job satisfaction and mental health, on the other, and build an empirical base for policies that can potentially ease some job stress and enhance welfare and wellbeing.

Background
Work–life balance is defined as an employee’s perception that multiple domains of personal time, family care, and work are maintained and integrated with a minimum of role conflict (Clark, 2000; Ungerson &
Yeandle, 2005). Employer-sponsored work–life balance or “family-friendly” policies vary widely among companies and are intended to assist employees with work–life integration (Galinsky, Friedman, & Hernandez, 1991). These include formal initiatives, such as on-site or subsidized childcare, leave time for childbirth, or the care of an ill or elderly family member, and flexible work arrangements, such as job-sharing, flexible or reduced hours, extended lunch hours, compressed work weeks, and telecommuting (Bond, Flaxman, & Bunce, 2008; Galinsky et al., 1991). Some companies are also characterized as having informal, family-friendly cultures as, for example, when supervisors accommodate an employee’s needs for flexible time to meet family demands (such as an occasional late arrival, early departure, or extended breaks or lunch) (Bond et al., 2008; Schwartz, 1999).

The term “scheduling control” refers to an individual employee’s ability or authority to arrange his or her work hours (Krausz, Sagie, & Bidermann, 2000; Melamed, Kushnir, & Meir, 1991). The term “flextime” may also be used to indicate that employees are able to select their own hours (Galinsky et al., 1991). These fall under the broader concept of “job control,” which is the degree to which employees are provided with the freedom and discretion to make decisions across a number of dimensions concerning their work (Dodd & Ganster, 1996; Shirom, Nirel, & Vinokur, 2006). According to Karasek’s (1979) seminal job-strain model, low levels of decision latitude are related to employee job stress and mental strain. Job control, which includes scheduling control, can enhance satisfaction and wellbeing by providing employees with the jurisdiction to manage certain stressful job-related variables (Bond & Flaxman, 2006; Bond et al., 2008; Dodd & Ganster, 1996; Schulz & Brown, 1995).

Work–life balance programs are one of the central support mechanisms available to employees in managing work and family demands. Initiatives such as flextime, family leave, and job-sharing have become popular through the years in the United States and in European Union (EU) countries (Joshi et al., 2002). Joshi et al. (2002) pointed out that while work–life balance programs in the United States are often intended to provide a competitive advantage to employers by keeping employees productive and healthy, such programs in the EU countries are frequently framed as a social responsibility to employees. Bird (2006) suggested the idea of a work–life strategy that would integrate competitive advantage and social responsibility by attending to the intersections of the organization’s and the individual’s work–life balance objectives. In South Korea, work–life balance programs have been increasingly adopted by large companies to support and encourage family formation and family care, and to counter trends toward low birth rates and reduced population (Kang et al., 2006). The Japanese government has also developed work–life balance programs in response to declining birth rates (Kang et al., 2006).

Scholars, including psychologists, sociologists, organizational behavior researchers, management researchers, and feminists, have examined the effects of family-friendly policies and the relationship between such policies and perceived work–life balance. Saltzstein et al. (2001) analyzed survey data on a sample of 32,103 US federal government employees. They found that family-friendly policies were variously effective in promoting employees’ loyalty and productivity and that perceived work–life balance was associated with job satisfaction. A positive relationship between the availability of family-friendly workplace policies and job satisfaction has been noted in numerous workplace surveys (Brough, O’Driscoll, & Kalliath, 2005; Gould & Fontenla, 2006; Saltzstein et al., 2001). In a study of 196 working mothers from the Midwestern United States, Estes (2004) found that family-friendly workplace arrangements, including schedule flexibility, reduced hours, and perceived social support from supervisors, were associated with positive parenting, including warmth and responsiveness toward children, the quantity and quality of time spent with children, and mothers’ psychological wellbeing. The significance of informal supervisory support has been noted in numerous studies. Interviewing 374 employed parents with children under 18 from 83 US companies, Secret and Sprang (2001) reported that perceived supervisory support was significantly associated with reduced role strain. Surveying 107 working mothers in Switzerland, Seiger and Wiese (2009) have found that social support, including that of work supervisors, is an antecedent to reduced work–family conflict. And drawing on a sample of 1,553 managers from five countries, Lapiere et al. (2008) have shown that employees’ perceptions of a supportive organizational culture are associated with lower levels of work–family conflict, which in turn positively affects job satisfaction, family satisfaction, and overall life satisfaction.

On the other hand, other research has suggested that formal employer-based family-friendly practices have limited or no association with reported work–life balance. Analyzing data from a nationally representative sample of 2,334 employed men and women in the United States, Mennino, Rubin, and Brayfield (2005) found that the availability of formal family-friendly company policies were less effective in reducing stress than an informal family-supportive workplace atmosphere. Bruegel and Gray (2005) pointed out that family-friendly policies could reduce fathers’ involvement in their children’s care because it is female employees who are most often encouraged to use the policies. Some scholars suggest that family-friendly
policies, such as leave provisions, flexible work scheduling, and childcare support, have sometimes been adopted to maximize productivity, thereby increasing employees’ work hours and exacerbating the imbalance of work and family (Jacobs & Gerson, 2004; Runte & Mills, 2004).

Researchers have noted that women are frequently more vulnerable to the stresses of work–life imbalance. Feminist scholars have pointed out that most women still have primary responsibility for children and household chores, and that women often have “second shift” duties at home and the workplace (Barnett, 2004; Barnett & Hyde, 2001; Hochschild, 1989).

It has been noted that women are traditionally more likely to identify themselves with the roles of mother, wife, friend, and daughter, i.e. with caring and interpersonal relationships, whereas men more often identify themselves primarily with career and work roles (Chodorow, 1978; Gilligan, 1982; Theits, 1986). Furthermore, it has been suggested that such role identification coupled with greater family care responsibilities exacerbates work–family stress and conflict among working women (Barnett, 2004; Barnett & Hyde, 2001; Keene & Quadagno, 2004; MacDonald, Phipps, & Lethbridge, 2005; Milkie & Peltola, 1999; Rosenfield, 1989; Scandura & Lankau, 1997). In addition, many employees, especially women, tend to choose to work part-time to balance work–family responsibilities even though part-time work tends to be less financially rewarding and less secure than full-time work (Evans, 2002).

In recent years, flexible work schedules and individual scheduling control have been given increased emphasis in studies of work–life integration. Many previous studies have found that flex-time may be positively associated with increased job satisfaction (Hill et al., 2001; Saltzstein et al., 2001; Scandura & Lankau, 1997) and work–life balance (Jang, 2009; Valcour, 2007). In particular, several studies have indicated that individual scheduling control is one of several effective strategies for reducing work–family conflict and enhancing job satisfaction (Costa et al., 2004; Halpern, 2005; Jacobs & Gerson, 2004; Krausz et al., 2000; Scandura & Lankau, 1997) and health and wellbeing (Costa et al., 2004; Costa et al., 2006). Using a representative sample of working adults in the United States (N = 3,552), Halpern (2005) analyzed the relationship between stress, health, and job commitment for employees with access to flex-time, and found that employees with access to time-flexible work policies reported less stress and a higher level of job commitment (including the intention to remain at the same job and loyalty toward the employer). Using the 2000 European Union Survey on Working Conditions, consisting of 21,703 workers in 15 EU countries, Costa et al. (2004) examined individual scheduling control, in which employees could determine their own schedules compared with company-based and employer-determined flex options such as compressed work weeks and variable shifts. They found that individual scheduling control alleviated the negative effects of the company-based flexibility on perceived health, safety, and social wellbeing. Using a sample of 153 nurses in an Israeli hospital, Krausz et al. (2000) found that scheduling control was more significant in predicting job-related attitudes, such as job satisfaction, organizational commitment, and burnout, than the actual number of hours worked or the work schedule.

Furthermore, some studies have suggested that flex-time is negatively related to long hours of work and the division of household labor (Wharton, 1994). Although there are inconsistent claims about flexibility, many studies have found positive effects on work–family balance in multiple regression analyses using variables such as schedule flexibility and reduced hours (Dalton & Mesch, 1990; Estes, 2004; Ezra & Deckman, 1996; Hill et al., 2001; Saltzstein et al., 2001; Scandura & Lankau, 1997). While previous studies have focused on the effects of scheduling control at only the individual or the company level, the present study examined the effects using multilevel data. Other research studies of scheduling control or schedule flexibility have shown inconsistent results (Jang, 2009). Costa et al. (2004) distinguished between flexibility at the individual level and flexibility at the company level, and reported that individual flexibility has a stronger effect on health and wellbeing. Costa et al.’s (2004) study revealed that the effects differed according to the level examined, which demonstrates the importance of conducting a multilevel analysis. According to the research findings of Scandura & Lankau (1997), degree of job satisfaction varies by perception of schedule flexibility. Halpern (2005) pointed out that work–life balance programs have made it easier for employees to control their work and family responsibilities, and that scheduling control directly affected the employee’s commitment, which is related to job satisfaction and work-related stress. There are no studies, however, that have examined the interaction effects between work–life balance programs and scheduling control. The present study examined how scheduling control and the availability of work–life balance programs are related to job satisfaction and the mental wellbeing of employees.

Hypotheses

Hypothesis 1. Individual scheduling control will be associated with a greater positive effect on mental health when work–life balance programs are available to employees than when they are not available.
Hypothesis 2. Individual scheduling control will be associated with more positive job satisfaction when work–life balance programs are available to employees than when they are not available.

Hypothesis 3. Job satisfaction will mediate the interaction effects of individual scheduling control and availability of work–life balance programs on mental health.

The conceptual model is illustrated in Figure 1, and the model will be tested by conditions for the mediated moderation model suggested by Muller, Judd, and Yzerbyt (2005).

Method

Data and sample

To investigate the hypotheses of this article, we used a survey of employee attitudes and behavior that was developed by the lead authors. The survey included closed-ended questions regarding employees’ perceptions as well as self-reports of job satisfaction, stress and mental health, scheduling control, and availability of work–life balance programs.

The data were collected from human resources managers and employees in 50 companies located throughout South Korea. These included private and public sector companies with 20 or more employees. The research team, which had targeted the inclusion of 50 companies in the study, contacted the human resources managers of 97 companies to obtain the consent from 50 of them to participate. In-person survey administration was scheduled with managers who were willing to participate. All surveys were administered by graduate research assistants, and the surveys took an average of 30 minutes to complete. They followed human subjects protocol and informed respondents that participation was voluntary and confidential. The surveys were conducted between August and December 2008.

The research team also targeted the inclusion of surveys with 20 to 30 employees from each company. In each company, one manager and a mean of 26 employees were surveyed, with a range of 13–36 employees surveyed for each company. Usable data were collected from 1,293 employees with a response rate of 86 percent. The employees were selected by the managers using nonprobability sampling. Managers personally asked employees to participate, and these names of potential respondents were then provided to the graduate research assistants. To reduce bias derived from the manager–employee relationship, the graduate students distributed and collected the surveys. All respondents filled out a self-administered, closed-ended questionnaire.

The employee respondents within each company held a variety of job positions. Forty-two percent held managerial or administrative jobs, 13 percent production or engineering jobs, 10 percent research and development jobs, and 35 percent sales or service jobs. Approximately three-quarters were employed full-time. Sixty percent were male, and just under half were married. Their average age was 34 years, and they earned an average of about 27,000 dollars a year. Eighteen percent of the respondents were union members.

The 50 companies sampled employed a mean of 2,274 employees, with a range of 20–35,700. Manufacturing companies comprised just over half, 52 percent, of the sample, financial service companies 9 percent, information technology (IT) companies 12 percent, and other service companies 27 percent.

Measures

Scheduling control. The independent variable at the individual level is scheduling control. This construct was measured by the average of two items: “I can determine my time schedules,” and “I can determine my work schedules.” The two items were specifically constructed to measure the perceptions of having choice and influence on the timing and scheduling of work. The items were a variant of the 5-item scale previously used by Krausz et al. (2000). A 5-point response scale ranged from “disagree strongly” (1) to “agree strongly” (5) where higher values indicated that employees could more easily control work. The coefficient alpha of these two items was 0.84.

Work–life balance programs. The independent variable at company level is work–life balance programs. It was measured by asking the managers the following question: “Does your company have any program that supports employees’ work–life balance?” This variable was coded 1 if the manager reported that the company has one, and 0 otherwise.

Job satisfaction. Job satisfaction measures the degree to which respondents report being satisfied and happy with their job. Job satisfaction was measured at the individual level and was tested as a mediator. We chose five items from the Job Descriptive Index (Smith,
Kendall, & Hulin, 1969) that are specifically related to the job itself, excluding items related to satisfaction of supervision, coworkers, promotion, and pay. The items had a 5-point Likert-type scale and the responses ranged from “strongly disagree (1)” to “strongly agree (5).” Responses were summed and averaged into a composite score with higher scores indicating greater job satisfaction. The specific items were as follows: “I’m satisfied with my job,” “I enjoy my current job,” “My job gives me a sense of accomplishment,” “My job is very boring,” and “I am always exhausted after my job.” The last two items were reverse coded. The coefficient alpha of these five items was 0.80.

Mental health. The dependent variable is mental health, which was measured at the individual level. For this construct, we chose five items from among the 12 items of the General Health Questionnaire (GHQ) developed by Goldberg in the 1970s (see Goldberg & Williams, 1988). The GHQ assesses the extent to which respondents have experienced a list of somatic and affective symptoms over the past three months. The items have a 5-point Likert-type scale. The responses ranged from “strongly disagree (1)” to “strongly agree (5),” and were reversed and then summed and averaged into a composite score. Higher scores indicate better mental health. The construct consisted of the following items: “I could not concentrate on whatever was occurring around me,” “I could not sleep well because of concerns,” “I’ve felt constantly under strain,” “I’ve been feeling unhappy and depressed,” and “I have lost my confidence.” The coefficient alpha of these five items was 0.87.

Control variables. The control variables at the individual level include occupation, job status, gender, marital status, wages, and union membership. Occupation was divided into four categories: managerial or administrative, production or engineering, research and development, sales or service jobs. Job status was coded 1 when the employee had a full-time job, and 0 when he or she had a part-time job. Male employees, union members, and employees who were married or living with a partner were coded 1, and all others coded 0. Wages were coded into one of 11 categories from under 10,000 dollars to more than 100,000 dollars per year. Control variables at the company level were composed of company size and industry. The company size was measured by the number of employees, and the companies were categorized into four industries: manufacturing, financial services, IT, and other services.

Analytic strategy
We examined the dimensionality of the three constructs (scheduling control, job satisfaction, and mental health), which consist of multiple items, by conducting a principal components factor analysis with varimax rotation. We obtained a 3-factor solution in which all the items had high loadings (median loading = 0.84) on each factor, which explained 68.2 percent of the variance. We then conducted confirmatory factor analysis to evaluate discriminant validity using LISREL 8.50, testing 1-factor, 2-factor, and 3-factor models. The 3-factor model fit the data best ($\Delta \chi^2 = 3,739$, $\Delta df = 3$, $p < .001$; $\Delta \chi^2 = 4,602$, $\Delta df = 2$, $p < .001$, respectively).

Since employees are nested within companies, we employed hierarchical linear modeling (HLM) (Bryk & Raudenbush, 1992). When a data set is multilevel, ordinary least squares regression may lead to an overestimation of the parameters. HLM overcomes this problem by simultaneously estimating equations for both individual and company effects (Raudenbush & Bryk, 2002).

We tested a null model in order to investigate the appropriateness of multilevel analysis. This model provides answers about whether the dependent variable and the mediator vary across companies by allowing us to partition the total variance in the variables into with-, between- and within-company components. The intra-class correlations indicated that variances of 10 percent of mental health and of 8 percent of job satisfaction resided between companies. These variances between companies were significant and nontrivial, thereby justifying multilevel analysis.

The three hypotheses of this article were tested using the mediated moderation model proposed by Muller et al. (2005). They suggested three conditions to demonstrate mediated moderation: (i) the magnitude of overall treatment effect on the outcome should depend on the moderator; (ii) the effect of the treatment on the mediator should depend on the moderator, and at the same time the mediator should have an effect on the outcome; (iii) the moderation of the residual direct effect of the treatment should be reduced compared with the moderation of the overall treatment effect.

Results
Means, standard deviations, and correlations of variables
Table 1 shows the means, standard deviations, and correlations of measures. As shown in the table, the magnitude of the correlations between the variables ranged from low to moderate.

Hierarchical linear model
Table 2 shows the results for our models, which contain both employee- and company-level predictors to examine the interaction of the variables.
Table 1. Descriptive statistics and correlations.

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n<sub>a</sub> = 1,057.  
<sup>b</sup> All values greater than 0.033 and 0.043 are significant at the 0.05 and 0.01 level, respectively.

The first equation examined the cross-level interaction effect between scheduling control and the presence of work–life balance programs. The interaction term had a significant and positive association with mental health (p < .05). That is, the effect of scheduling control on mental health was greater when work–life balance programs were available than when they were not, which supports Hypothesis 1. The second equation investigated the cross-level interaction effect between scheduling control and work–life balance programs on job satisfaction. The interaction term had a significant and positive association with job satisfaction (p < .05). In other words, the effect of scheduling control on job satisfaction was greater when work–life balance programs were available than when they were not, which is consistent with Hypothesis 2. At the same time, job satisfaction had a significant association with mental health in the last equation. Finally, the interaction term between scheduling control and work–life balance programs was reduced when job satisfaction was controlled (equation 3 compared with equation 1). A Sobel test confirmed that the reduction was significant (p < .05). These results support Hypothesis 3. These findings satisfy the three conditions for the mediated moderation that Muller et al. (2005) proposed and therefore support the three hypotheses of this article. Since the interaction term between scheduling control and work–life balance programs is no longer significant in the last equation, job satisfaction plays a role as a full mediator.

The results of control variables at the individual level indicated that male employees were significantly more likely to report positive job satisfaction and mental health, as were full-time employees. Marital status, wages, and union membership were not significantly related to job satisfaction and mental health. Employees in production or engineering occupations were more likely to report lower job satisfaction and higher mental health than employees in other occupations. The results of control variables at the company level indicated that employees in financial service industries were more likely to report higher job satisfaction than employees in other service industries. Company size was not significantly associated with job satisfaction and mental health.

The interaction effects of scheduling control and work–life balance programs are illustrated visually by Figure 2, based on the first and second equations of Table 2.

Graph (a) presents the moderating effects of work–life balance programs in the process in which scheduling control is associated with mental health. Scheduling control was divided into two groups: those with low (mean – 1 SD) and those with high (mean + 1 SD) scheduling control. When work–life balance programs were not available, the fact that employees could control the work schedule was not helpful to their
mental health at all. On the other hand, when those programs were available to employees, the more they controlled their schedule, the higher was the level of their mental health. Graph (b) presents the moderating effects of work–life balance programs in the process in which scheduling control affects job satisfaction. While scheduling control was associated with job satisfaction in both cases, the effect of such scheduling control on job satisfaction was greater when work–life balance programs were provided than when they were not.

**Discussion**

The demands of balancing employment and family responsibilities strain the health and welfare of many employees, and social welfare policy analysts are increasingly attending to the factors that can alleviate such stress. The results of the present study indicate that among this sample of employees, the interaction effects of scheduling control and the availability of work–life balance programs are positively associated with self-reported job satisfaction and mental wellbeing. The effects of scheduling control on self-reported job satisfaction and mental wellbeing are stronger when employer work–life balance programs are available, and job satisfaction mediates the effects on mental wellbeing. The findings suggest that companies in which work–life balance programs are available may be perceived by employees as more supportive and family-friendly, and that those perceptions, in conjunction with employer practices, affect job satisfaction, which promotes mental wellbeing.

Many previous studies have focused on the effects of work–life balance programs and scheduling control at only the individual level or the company level. As mentioned earlier, the effects of scheduling control and work–life balance programs are inconsistent when the

<table>
<thead>
<tr>
<th>Health Satisfaction Health</th>
<th>Satisfaction Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant 3.507 (0.150)**</td>
<td>3.113 (0.142)**</td>
</tr>
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</table>

(a) Mental health

(b) Job satisfaction

Figure 2. The moderating effects of work–life balance programs.
variables are examined at each level alone. The interaction effects have been missed in previous studies, so that the effects might be underestimated or overestimated. Another new finding of the present study is that job satisfaction plays a role as a mediator. Previous studies have established job satisfaction as an outcome variable of work–life balance programs or scheduling control. This study suggests that job satisfaction mediates the interaction effect of scheduling control and work–life balance on mental health. The effect of gender in the present study is consistent with previous research, with women reporting significantly less job satisfaction and more mental stress than men.

The present study contributes to the literature by reexamining the effects of the availability of work–life balance programs and scheduling control through interaction tests using multilevel data. The findings suggest that future research could further explore the process and effects of scheduling control options and work–life balance programming on various aspects of employee wellbeing.

Limitations

The data set used for this study is limited by its self-report survey design. The components of work–life balance programs in South Korea vary in each company, and future investigations should explore in more detail the nature and composition of work–life balance programs and their effects on job satisfaction and mental health. In addition, measures of perception variables may be subject to various sources of measurement error, including culture. First, the correlations between those variables may have been overestimated, because scheduling control, job satisfaction, and mental health were measured via self-reports by employees. However, given that there is evidence of discriminant validity between them, self-report bias does not appear to be a serious problem with the present results. Second, since this study used a cross-sectional data set, it cannot confirm cause and effect. A longitudinal or experimental study is needed to test causality between those variables. Finally, the sample of this study was collected using nonprobability sampling, and the findings are specific to these 1,293 respondents from 50 companies in South Korea.

Conclusions

The results point at a strong moderating effect of the availability of work–life balance programs in the relationship between scheduling control and job satisfaction, and between scheduling control and mental health, among the respondents in this sample. Although much has been examined about work–life balance programs, scholars have paid most attention to direct effects of the programs alone, while overlooking their moderating role. Also, most research on work–life balance programs has been conducted in European countries and the United States, while this study extends the research on scheduling control, work–life balance programs, and wellbeing to South Korea. The findings add to an empirical base to further an understanding of the ways in which employment policies can potentially ease some job stress and enhance welfare and wellbeing.

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References


